Recent Studies in Economics of Development, Business and Accounting

Beta Yulianita Gitaharie • Yulianti Abbas
Miranti Kartika Dewi • Dwini Handayani
Editors

NOVA

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:33:51.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:33:51.

RECENT STUDIES IN ECONOMICS OF DEVELOPMENT, BUSINESS AND ACCOUNTING

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

No part of this digital document may be reproduced, stored in a retrieval system or transmitted in any form or by any means. The publisher has taken reasonable care in the preparation of this digital document, but makes no expressed or implied warranty of any kind and assumes no responsibility for any errors or omissions. No liability is assumed for incidental or consequential damages in connection with or arising out of information contained herein. This digital document is sold with the clear understanding that the publisher is not engaged in rendering legal, medical or any other professional services.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitahaie, Nova Science Publishers, Incorporated,
2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2021-03-03 13:38:51.

BUSINESS, TECHNOLOGY AND FINANCE

Additional books and e-books in this series can be found
on Nova's website under the Series tab.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:33:51.

BUSINESS, TECHNOLOGY AND FINANCE

RECENT STUDIES IN ECONOMICS OF DEVELOPMENT, BUSINESS AND ACCOUNTING

BETA YULIANITA GITAHARIE
YULIANTI ABBAS
MIRANTI KARTIKA DEWI
AND
DWINI HANDAYANI
EDITORS

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

nova
science publishers
New York

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:33:51.

Copyright © 2020 by Nova Science Publishers, Inc.

All rights reserved. No part of this book may be reproduced, stored in a retrieval system or transmitted in any form or by any means: electronic, electrostatic, magnetic, tape, mechanical photocopying, recording or otherwise without the written permission of the Publisher.

We have partnered with Copyright Clearance Center to make it easy for you to obtain permissions to reuse content from this publication. Simply navigate to this publication's page on Nova's website and locate the "Get Permission" button below the title description. This button is linked directly to the title's permission page on copyright.com. Alternatively, you can visit copyright.com and search by title, ISBN, or ISSN.

For further questions about using the service on copyright.com, please contact:
Copyright Clearance Center
Phone: +1-(978) 750-8400 Fax: +1-(978) 750-4470 E-mail: info@copyright.com.

NOTICE TO THE READER

The Publisher has taken reasonable care in the preparation of this book, but makes no expressed or implied warranty of any kind and assumes no responsibility for any errors or omissions. No liability is assumed for incidental or consequential damages in connection with or arising out of information contained in this book. The Publisher shall not be liable for any special, consequential, or exemplary damages resulting, in whole or in part, from the readers' use of, or reliance upon, this material. Any parts of this book based on government reports are so indicated and copyright is claimed for those parts to the extent applicable to compilations of such works.

Independent verification should be sought for any data, advice or recommendations contained in this book. In addition, no responsibility is assumed by the Publisher for any injury and/or damage to persons or property arising from any methods, products, instructions, ideas or otherwise contained in this publication.

This publication is designed to provide accurate and authoritative information with regard to the subject matter covered herein. It is sold with the clear understanding that the Publisher is not engaged in rendering legal or any other professional services. If legal or any other expert assistance is required, the services of a competent person should be sought. FROM A DECLARATION OF PARTICIPANTS JOINTLY ADOPTED BY A COMMITTEE OF THE AMERICAN BAR ASSOCIATION AND A COMMITTEE OF PUBLISHERS.

Additional color graphics may be available in the e-book version of this book.

Library of Congress Cataloging-in-Publication Data

Names: Yulianita Gitaharie, Beta, editor. | Yulianti, editor. | Kartika Dewi, Miranti, editor.
Title: Recent studies in economics of development, business and accounting / [edited by] Beta Yulianita Gitaharie, Yulianti Abbas, Miranti Kartika Dewi, Dwini Handayani.
Description: Hauppauge : Nova Science Publishers, 2020. | Series: Business, technology and finance | Includes bibliographical references and index.
Summary: "Forget to get exhausted while finding the most updated literature and research across the area of economics of development, business and accounting. Whether you aim to seek research ideas, learn from best practices, formulate evidence-based policies, "Recent Studies in Economics of Development, Business and Accounting" is your decent starting point. By showcasing evidence from Indonesia, the fastest-growing economies in the south-Asia region and beyond, this edited volume brings wide and deep insights on: · How supports from government (through policy and subsidy), academia (through community engagement programs), public (through cash waqf) play role in improving the sustainability of informal sectors including microfinance and fishery, How corporate governance structure, the structure of ownership, gender diversity and country law play a role in companies' CSR disclosures and earning management How children's education, marriage, and other demographic indicator affect intergenerational income mobility to their parents, How the integration of business ethics into the undergraduate accounting curriculum, teaching methods and student interactions correlate with student ethical sensitivity, How companies' tax avoidance and audit quality influence their probability to participate in tax amnesty · How the host and home country's determinants influences return of capital market product, How business leaders and policymakers may generate practical implications from various studies on the volume"-- Provided by publisher.
Identifiers: LCCN 2020023017 (print) | LCCN 2020023018 (ebook) | ISBN 9781536173819 (hardcover) | ISBN 9781536180442 (adobe pdf)
Subjects: LCSH: Economic development--Case studies. | Economic policy--Case studies. | Social responsibility of business--Case studies. | Corporations--Taxation--Case studies. | Income distribution--Case studies. Classification: LCC HD82 .R3933 2020 (print) | LCC HD82 (ebook) | DDC 330.9598--dc23
LC record available at https://lccn.loc.gov/2020023017
LC ebook record available at https://lccn.loc.gov/2020023018

Published by Nova Science Publishers, Inc. † New York

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:33:51.

CONTENTS

Preface		**ix**
Section 1	**Human Capital, Real Sector and Sustainable Development**	**1**
Chapter 1	Underground Economy from Sustainable Growth Perspectives in Indonesia *Oda Sekar Ayu Issusilaningtyas and Telisa Aulia Falianty*	**3**
Chapter 2	Dynamics of Financial Development and Policy: Impact on Indonesia's Real Sector *Telisa Aulia Falianty*	**19**
Chapter 3	Productivity Spillover among Region in Manufacturing Sector: A Spatial Analysis with Evidence from Indonesia *Irvan Kuswardana, Nachrowi Djalal Nachrowi, Andi Fahmi Lubis and Telisa Aulia Falianty*	**41**
Chapter 4	The Effect of Fishing Vessel Subsidy on Indonesia's Capture Fisheries Production *Winda Nuramalia and Sartika Djamaluddin*	**63**
Chapter 5	Analysis of Asymmetric Monetary Effects on Regional Inflation in Indonesia *Alethea Yuwanda and Sugiharso Safuan*	**81**
Chapter 6	Impact of Implementation of Food Safety Standards on Imports: Analysis of Indonesian SPS Policy *Sulastri and Mahjus Ekananda*	**101**
Chapter 7	Intergenerational Income Mobility among Sons and Daughters in Indonesia *Restananda Nabilla Yusacc and Dwini Handayani*	**127**

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:33:59.

Chapter 8	Do Smarter Spouses Make You Healthier? *Syta Kurnia Putri and Dwini Handayani*	**149**
Section 2	**Management Strategy and Human Resource**	**173**
Chapter 9	Impact of Family Ownership and Political Connections on Earnings Management Strategies *Nirma Amalia and Sylvia Veronica Siregar*	**175**
Chapter 10	Rewards, Elaboration Likelihood Model, Reward-Based Crowdfunding and Emerging Market Countries *Ayasha Cecilia Nadira and Liyu Adhi Kasari Sulung*	**195**
Chapter 11	Effects of Curriculum Design, Teaching Methods, and Academic Environment on Ethical Sensitivities of Indonesian Accounting Students *Emil Bachtiar, Fitriany Fitriany, Viska Anggraita and Kurnia A. Rais*	**215**
Chapter 12	Influence of Macroeconomic Determinants on the Return of REIT with Cross-Listed Assets *Herman Widjaja and Rofikoh Rokhim*	**229**
Section 3	**Reporting, Auditing, Business Financial Performance**	**255**
Chapter 13	Effect of Customs Value, Competence, Religiosity and Wealth of the Auditor on Customs Audit Findings *Teguh Setiyono and Fitriany Fitriany*	**257**
Chapter 14	The Role of Board of Commissioners and Audit Committee on Earnings Management after IFRS Convergence *Nabella Roma Desi and Aria Farah Mita*	**277**
Chapter 15	The Effect of Product Market Power and Industry Competitiveness on Firms' Earnings Quality with Board of Commissioner Effectiveness as a Moderating Variable *Jessica Anastasya Mutiarani and Vera Diyanty*	**291**
Chapter 16	Analysis of Audit Risk and Audit Fees of Family Firms in Indonesia *Rahmat Nugraha and Desi Adhariani*	**311**
Chapter 17	The Effects of Tax Avoidance and Audit Quality on Tax Amnesty *Ni Kadek Rahayu Nadi and Dwi Martani*	**323**

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:33:59.

Section 4 **Finance and Banking** **343**

Chapter 18 The Effect of Cost Stickiness Behaviour on Executives Compensation: The Case of Indonesian Listed Banks **345**
Ivone Wardhani and Hilda Rossieta

Chapter 19 Do Systems of Common Law Versus Civil Law and the Percentage of Muslims Enhance the Effect of CSR Disclosures on Islamic Banks' Performance? **357**
Agus Maulana, Dodik Siswantoro and Miranti Kartika Dewi

Chapter 20 Islamic Microfinance and Women's Empowerment **369**
Desi Adhariani

Chapter 21 Analysis of Gender Diversity and Voluntary Disclosure **377**
Rizqi Nur Fitriana and Desi Adhariani

Chapter 22 Financing Micro-Enterprises through the Cash *Waqf* **391**
Dewi Sriani, Dodik Siswantoro and Miranti Kartika Dewi

Chapter 23 Indonesian IPO Firms' Intended Use of Proceeds and Post-Issue Operating Performance **405**
Kaleb Hasudungan and Wardatul Adawiyah

About the Editors **425**

Index **427**

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:33:59.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:33:59.

PREFACE

Bringing together recent studies in the economics of development, business and accounting are thought-provoking and appealing, because the three areas pooled fruitful juncture focusing on economic decision making and control for organizations across sectors. A diversity of methods and theories enrich readers with discussions from various intellectual perspectives. By highlighting on Indonesia, the largest country in ASEAN and among the fastest-growing economies in the world, this volume is a critical starting point not only for academia to reap the insights from most-recent updated and innovative studies on Indonesia, but also for practitioners, and policymakers seeking to formulate decisions to make their work more efficient as empirical-based recommendations have been laid down here in this volume. This edited volume is divided into four sections.

Section 1 provides reflections on how the nation's economy can be upscaled optimally to reach its sustainability stage by considering analysis on the underground economy, fiscal development, productivity spillover, government subsidy on certain sectors, quality standardization on certain products and asymmetric monetary policy. Furthermore, this section also attempts to provide insights on how demographic issues such as education, gender, marriage, employment, and commuting affect the well-being of the society – which is also another indicator of sustainable development.

While Section 1 discusses the macro-level analysis, Section 2 illustrates empirical findings on firm/organization-level analysis. Issues such as how family ownership and political relate to profit management strategies; role of job characteristics, human resources practice, and employee engagement on organizational commitment; factors affecting success of reward-based crowdfunding; determinant of REIT returns with cross-listed assets are discussed here. In addition, as managing organization requires sufficient level of ethical consideration, an article in this section also discusses how integration of business ethics into the undergraduate accounting curriculum, teaching methods, and student interactions correlate with student ethical sensitivity.

Go into further detail, Section 3 provides various deeper insights on the auditing-related topics. Factors determining the quality of audit findings, fees, likelihood of fraud occurrence on financial statements, earning management, earning quality, audit risk, and participation on

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:34:42.

tax amnesty are among the highlighted topics. Moreover, the inclusion of factors rarely used in former researches such as religiosity and wealth of the auditor is also included in discussion of an article in this section. Section 4 completes the discussion of the above more 'conventional' issues by outlining Islamic microfinance, waqf, Islamic bank through various research methods – a must-read for those who aim to explore this field further.

In conclusion, we would like to thank the many researchers and section authors who have made this edited volume possible. These authors have put in an enormous amount of work despite having to operate to very tight time deadlines. Finally, we gratefully acknowledge the support provided by Nova Publishers. Thank you very much, all.

Beta Yulianita Gitaharie
Yulianti Abbas
Miranti Kartika Dewi
Dwini Handayani

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:34:42.

SECTION 1: HUMAN CAPITAL, REAL SECTOR AND SUSTAINABLE DEVELOPMENT

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:34:50.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:34:50.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 1

UNDERGROUND ECONOMY FROM SUSTAINABLE GROWTH PERSPECTIVES IN INDONESIA

Oda Sekar Ayu Issusilaningtyas* *and Telisa Aulia Falianty***
Departement of Economics, Universitas Indonesia, Depok, Indonesia

ABSTRACT

Underground economy carries ambiguous advantages and disadvantages within an economic state. Over the years, it is acknowledged that economists are still in conflict about the specific topic. Although the underground economy might help an economic state in the case of crisis as many economist believe, it also might destroy an economic performance of a country because of the misleading measurements which are not considering underground economy. The problems rise when SDGs are seen as comunal goals in which one of the measurement does not consider underground or shadow economy.

The objective of this research is to obtain public policy analysis for underground economy problem in Indonesia as it is needed to achieve SDGs. The research period is from 2004 -2017 and population in this research is Indonesia. Sample is obtained through purposive sampling method. Ordinary Least Square regressions are used as the data analysis method in this research. It is found from this research that the average value of underground economy in Indonesia from 2004 to 2017 is 19% of GDP with the loss from tax potential around 2,2% of GDP. It means that the government should take underground economy into account in order to develop planning in achieveing SDGs.

Keywords: underground economy, shadow economy, black economy, GDP, economic growth, SDGs

* Corresponding Author's E-mail: oda.sekar@ui.ac.id.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:02.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 1

UNDERGROUND ECONOMY FROM SUSTAINABLE GROWTH PERSPECTIVES IN INDONESIA

Oda Sekar Ayu Issusilaningtyas* *and Telisa Aulia Falianty*
Departement of Economics, Universitas Indonesia, Depok, Indonesia

ABSTRACT

Underground economy carries ambiguous advantages and disadvantages within an economic state. Over the years, it is acknowledged that economists are still in conflict about the specific topic. Although the underground economy might help an economic state in the case of crisis as many economist believe, it also might destroy an economic performance of a country because of the misleading measurements which are not considering underground economy. The problems rise when SDGs are seen as comunal goals in which one of the measurement does not consider underground or shadow economy.

The objective of this research is to obtain public policy analysis for underground economy problem in Indonesia as it is needed to achieve SDGs. The research period is from 2004 -2017 and population in this research is Indonesia. Sample is obtained through purposive sampling method. Ordinary Least Square regressions are used as the data analysis method in this research. It is found from this research that the average value of underground economy in Indonesia from 2004 to 2017 is 19% of GDP with the loss from tax potential around 2,2% of GDP. It means that the government should take underground economy into account in order to develop planning in achieveing SDGs.

Keywords: underground economy, shadow economy, black economy, GDP, economic growth, SDGs

* Corresponding Author's E-mail: oda.sekar@ui.ac.id.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:25.

INTRODUCTION

The United Nation in 2016 declared and implemented a campaign and envision of 2030 named Sustainable Development which consist of 17 goals. According to the United Nation (2018), Sustainable Development Goals (SDGs) are explicitly include disability and persons with disabilities which are translated into problems related to education, growth and employmenet, inequality and accessibility of human settlements.

One of its 17 goals is goal number 8 in which SDGs activities to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent labor for all. The target by 2030 is to achive sustain per capita economic growth in accordance with national circumstances. The United Nations named at least 7% GDP growth per annum is the target for the least developed countries (United Nation, 2018). It is known that the GDP is used in this target as the measurement for economic growth.

It is stated across the scholarly that Gross domestic product (GDP) is one of the dependable indicators in assessing economic performance. In the past few years, it is alleged by economists that GDP might be able to capture the real economic activities. However, Ahmed and Ahmed (1995) claimed that GDP counts only formal activities without any considertaion for underground economy, thus it deteriorates the measurement of real economic perfoemaces. It is found by Schneider and Enste (2000) that individuals who participate in underground economy activities disinclined to be recorded nor identified. In view of this findings, it is expected to distrust the dependability of GDP in assessing economic performance to measure the success of SDGs in 2030.

In contrast, the explanation of underground or shadow economy is still dubious. Therefor, the researches with underground economy topic have result-diversed despite have the same studied country and period. In reality, Policy makers are concerned about this issue as the large portion of underground economy might carry out asymmetric and unrealistic statistics for their policy making. Such ambiguous information might outcome in inapplicable policies for the country. Thus, research on underground economy it is still vital and relevant to conduct because it is critical for the official economy of the nation-state (Fernandez and Velasco, 2015).

Moreover, in Indonesia, underground economy has an increasing trend from time to time according to some researches. Schneider and Enste (2005), estimated in 1999 – 2000 the average Indonesia annual underground economy was about 19,4% of GDP. This estimation were increasing from time to time until the recent study by Azwar (2017) which estimated that the Indonesia average annual underground economy was about 22,1% of GDP from 2011 to 2015. To add things into the findings, empirical discoveries by Orsi, Raggi and Turino (2014) showed that underground economy turn out to be a stern fence for economic system. For Indonesia as a developing country, achieveing SDGs goals equals more hardwork, especially in gray area like underground economy as

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:25.

it would be devastating the economic policies. Rasbin (2013), itemized more than a few actions categorized as underground economy in Indonesia and declared that there is an immense potential of underground economy resulting from tax tightening, counterfeit goods, contraband, and else in Indonesia.

All things considered, it is essential for economic policy making to consider the estimation of underground economy. The closest approximation of the underground economy would be beneficial for policy making purposes, although it is infeasible to calculate its real condition of underground economy. Good economic policy will help Indonesia to achieve SDGs number 8 which related to economy and employment. It is necessary for Indonesia as a developing country to comprehend the total economy, inspite of the recorded. Following this findings, the research is going to study about underground economy from sustainable growth perspective in Indonesia.

LITERATURE REVIEW

In Indonesia some researches about underground economy was also conducted. Arifah (2009) used currency demand approach to estimade the size of underground economy in Indonesia before and after 1998 national monetary crisis. It is found that during economy shock because of national financial crisis in 1998, the percentage of underground economy was increasing while the GDP was decreasing. Likewise, Purnomo (2010), Samuda (2016) and Azwar (2017) used currency demand approach to approximate Indonesia underground economy state quarterly for short-term research period. In contrast, Tatariyanto (2014) choose GLAMM model to estimate underground economy in Indonesia from 2000 to 2008 adding variation to the researches with this topic.

It is estimated by Purnomo (2010) that the size of Indonesia underground economy was around 5.03% - 5.04% of GDP. The tax potential from these underground activities were about IDR 18.76 billion annually. It is studied by Samuda (2016) that the size of Indonesia underground economy was about 8.33% of GDP from 2011 to 2013. These findings are not aligned with Azwar (2017) that estimated the size of Indonesia underground economy in 2011 – 2015 was equivalent to 22,1% of GDP. In contrast, Tatariyanto (2014) used GLAMM model in estimating Indonesia underground economy and stated that the average magnitude of underground economy in Indonesia 2000 – 2008 was around 20% of GDP.

On the other hand, Tanzi in 1983 build currency demand approach as part of indirect method to estimate average size of underground economy in USA. The indirect method built by Tanzi then developed over the years with many other researches. Likewise, Fernandez and Velasco (2015) using Spain as their studied area, performed the method to estimate the underground economy. Moreover, the currency demand approach is also

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:25.

done by Nchor and Konderla (2016) to estimate Czech Republic underground economy and tax evasion. Other than that, there is the model-based method that is performed in quite a lot of researches for example using Dynamic Stochastic Generalized Equilibrium (DSGE). One of underground economy researches that using DSGE is performed by Carilo and Pugno (2004) and Orsi et al. (2013) to test 2 set of policies linking underground economy and underdevelopment of a country. In the other hand, Wang et al. (2006), performed MIMIC approach to in the size estimation of of underground economy.

Underground Economy

Carilloa and Pugno (2004) found that underground economy comes with variant synonims *i.e* black economy, hidden shadow economy and others while in fact they are one similar terminology. The terminology is used to describe an event in which economic activities are not recorded, registered, counted, taxed and regulated. It is claimed by Tahmasebi and Rocca (2014) that underground economy is a vague concept. They argued that several definitions of underground economy are tailed by the same characteristics such as great number of market transactions performed using cash and the transactions are not informed or acknowledged to the government.

Furthermore, it is believed in a research conducted by Nchor and Konderla (2016) that hidden nature of underground economy is inevitable and develop the major basic problem. It is alleged that the hidden nature of underground economy develops into mostly illegal activities in a form of tax evasion and trade contraband. It is argued by Feige and Urban (2008) that underground economic events are commonly known as playing a major role in transition economies. The failure of economic transition could be occurred because of the misconception of GDP's dependability in measuring economic for policy making as it does not capture the hidden nature of economic activities.

It is defined by Nchor and Konderla followed Schneider and Enste (2002) that underground economy is an all market-based legal production of goods and services which purposely hidden from public in order 1) to avoid tax payment, 2) to avoid contribution of social, 3) to avoid meeting certain legal labor market standards and 4) to avoid complying with certain administrative procedures. The classification of underground economy activities is explained in Table 1 below.

To sum things up, it is important to estimate underground economy as a foundation for economy policy making. It is acknowledged that to capture the exact state of underground economy is infeasible. However, the closest estimation will be adequate for policy making purposes.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:25.

Table 1. Classification of Activities in Underground Economy

	Monetary Transactions	**Non-Monetary Transactions**
Illicit Activities	• Stolen goods markets • Money laundering • Drug smuggling and market • Fraud of credit and debit card • Gambling • Theft of identity • Industrial espionage • Prostitution • Tax evasion • Counterfeiting	• Barter economy • Software piracy • Media piracy
Legalized or pseudo-legal activities	• "check cashing" actions • Underported wages	• trade of services • *DIY* work

Source Schneider and Enste (2002), modified.

GDP

GDP is defined as a market value of final goods and services produced in a specified economy in a certain period (Mankiw, 2007). Mankiw (2007) also argued that there are two perspectives in statistically analyzing GDP which are (1) as a total income of everyone in economy or (2) as a total expenditure of everyone in economy. It is always mentioned as the indicator to assess the economic performance and welfare of a country.

However, many economists still argued that GDP is not a perfect measurement for this. It is said that GDP is not reliable because (1) GDP does not count the natural resources and environment (2) GDP does not consider income inequality (3) it does not include immaterial activities (4) GDP does not include underground economy activities. All of this, especially things related with underground economy lead the GDP result to be biased. The measurement will not reflect the real condition of economy. Underground economy might make GDP become overvalued or undervalued.

Unemployment Rate

Bajada and Schneider (2009) argued that the rate of unemployment typically will move counter to contractions and expansions within economic activity. It is explained that when economy had contractions resulting in the increase of unemployment rate, the unemployed labor is compensated in underground economy. However, there is a dependency to underground economy activities as results of decrease number of disposable incomes from being unemployed.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:25.

Other than that, Bajada and Schneider (2009) also mentioned that people who are working in official economy might as well engage in the underground economy activities even though just in a part-time basis. This bring up the research from Tanzi (1999) which argued that the connection of underground economy and the unemployment rate is uncertain.

Even though the relationship between unemployment rate and underground economy is ambiguous, it cannot be put aside that the two is indeed linking to each other. It is expected that the growth in underground economy can also be a result of the growth in unemployment rate as the unemployed people move from official economy to underground economy.

METHODS

Based on a research conducted by Schneider and Enste (2000), it is found that there are three key approaches to estimate underground economy: (1) direct method, (2) indirect method and (3) model-based. The direct method is usually applied at microeconomic level. The indirect method is an approach that using macroeconomic indicators to estimate the size of underground economy. Lastly, the model-based method is an approach which treats underground economy as a latent variable.

However, this research will follow modified currency demand approach model developed by Purnomo (2010), as well as a modification from Arifah (2009). The modified model is obtained from a research model developed by Wibowo and Sharma (2005), Kemal (2007), and Panjaitan (2007). The research model is as follows:

$$Ln(C) = \beta_0 + \beta_1 Ln(Y) + \beta_2(R) + \beta_3(In) + \beta_4(T) + u\ldots \quad (1)$$

Where:

C = Currency in circulation (real values adjusted with GDP deflator)
Y = Economic growth with the proxy using real GDP
R = Opportunity cost of holding currency with the proxy of 3-moths deposit rate
In = Inflation
T = Tax burden calculated using OECD definition of tax burden that is total revenue to nominal GDP

The model used in this research is different from previous model in terms of proxy used to represent the variable. Purnomo (2010) used 1-month deposit rate and Arifah (2009) used real GDP for tax burden calculation, whereas in this research 3-months deposit rate and nominal GDP are used instead. It is mainly because of the difference in

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:25.

research period from previous study, as this research is aimed to look closer to the direction of SDGs implementation in Indonesia.

Moreover, underground economy is estimated with several sets of assumptions. These assumptions are mentioned by Ogunc and Yilmaz (2000) in Arifah (2009), they are (1) Underground economy activities are done using currency (2) Velocity of money from legal economy equals velocity of money from underground economy* (3) Underground economy happened as a direct consequence from high tax expense.

This model along with the assumptions can be used to estimate underground economy in a country. The steps in estimating underground economy are as follows:

1. Regress data with the existing model and use the estimation result for further calculation steps
2. Calculate currency holding when tax is available (Cob Tax) by multiplying regression model with available annual data
3. Calculate currency holding when tax is unavailable (Cob Non-Tax) by multiplying regression model without tax with available annual data
4. Estimate illegal money = Cob Tax – Cob Non-Tax
5. Estimate legal money = M1 – IM
6. Estimate velocity of money = GDP / LM
7. Since velocity of money underground economy equals velocity of money formal economy, underground economy can be estimated by multiplying illegal money with velocity of money
8. Calculate percentage of underground economy to GDP
9. Estimate tax evasion = underground economy x tax ratio

The goal of this research is to analyze the public policy related to underground economy as to achieve SDGs 2030. In analyzing underground economy, the data were collected from SEKI Bank Indonesia, Direktorat Jenderal Pajak, World Bank, IMF and OECD. This study took the period from 2004 to 2017 as to picture the broaden perspective. The underground economy will be analyzed using statistical procedure and economy analysis.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

* Arifah (2009) mentioned that this assumption was said to be too normative and too controversial. Some researches are agreed that given underground economy transactions are cash oriented, their velocity of money should be faster that formal economy.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:25.

EMPIRICAL RESULTS AND DISCUSSIONS

Statistical Test Analysis

From previously mentioned economy background throughout the research period and the regression which had been performed, it is concluded that the model used for currency demand approach in this research is as follows:

$$Ln(C) = -7.580 + 1.157Ln(Y) *** +0.007(R) - 0.003(In) + 3.492Ln(T) *** +u \quad (4.1)$$

***significant in α 1%, R2 0.942527, Adjusted R2 0.938020, Durbin-Watson Stat 1.498582

Where:

C = Currency in circulation (real values adjusted with GDP deflator)
Y = Economic growth with the proxy using real GDP
R = Opportunity cost of holding currency with the proxy of 3-moths deposit rate
In = Inflation
T = Tax burden calculated using OECD definition of tax burden that is total revenue to nominal GDP

Towards the equation above, the statistical tests were performed. First, to make sure the regression did not enclose spurious result, the stationary and cointegration test was performed. The results were as defined in the table below.

Table 2. Stationary Test Result

Variables	**Level**	
	Probability	**Result**
Currency in Circulation (LNCC_R)	0.9975	not stationary
Real GDP (LN_RGDP)	0.9999	not stationary
Inflation (INFL)	0.1456	not stationary
Tax Burden (TN)	0.0527	not stationary
Deposit Rate (DEPRATE_3)	0.4124	not stationary

From the Table 2, it is concluded that all variables are not stationary at level. The impact of this finding is that the short-term estimation for this model cannot be performed. From the Table 3, it is concluded that the residual data are stationary at level

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:25.

and the model is cointegrated. The impact of this finding is that the long-term estimation for this model can be performed.

Table 3. Cointegration Test Result

Variables	**Level**	
	| t-Statistics |	**Result**
RES1	1.848769*	stationary

*alpha (α) 10%.

Source: eViews output, mofidied.

Next, the classical assumption tests were performed to test the goodness fit of this regression. The results showed that all classical assumption was passed in this regression.

Table 4. Model Regression Result

Dependent Variable: LNCC_R				
Method: Ordinary Least Square				
Variables	**Coefficient**	**Std. Error**	**t-statistics**	**Probability**
LN_RGDP	1.156555	0.045565	25.38261	0.0000
INFL	-0.003432	0.005609	-0.611856	0.5434
TN	3.491958	0.448443	7.786846	0.0000
DEPRATE_3	-0.006569	0.005086	-1.291501	0.2024
C	-7.580475	1.638290	-4.627067	0.0000
R Square	0.942527			
Adjusted R Square	0.938020			
F- statistics	209.0949			
Prob. (F-statistics)	0.000			
Durbin-Watson Stat	1.498525			

Source: eViews, Author (2018).

It is shown from Table 4 that real GDP and tax burden have significant partial influences towards currency in circulation. It is also concluded that inflation and 3-months deposit interest rate have no significant partial influence towards currency in circulation. Consequently, real GDP and tax become the more focus variables in this research.

GDP as the proxy of economic growth as well as national income is part of important variables in currency demand approach. A theory by Keynes mentioned that it has a positive correlation with currency. This theory is reflected in the regression model.

In the regression result, it is known that the coefficient for this variable is 1.1566. This result is interpreted as 1% increase in real GDP will increase currency in circulation for 1.1566%, ceteris paribus. As a result, the consideration for GDP in arranging

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:25.

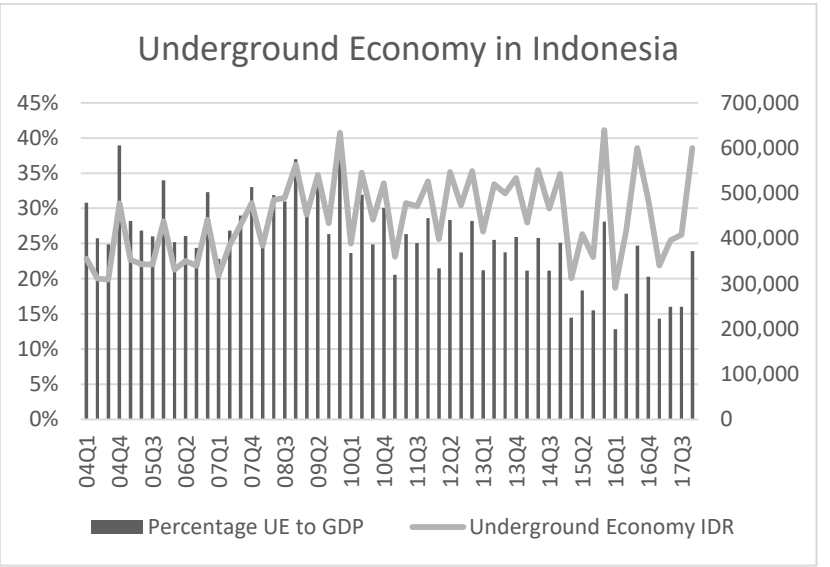
underground economy policy is important. The higher real GDP gets, the higher currency in circulation might appear.

On the other hand, Samuda (2016) underlined the importance of tax burden variable as to statistically significant towards currency in the model. It is assumed that the usage of currency as a transaction tool will simplify underground economy actors in doing tax evasion.

The theory is reflected in the regression model result. Tax burden variable significantly influenced currency in circulation and has a positive coefficient. This can be interpreted that 1% increase in tax burden will increase currency in circulation for 3.492%, ceteris paribus. The higher tax burden, the higher currency in circulation value is. It can be concluded that tax burden variable might become an important consideration to forming some set of policies for underground economy.

Underground Economy Estimation

The next steps were estimating the underground economy. Methods performed in these stages were align with procedures written in the previous section. As a result, it is found that the underground economy condition in Indonesia is as follows (the details tabulations are in appendix):



Source: Author, 2018.

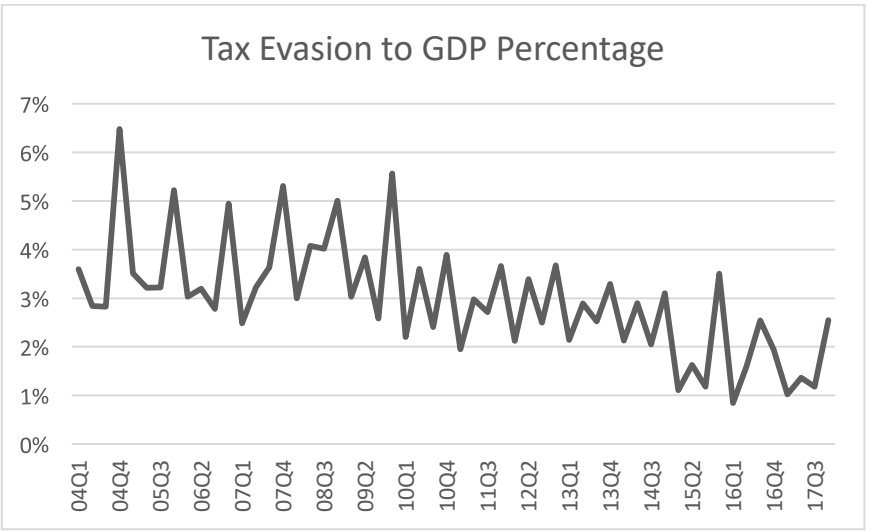
Figure 1. Underground Economy in Indonesia.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:25.

The growth of underground economy fluctuates annually and carry increasing trend in the last quarter of each year as seen in Graph 4.7. The two highest rates of underground economy to GDP is on the last quarter in 2004 (39% of GDP) and in the last quarter of 2009 (32% of GDP). This trend is closed to Tatariyanto (2014) which use GLAMM model in the research. Compare with recent studies, this result is different from Samuda (2016) but close to the estimation conducted by Azwar (2017). Despite the differences in result compare with some previous study, this estimation still can be used because Arifah (2009) argued that the most important part in analyzing underground economy is not only about the estimation but also the trend.

Moreover, it is argued that underground economy which defined as unrecorded transaction might have disadvantages for a country. These disadvantages are captured in potential tax revenue that is not earned. This loss in Indonesia during research period is presented below. It is found that from 2004 to 2010 the movement of tax evasion is stagnant. It was only after 2010 that the tax evasion begun to decrease to its lowest point in 2016 first quarter.



Source: Author, 2018.

Figure 2. Tax Evasion to GDP Percentage.

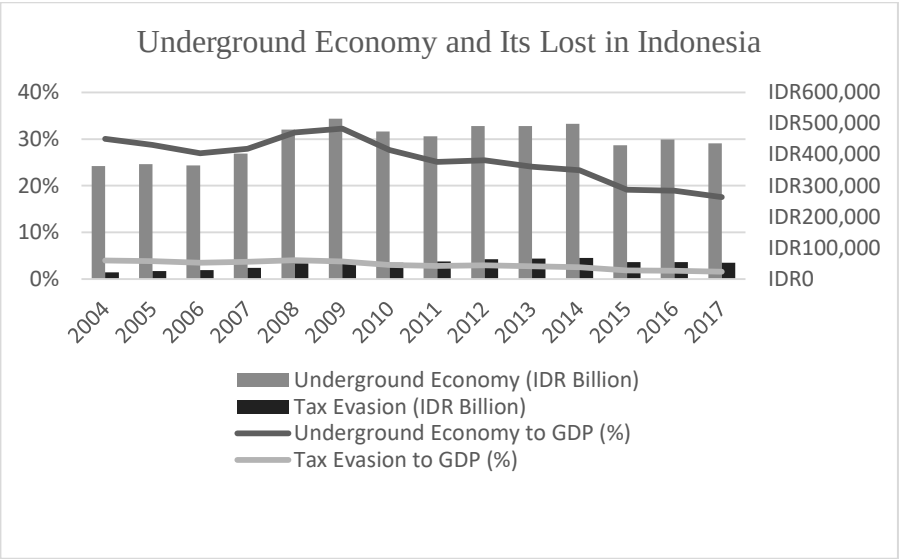
Policy Discussion in Perspective of SDGs

There is a decreasing trend of underground economy and tax evasion from the past three years. This finding is seen as an opportunity to improve the policy for mitigating underground economy effect within the economy. It is important as to accomplish SDGs number 8 which said to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:25.

In 2015, the underground economy in Indonesia was significantly decreasing along with the tax evasion as seen in Graph 4.3. This phenomenon was happened when Indonesia's economic growth was at the lowest level in the last 6 years (Bank Indonesia, 2016). The deceleration in economy growth caused many other aspects to decrease. This condition is occurred because of the deceleration in global economy growth. Responding to the situation, central bank and government were developing some policies to secure macro stability and support economic recovery. As a result, in the second semester of 2015, the economic recovery momentum begun.



Source: Estimation, author (2018).

Figure 3. Underground Economy and Tax Evasion in Indonesia.

In contrast, according to BI report in 2011, despite of uncertainty in global economies, Indonesia was growing steadily. The economic growth in 2011 was the highest in the last ten years (6,5%). Generally, this high growth was supported by macroeconomy stability which might cause the underground economy to decrease in 2011 although it is not reflected in tax evasion estimation. It was because even though unemployment rate was decreasing, and labors move to formal sector, but they were not objected to tax deduction.

The difference with decreasing momentum of underground economy in 2011 and 2015 showed that the room for improvement in public policy to control underground economy is available. The control is needed to achieve the target in indicator 8.1 for SDGs stated to sustain per capita economic growth at least 7 per cent GDP growth per annum in the least developed countries.

Since 2014, the underground economy in Indonesia was steadily moving in 25 per cent of GDP. In the other hand, the GDP growth of Indonesia since 2014 to 2017 was

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:25.

around 5% per annum. This statistical number shows 2% gap between current circumstances and the SDGs in 2030. Therefore, controlling underground economy is needed to fill the 2% void.

One of the channels to control underground economy is by using taxation policy. It happened in 2015. The deceleration of global economy growth in 2015 also pushed government to support the domestic economy growth using their fiscal policy. One of channels in fiscal is taxation policy. As to anticipate the trend in decreasing of tax revenue to GDP ratio, government of Indonesia developed simultaneous policies and named 2015 as the Taxpayer Education Year (Bank Indonesia, 2016).

One of the policies is sunset policy which lightened the sanctions for taxation mistakes made by public. The sunset policy is written in PMK no 91/PMK.03/2015. This regulation is a formal channel to send incentives for taxpayers which will decrease tax evasion acts. In contrast to relaxed policy, the government also developing tight policy for taxpayers who were doing tax evasion. This policy is called gijzeling. The gijzeling policy enforced taxpayers to pay their unpaid tax payable. Other policies were also performed in every sector. Therefore, it can be concluded that the tax evasion and underground economy level in 2015 decreased significantly in 2015.

Other than that, another channel is by using labor policy. However, labor policy at macro level is seen as in which an appreciation of informal work outside employment is essential if a realistic assessment of society's economic performances is to be gauged (Ferman et al., 1987). Labor policy theoretically will affect underground economy because of its informal labor variables. It needs to take into account that informal labor tends to not be recorded in official economy.

The government in 2015 arranging set of labor policy in its economic policy stage IV. The labor policy in 2015 was an act to increase the welfare of labors. The policies are related to minimum level of wages and measured increase of wages each year, reduction of live expenses which related to national security system (BPJS Kesehatan dan Ketenagakerjaan), and financing access for public business (Kredit Usaha Rakyat). The measured increase of wages is an improvement in labor policy as it would standardize wages growth percentage with several criteria. This led underground economy to decrease significantly in 2015.

CONCLUSION

This research tried to measure underground economy value in Indonesia 2004 to 2017 using currency demand approach. Currency demand approach analyze currency demand sensitivity triggered by most importantly tax revenue. Based on discussion in previous part, it can be concluded that BI and the government has developed several suitable policies to reduce underground economy. Whether underground economy is

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:25.

beneficial for economic performance, it is important for policymakers to consider reducing underground economy if they want to control the impact of their policy sets.

Policy maker should consider the acts to improve tax potential from underground economy. The tax potential earned can increase government revenue use for other policies. Tax policy should consider several variables such as relaxed and contractive policies to educate taxpayers in paying their tax payable. The simultaneous effect from relaxed and contractive policies can create the most adequate force for taxpayers. Policy maker should also consider grouping of labor force it is related to underground economy and its solvency.

All in all, setting policies by taking underground economy into accounts might help a lot. It is because the misleading information given by only recorded transaction might be mitigated. Having said that, the policies to achieve 2030 SDGs can be settled.

REFERENCES

Ahmed, M., & Ahmed, Q. M. (1995). Estimation of the Black Economy of Pakistan through the Monetary Approach. *The Pakistan Development Review*. 34, pp 791-807.

Argentiero, Amedeo, Bagela, M., Busato, F. (2008). Money laundering in a two-sector model: using theory for measurement. *Europe Journals of Law and Economy.* pp. 341-359.

Arifah, Wisniati. (2009). *Estimating Underground Economy in Indonesia Using Currency Demand Approach.* Universitas Indonesia: Jakarta.

Azwar. (2017). *Underground Economy Analysis in Indonesia and Potential Tax Revenue.* Jurnal Info Artha. 1(1) pp 60-78.

Carilloa, Maria Rosaria and Pugno, Maurizio. (2004). The Underground Economy and Underdevelopment. *Economic Systems* (28). pp. 257-279.

Dharmawan, A. (2015). *The Underground Economy in Indonesia and Its Consequences.* Depok: Universitas Indonesia.

Euro Parliament. (2017). Offshore Activities and Money Laundering: Recent Findings and Challenges. *Policy Department A Economic and Scientific Policy*. PANA Committee.

Feige, E.L. (1979) "How big is the irregular economy?" *Challenge* 22, 5-13.

Feige, Edward L and Urban, Ivica. (2008). Measuring Underground (unobserved, non-observed, unrecorded) Economies in Transition Countries: Can we trust GDP?. *Journal of Comparative Economics*. pp. 287-306.

Fernandez, Marcos Gonzales and Velasco, Carmen Gonzales. (2015). Analysis of Shadow Economy in Spanish Region. *Journal of Policy Modeling.* pp. 1049-1063.

Gutmann, P.M. (1977). *The subterranean economy. Financial Analysts Journal* 34, 26-27.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:25.

Kemal, M. Ali. (2007). *A Fresh Assessment of the Underground Economy and Tax Evasion in Pakistan: Causes, Consequences, and Linkages with the Formal Economy.* Pakistan.

McDowell, John and Novis, Gary. *The Consequences of Money Laundering and Financial Crime.* http://www.usteas.gov.

Nchor, Dennis and Konderla, Tomas. (2016). *The Underground Economy of Czech Republic and Tax Evasion: The Currency Demand Approach.* Procedia.

Ngwenya, L. (2016). High Level Conference on Illicit Financial Flows: Interagency Cooperation and Good Tax Governance in Africa. *The Spillovers of Illicit Financial Flows (pp. 1-21).* Pretoria: UNODC.

OECD (2014). Better Policies for Development 2014. *Policy Coherence and Illicit Financial Flows*. OECD Publishing.

Panjaitan, Friska. P. (2007). Estimation of The Size of Indonesia's Shadow Economy. *Economics and Finance in Indonesia,* 55, pp. 149-176.

Purnomo. (2010). *Underground Economy Estimation with Monetary Approach*. Universitas Indonesia: Salemba

PPATK. (2015). *Indonesia Money Laundering Risk Assessment* 2015. Jakarta: Tim NRA.

Quirk, P. J. (1997, March). Money Laundering: Muddying the Macroeconomy. *Finance & Development,* 34(1), 7-9.

Rao, S. (2013). *Relationship between illicit economic activity and illicit financial flows.* Brimingham: GSDRC Applied Knowledge Service.

Rasbin. (2013). *Expected Potential Underground Economy in Indonesia*. Jurnal Kajian, 18(3), 229-239.

Renzo Orsi & Davide Raggi & Francesco Turino. (2014). Size, Trend, and Policy Implications of the Underground Economy. *Review of Economic Dynamics,* Elsevier for the Society for Economic Dynamics. vol. 17(3), pages 417-436.

Samuda,S.A. (2016). Underground Economy in Indonesia. *Buletin Ekonomi Moneter dan Perbankan* 19(1), pp 39-56.

Schneider, F. and Enste, D.H. (2000). Shadow Economies: Size, Causes and Consequences. *Journal of Economic Literature.* 38, pp 77-114.

Schneider, F. and Enste, D.H. (2002). Hiding in the Shadows: The Growth of the Underground Economy. *Economic Issues*, No.30. IMF.

Schneider, F. (2005). *Shadow Economies Around the World: What do We Really Know?.* Institute for Applied Economic Research (IAW).

Tahmasebi, Mostafa and Rocca Michel. (2014). A Fuzzy Model to Estimate the Size of Underground Economy Applying Structural Equation Model. *Journal of Applied Economics*. pp. 347-368.

Tanzi, Vito. (1983). The Underground Economy in the United States: Annual Estimates, 1930-80. IMF Staff Papers. *Palgrave Macmillan,* vol. 30(2), pages 283-305.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:25.

Tatariyanto, F. (2014). Taxing the Underground Economy: The Case of Indonesia. *Journal of Economics and Sustainable Development*, 5(27), 236-250.

Unger, Brigitte. (2006). *The Amounts and The Effect of Money Laundering.* Report for The Ministry of Finance. Utrecht School of Economics.

Walker, John and Brigitte Unger. (2009). Measuring The Global Money Laundering: Walker Gravity Model. *Review of Law and Economics.* pp. 821-852.

Wibowo, Sasmito H and Sharma, Subhash C. (2005). Estimating The Size of Underground Economy in Indonesia. *Indian Journal of Economics*, 340, pp. 1-12.

William, G. C. (1999). *Dirty Money: The Evolution of Money Laundering Counter measures.* Europe Union: Council of Europe Publishing.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:25.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 2

DYNAMICS OF FINANCIAL DEVELOPMENT AND POLICY: IMPACT ON INDONESIA'S REAL SECTOR

Telisa Aulia Falianty [*]
Department of Economics, Universitas Indonesia, Depok, Indonesia

ABSTRACT

Indonesia has been experiencing dynamics in its financial development. Two financial crises have created powerful incentives for financial system development. The first phase of reformation after the Asian financial crisis of 1997–1998 has resulted in more prudential banking activities, diversification of financial and monetary policy instruments, and early warning systems and a financial safety net. Indonesia also actively collaborates on regional financial safety nets. The second phase of the reformation after the global financial crisis of 2007–2009 has created a framework for a macroprudential policy and the inclusion of an explicit Central Bank objective for a financially stable system and a more comprehensive package of crisis management protocols and active engagement in regional and international coordination. This research maps Indonesia's financial development from 1987 (before the Asian crisis) to 2016 (including two crisis periods). The regression results indicate that the financial development indicator represented by private credit to Gross Domestic Product (GDP) contributes significantly to economic output. Several monetary and financial policies adopted by Indonesian authorities have helped produce monetary and financial stability. Inflation volatility has been declining in the Inflation Targeting Framework (ITF) regime, exchange rate volatility has been declining in a floating exchange rate regime and a capital flows management period, and the volatility of portfolio flows has been declining. This paper also highlights an early assessment of the co-movement of financial innovation (in terms of electronic money) and real economic activity.

[*] Corresponding Author's E-mail: telisa.aulia@ui.ac.id.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:32.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 2

DYNAMICS OF FINANCIAL DEVELOPMENT AND POLICY: IMPACT ON INDONESIA'S REAL SECTOR

Telisa Aulia Falianty [*]
Department of Economics, Universitas Indonesia, Depok, Indonesia

ABSTRACT

Indonesia has been experiencing dynamics in its financial development. Two financial crises have created powerful incentives for financial system development. The first phase of reformation after the Asian financial crisis of 1997–1998 has resulted in more prudential banking activities, diversification of financial and monetary policy instruments, and early warning systems and a financial safety net. Indonesia also actively collaborates on regional financial safety nets. The second phase of the reformation after the global financial crisis of 2007–2009 has created a framework for a macroprudential policy and the inclusion of an explicit Central Bank objective for a financially stable system and a more comprehensive package of crisis management protocols and active engagement in regional and international coordination. This research maps Indonesia's financial development from 1987 (before the Asian crisis) to 2016 (including two crisis periods). The regression results indicate that the financial development indicator represented by private credit to Gross Domestic Product (GDP) contributes significantly to economic output. Several monetary and financial policies adopted by Indonesian authorities have helped produce monetary and financial stability. Inflation volatility has been declining in the Inflation Targeting Framework (ITF) regime, exchange rate volatility has been declining in a floating exchange rate regime and a capital flows management period, and the volatility of portfolio flows has been declining. This paper also highlights an early assessment of the co-movement of financial innovation (in terms of electronic money) and real economic activity.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

[*] Corresponding Author's E-mail: telisa.aulia@ui.ac.id.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:39.

Keywords: financial system, financial development, monetary policy

INTRODUCTION

In the past twenty years, Indonesia has experienced two significant economic crises, namely, the Asian financial crisis from 1997 to 1998 and the global financial crisis from 2007 to 2009. The Asian financial crisis was triggered by a sudden capital outflow from Indonesia. The contagion of the depreciation of the Thai baht and the weak structure of the financial and real sectors led to the depreciation of the rupiah (Indonesian national currency), which was followed by a banking crisis. This dual currency and banking crisis situation occurred in parallel with a multidimensional crisis related to political and social factors. Radelet and Sachs (1998) explain that the financial system of an East Asian country is filled with insider transactions, corruption, and weak corporate governance. This makes East Asian countries easily affected by the chaotic financial system. This will then lead to inefficient investment spending conditions and problems in the stability of the banking system. The banking sector, with its relatively weak prudential regulations, created a fragile Indonesian banking system.

Berg and Pattillo (1999) group the causes of the crisis in two big groups. The first group is a crisis that attacks fundamental variables (inflation, economic growth, and balance of payments), while the second group is a shock that causes the crisis to occur more quickly, which is caused by speculation. An IMF study in 1998 noted that the factors that cause a crisis include current account deficits, large and excessive foreign debt, the development of freedom in the financial sector without regulations that reflect the financial sector's fragility, a monetary policy that operates a system of fixed exchange rates, and high interest rates. Indonesia has several factors of these determinants.

The quite significant development of a financial system has raised the concerns of policymakers with respect to control over the financial system, given that it should always be remembered that finance is not about directly buying and selling actual goods and services, but about buying and selling promises. The system’s foundation is actually based on trust and, thus, is extremely vulnerable to moral hazard, adverse selection, asymmetric information, and principal–agent problems as the sources of the imbalance. The financial system is part of the economic system that provides financial services through certain instruments offered by related institutions in the field of finance. The creation of a stable financial system helps an economy operate in a way that enables it to continue to grow sustainably. The importance of maintaining stability in the financial system is well recognized by every country, including Indonesia.

The level of Indonesia’s financial development remains low relative to its ASEAN peers. Financial development (deepening) is important as a shock absorber (Warjiyo & Juhro 2017). Demirguc-Kunt and Levine (2009) conclude that there are two ways the

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:39.

financial system influences economic growth, namely, capital accumulation and technological innovation. Research on Indonesia's financial development after the global financial crisis is relatively limited.

This research has the objective of mapping the dynamics of Indonesia's financial development from 1987 (before the Asian crisis) to 2016 (including two crisis periods). Financial development dynamics are regressed on national income to see how financial developments can affect economic welfare, as measured by real GDP or inflation (as alternatives). The research on connecting financial development and inflation is also relatively limited. Two policy dummies (the *Inflation Targeting Framework (ITF)* dummy and the exchange rate dummy) are regressed with financial development to measure the impact of a financial development policy on economic welfare. One dummy for the impact of a crisis is also included in the regression model.

LITERATURE REVIEW

Literature Studies Related to Financial Development and Growth

The financial sector is defined as a set of institutions, instruments, markets, and the legal and regulatory framework that allows transactions through credit facilities. The development of the financial sector is considered important for the economy. As was previously described, the role of financial development is very important in opening up economic opportunities and reducing inequalities to increase the welfare of a society. Financial markets and institutions emerged in response to the cost to obtain information and to make transactions. The main function of a financial system in an economy is to facilitate the allocation of resources between both time and space.

Levine (1998) categorized five basic functions of a financial system, namely:

- facilitate trading, hedging, diversifying, and pooling of risk;
- distribute resources;
- monitor the executor and control of the company;
- mobilize savings; and,
- enable the exchange of goods and services.

Demirguc-Kunt and Levine (2009) explained that there are two ways in which the financial system influences economic growth, namely capital accumulation and technological innovation. In the channel of capital accumulation, the financial system affects steady-state growth by affecting the capital formation rate. The financial system affects capital accumulation through changes in savings rates and the reallocation of

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:39.

savings. On the path of technological innovation, the financial system affects steady-state growth by changing the rate of technological innovation.

A well-functioning financial system has an important role to play in pushing long-term economic growth: an economy with a growing financial system should raise faster over a long period, and this effect is causal (Demirgüç-Kunt & Levine 2008). During a long-term growth period, financial development can reduce the gap between the rich and the poor (Demirgüç-Kunt & Levine 2009). In addition, research using data on 67 countries found that financial development is strongly linked to economic growth, although it varies across countries (Valickova, Havranek, & Horvath 2013).

Literature Studies Related to Financial Development and Inflation

Comparing distinctive prices, interest rate stretches, or stock-flow ratios that compare debt aggregates with GDP become the basis in comparison of the level of financial development of countries. Zaman and Mehboob (2010) chose three proxies namely the broad money supply (M2), private sector credit, and bank deposits liabilities as a percentage of GDP to see the impact of financial developments on inflation. The study was conducted in Pakistan using Autoregressive Distributed Lag (ARDL) bounds testing, cointegration, and causality testing. This study successfully concluded that there are directional causality between inflation and financial indicators in Pakistan both for the long term and short term.

Overall growth, development of the financial sector, and vulnerable segments of the poor population are a number of factors that are significantly affected by inflation. Cecchetti (2000) in his research concluded that real growth would be damaged and uncertainty arises due to inflation. Blejer, Ize, Leone, & Werlang (2000) and King (1999) who are aware of the negative effects of inflation, remind the importance of price stability in monetary policy. Thus, the central bank adopts inflation as the main focus of monetary policy. Allsopp and Vines (2000) examine the concept that the price level resolves through the money supply and the operation of the real balance effect.

Kim et al. (2010) states that high inflation rates will have an impact on financial intermediation by eroding the use of money assets and their effects on policies that can actually damage the entire financial system. In the agreement, Choi, Smith, & Boyd (1996) concluded that high inflation would damage transactions in the financial market by disrupting the availability and allocation of investment capital. Boyd, Levine, & Smith (2001) in their research stated that like a developing theory, high inflation will influence financial development. In contrast to other studies, English (1999) found a positive impact of inflation on financial development, namely by changing household patterns in using financial services.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:39.

Akosah (2013) viewed the relationship between financial development indicators and inflation in Ghana using annual time series from 1964 to 2012. The results indicate a different relationship between financial development and inflation in Ghana than the results of the study by Zaman and Mehboob (2010) for Pakistan. The direction of causality between inflation and financial development differs between the short and long runs. This difference was motivated by the generally acclaimed negative impact of inflation on financial development and a possible reverse negative effect, as suggested by Dordunoo & Donkor (1998). These results can be explained in three parts. First, evidence exists of stable short- and long-run equilibrium relationships between inflation and financial development in Ghana. In the long run, a negative and unidirectional causality was established from inflation to private credit. However, in the short run, a negative bidirectional causality was found between inflation and private credit, but the inflationary effects on all financial indicators were rather spontaneous. Second, the results were mixed in terms of the direction of the impact of inflation on M2/GDP in the short run, and the reverse effect was negative and stable. Although a positive short-term impact of inflation on M2/GDP was noticed in the VECM framework, the results from both the impulse response and the bivariate ECM indicated a negative inflationary effect on M2/GDP. Third, the interaction between inflation and private credit/GDP was found to be much stronger than that of inflation and M2/GDP.

Shirakawa (2014) examined the role of central banks in financial development and made the following points.

1. In achieving price stability, the central bank must know its responsibilities because they have an important role. Because the actions of the central bank will also influence the rate of inflation.
2. Problems related to price stability are not a short-term concept, but a medium and long-term concept. In addition, sustainability is something that must be maintained. For example, the occurrence of sharp deflation, is an unsustainable phenomenon, technically the central bank knows what actions they can take, although in some cases this becomes difficult due to political influence.
3. Cooperation between various policy makers is needed to achieve sustainable price stability. Seeing the fact that sometimes the central bank as a supreme institution is misleading and sometimes perilous. Other institutions as decision makers, such as fiscal authority, local government, financial supervisory authority and other policy makers also have an important role.
4. Different country and time conditions cause differences in inflation dynamics. Due to the fact that each country has different unique factors, such as labor conditions, wage rigidity, demographic conditions, trade conditions and so on.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:39.

The condition of the global economy will affect decisions taken by the central bank. This will have an impact on domestic economy and prices. On the other hand, the central bank must stick to the laws in force in each country.

Issues related to price equilibrium and related policies must be arranged properly. Consideration regarding the existing problems and what policies will be taken must be communicated to take appropriate monetary policy in order to develop a policy framework. The policy regarding inflation targeting is considered effective enough to reduce inflation or keep inflation at a low level. As well as having an influence on people's perceptions to focus on inflation as the main problem.

To strengthen the dampening effect of financial development on inflation requires a comprehensive policy direction toward improving financial access to the large unbanked informal sector, effectively promoting a cashless economy. This situation would make floating funds available to financial institutions to facilitate long-term capital investments, reduce pressure on the currency, and enhance the transmission of the monetary policy. The current IT framework should be given the utmost priority to ensure low and stable inflation. However, good and all-embracing financial sector reforms with the objective of targeting the unbanked informal sector and strengthening the financial institutions are highly recommended to effectively enhance the monetary policy transmission mechanism by minimizing monetary policy lags (Akosah 2013).

Tambunan (2010) pointed out that many countries, especially in East and Southeast Asia such as Indonesia, Thailand, Singapore, Malaysia, Philippines, and South Korea were adversely affected by the crisis. The Indonesian economy during the Asian financial crisis had plunged into a deep recession in 1998, with overall growth at minus 13.7 percent.

The financial crisis is now attacking the global financial system. The increasingly integrated world asset markets with rapid capital flows and the opening of the economy in this era of globalization shows that global financial conditions increase the relevance of the relationship between monetary policy authorities and emerging Asian economies (EMEs countries), especially Asian regions. Central banks, especially those in developing countries, must raise awareness regarding factors related to measurement and matters that affect the volatility of capital flows to their countries. According to Filardo, Genberg, and Hofmann (2016), the global financial cycle will have an impact on the financial conditions of EME countries. This influence can be in the form of quantity and price. In quantity it can be interpreted as a capital flow. Rising global risks will affect capital flows in and out.

Agung, Juhro, Harmanta, and Tarsidin (2016) show valuable lessons after the Global Financial Crisis (GFC) that are valuable for the implementation of monetary policy in Indonesia. First, the GFC shows that maintaining inflation alone is not enough to maintain macroeconomics amid the interests of Bank Indonesia to maintain price stability. Lessons from the last few years show that macroeconomic volatility caused a

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:39.

financial crisis. With this lesson it can be concluded that in maintaining macroeconomic stability is to maintain an imbalance of goods (inflation) and externalities (balance of payments), and also imbalances in the financial sector, such as asset price bubbles and excessive credit growth.

Second, the central bank must use several instruments given the many challenges faced. When the exchange rate has to remain flexible when capital flows fluctuate, the central bank must keep so as not to be misaligned from its fundamental value. Capital flow management must be maintained to deal with this problem. In addition, various policies that can be taken can be applied in dealing with problems arising from fluctuations in capital flows and the amount of short-term capital. An example is the application of a standard-based quantity interest rate policy. On the other hand, the monetary authority can adopt appropriate macroprudential policies to overcome the risk of asset bubbles and also maintain conditions of financial system stability.

Third, in a small economy that is open to policies related to exchange rates is one of the important frameworks in determining the *Inflation Targeting Framework* (ITF). Bank Indonesia will not manage the exchange rate if ITF policy is implemented. In this research, it is explained that the floating exchange rate system must be able to be used as an absorbent in dealing with shocks in the economy. However, as a small open economy country with open capital flows, perceptions related to investor risk that affect capital flows, will also have an impact on the exchange rate. Management of the exchange rate to avoid volatility can lead to conditions where the exchange rate exceeds a level that is conducive to achieving the inflation target. Therefore, the application of ITF which is not too rigid (known as flexible ITF) can be used as a reference. Integrative policies between monetary and macroprudential policies are needed in the application of flexible ITFs. Exchange rate policies and capital flow management must also be supportive. Various challenges in managing economic stability, both related to the monetary and financial system will be faced. There must be an appropriate policy mix to face the challenges.

Literature Study on Financial Development in Terms of Electronic Money

The development of information technology and the emergence of a number of new innovations are occurring in the area of retail payments known as electronic money. According to Ely (1996), electronic money is the money balance recorded electronically on a “stored-value” card. Al-Laham and Al-Tarawneh (2009) argued that electronic money as a network good might become an important form of currency in the future. The future development of electronic money would affect the effectiveness and implementation of monetary policy. They found that the increased use of electronic money will bound the central bank’s ability to control the money supply, lower

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:39.

"seignoirage" income, decrease bank reserves, increase velocity of money, decrease international monetary control, and also change the money multiplier.

In contrast, Andersen (2013) discussed how, in an electronic money environment, an overheated economy can easily be curbed primarily by controlling money velocity and not the money supply. The existence of an electronic monetary system has a significant and advanced impact on macroeconomic system control. That is by providing new services and tools to the government.

DATA AND METHODOLOGY

We used yearly Indonesian financial, monetary, and macroeconomy variable data from 1987 to 2016. The data source is the World Development Indicator, Central Bank of Indonesia Financial Statistics. We used descriptive statistics, the regression method, and a policy review. For the descriptive statistics and the regression method, we used the data source from the World Development Indicator and Central Bank of Indonesia Financial Statistics. In contrast, for the policy review, we used several sources from the academic literature, the Central Bank, and IMF sources (website, official documents, textbooks, research publications, and assessment reports).

To assess the contribution of financial development to real sector activity, we used the regression model with annual 1987–2016 data as follows. Real sector activity is represented by two indicators: real GDP and inflation.

$$\text{Ln GDPR} = \beta o + \beta_1 \text{ FD} + \beta_2 \text{ interest rate} + \beta_3 \text{ dummy}, \quad (1)$$

where GDPR = real GDP, FD = financial development, and interest rate = deposit interest rate.

We used three types of dummy variables, including a crisis dummy (Asian crisis 1997–1998) and a policy dummy. For the policy dummy, we used two alternatives, namely, an exchange rate dummy and an *Inflation Targeting Framework (ITF)* dummy. Refer to Table 1, which summarizes financial development and policies in Indonesia, for reasons for using the dummy variables.

$$\text{Inflation} = \alpha o + \alpha_1 \text{ FD} + \alpha_2 \text{ interest rate} + \alpha_3 \text{ exchange rate} + \alpha_4 \text{ dummy}, \quad (2)$$

where inflatio n = CPI inflation, FD = financial development, interest rate = lending interest rate, and exchange rate = nominal exchange rate in rupiah per dollar.

We used two alternatives for the policy dummy, including an exchange rate regime dummy and an ITF dummy. The Asian crisis (1997–1998) is also included to measure the

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:39.

impact of the crisis. In contrast, the proxy for financial development is represented by M2/GDP and private credit/GDP.

The quantity theory of money is employed to assess the relationship between electronic money and real economic activity. Fisher (1911)presented the following equation:

$$MV=PT \tag{3}$$

where M = quantity of money, V = velocity of money, P = price level, and T = transaction volume.

Because V cannot be measured accurately, the standard is to assume that it is constant. However, electronic money innovation could change this assumption. Andersen (2013) stressed the importance of electronic money to change the velocity of money. Because of data availability, the analysis for electronic money started from 2007 and we will use monthly data.

To prove the robustness of the result, we ran several models and several robustness tests. The robustness test includes adding a labor variable to the GDPR model, using quarterly data, and using provincial level data. For provincial level data, we used a panel data regression with a fixed effect model.

RESULT AND ANALYSIS

Based on a content analysis and a desk study, in Table 1, the researcher summarizes the dynamics of Indonesian financial development and policy. We analyze the component of financial development in Indonesia through several points, including monetary policy goals, monetary policy instrument targets, exchange rate regimes, institutions that engage in the monetary and financial sectors, central bank independence, crisis anticipation schemes, policy-related capital flows, and international and regional cooperation in financial sector engagement.

Stylized Facts about Indonesian Financial Development

The broad monetary aggregate to the nominal GDP ratio is widely used as a broad indicator for the deepening of the financial sector in a country, and a higher number of the ratio is interpreted as greater monetization of real economic activity. A well-developed financial sector generally offers instruments that have characteristics given the underlying nature of risk, return, and efficiency in payments system, thus increasing the ratio of broad money (M2) to GDP. In 2016, Indonesia's ratio of broad money to GDP

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:39.

was only 40.3% (Figure 1). The Indonesian M2/GDP was lower than that of its peers in Southeast Asia, with Malaysia having a ratio of 130.5% of GDP, Thailand at 127.3% of GDP, and Vietnam at 77.4% of GDP. Indonesia was also far lower than the averages for Southeast Asia's countries, which was 72.4% of GDP, and for the world, at 125.8% of GDP. The ratio of M2/GDP faced prolonged negative growth after the Asian financial crisis, which significantly affected Indonesia's banking system and the Indonesian economy.

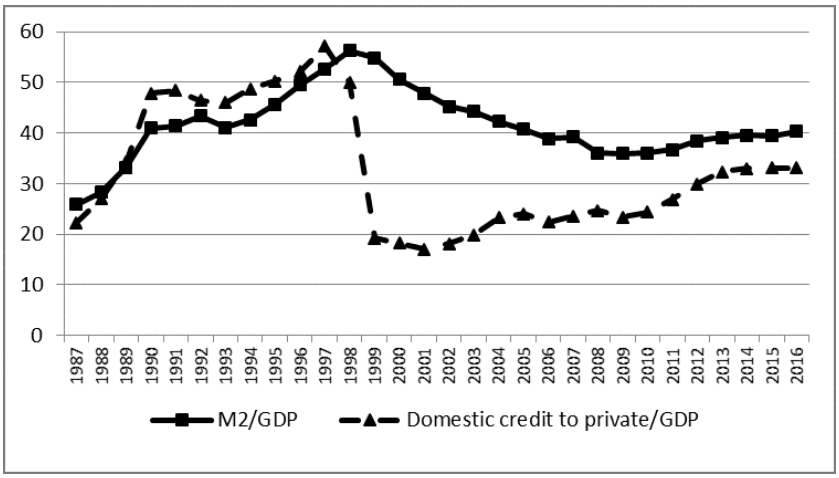
Table 1. Dynamics of financial development and policy in Indonesia

Analysis Component	**1990–1997**	**1997–2004**	**2005–2009**	**2009–current**
Goals of monetary policy	multiple objective	first stage of ITF	IT lite	enhanced ITF and financial system stability
Monetary policy instrument target	money targeting	money targeting	interest rate targeting (BI rate)	interest rate targeting (2016 using BI reverse repo)
				combined with macroprudential instruments
Exchange rate regime	managed floating	free-floating	free-floating	free-floating
Institutions that engage in monetary and financial sector	Central Bank of Indonesia, Bapepam-LK	Central Bank of Indonesia, Bapepam-LK transition to OJK	Central Bank of Indonesia, FSA OJK, LPS	Central Bank of Indonesia, FSA OJK, LPS
Central bank independence	Central Bank under government	since 1999, full central bank independence	central bank independence except for goal independence	central bank independence except for goal independence
Crisis anticipation scheme	Central Bank role as LOLR	LOLR function limited and blanket guarantee (full coverage)	partial guarantee and framework of financial system safety net	CMP, Law of Safety Net on Financial System, FKSSK
Policy related to capital flows	relatively free capital mobility	free official reserves flow	temporary soft capital control	temporary soft capital control combined with macroprudential instrument for managing domestic liquidity (OHP, NOP)
International and regional cooperation in financial sector engagement	IMF, World Bank, Basel I (1992)	IMF, World Bank, CMI since 2000, Basel II	IMF, World Bank, CMI since 2000, Basel II	IMF, World Bank, CMI since 2000, AMRO 2010, CMIM 2012, G20 since 2009, Basel III 2009

Source: The author's compilation and exploration from several sources.

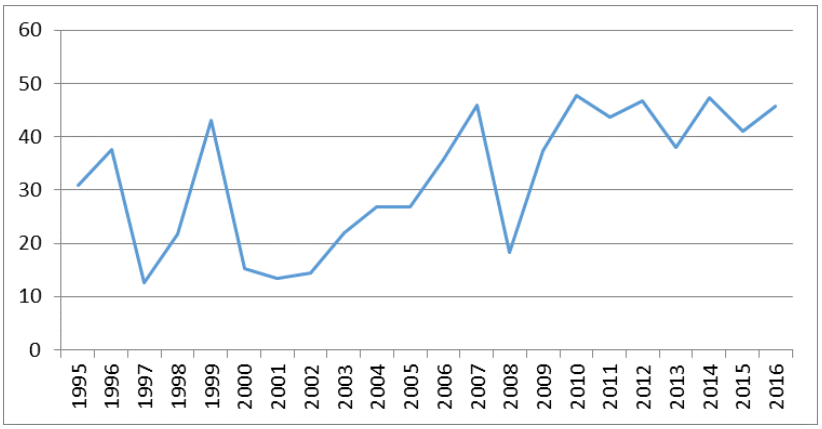
Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:39.



Source: World Development Indicator.

Figure 1. M2/GDP and domestic credit to private/GDP.



Source: World Development Indicator.

Figure 2. Market capitalization to GDP.

Development and an increasing role of the private sector in the national economy (in terms of GDP) are indicators of economic development and prosperity. A higher private credit ratio to GDP indicates greater opportunities for the private sector to develop and grow, thus improving the economic development of the country. In 2016, private domestic credit accounted for only 47.9% of GDP.

Although not the lowest in the region, Indonesia's market capitalization at only 45.7% of 2016 GDP (Figure 2) was far lower than the average for Southeast Asian countries, which reached 67.6% of 2016 GDP, and the world's average of 98.6% of 2016 GDP. Malaysia has the highest market capitalization in the region, at 121.3% of GDP, followed by Thailand at 106.4% of GDP.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:39.

Table 2. Coefficient variation of three monetary indicators in different policy regimes

Indicators			
Exchange rate volatility	Managed floating regime	Free-floating regime	
	0.175	0.153	
Inflation volatility	Before ITF	After ITF	
	1.049	0.415	
Capital flows volatility	Before AFC	After AFC-Before GFC	After GFC
	9.010	0.745	2.631

According to Table 2, Indonesian exchange rate volatility could decrease during a period of a free-floating regime. Refer to the argument in Agung, Juhro, Harmanta, and Tarsidin (2016) that stated that a flexible *Inflation Targeting Framework (ITF)* implemented in Indonesia requires a monetary and macroprudential policy to be integrated, including capital flow management and an exchange rate policy. The result of this implementation is supported by the evidence. Capital flow volatility has been declining during the period of after the second crisis (namely, the global financial crisis) relative to before the Asian crisis period.

Impact of Financial Development on Real Sector Economic Activity

The contribution of financial development and policy to Indonesian real sector economic activity could be assessed using the following regression.

Financial development 1 (FD1), which is represented by M2/GDP, does not significantly affect real GDP. Otherwise, domestic private credit to GDP (FD2) significantly affects real GDP in all models (Model 2–Model 4). Model 2 results in the largest coefficient for the impact of financial development on national income. The crisis dummy is only significant in Model 1. The ITF dummy and the exchange rate dummy are not significant for national income.

Robustness Check Using Labor Variable, Quarterly Data, and Provincial Level Data

For the robustness check, we add the labor variable as an explanatory variable of the GDPR. The basic Solow model has a supply-side framework through which real GDP is determined by capital and labor. The result shows that financial development still significantly affects GDPR. In Table 3, the coefficient of the impact is larger than the result. We also run a robustness check using quarterly data (1998Q1–2017Q3). The

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:39.

regression shows that financial development is robust as a significant determinant of GDPR growth. Using provincial data, the result still holds that financial development affects regional real GDP. (The result of the robustness check is included in the Appendix).

Table 3. Regression result with dependent variables log (GDPR), 1987–2016

Variables	**Model 1**		**Model 2**		**Model 3**		**Model 4**	
	Coef	t stat	Coef	t stat	Coef	t stat	Coef	t stat
C	54.886	0.388	53.529	0.585	48.527	1.012	50.218	0.843
FD1	0.002	0.828	-	-	-	-	-	-
FD2	-	-	0.004	3.600***	0.003	4.433***	0.003	4.409***
Interest rate	-0.005	-3.722***	-0.004	-4.435***	-0.004	-4.816***	-0.004	-4.735***
Crisis_dummy	0.052	2.041*	-0.013	-0.464	-	-	-	-
Exc_rate_dummy	-	-	-	-	-	-	-0.006	-0.209
ITF_dummy	-	-	-	-	0.015	0.559	-	-
AR(1)	0.998	54.550***	0.997	73.212***	0.996	71.947***	0.997	73.302***
Adj R2	0.992		0.995		0.995		0.995	
DW	1.007		2.003		1.973		2.018	

Note: *******significant at 1%, **significant at 5%, *significant at 10%.

Impact of Financial Development On Inflation

The impact of financial development on inflation is summarized in Table 4.

Table 4. Regression result with inflation as dependent variable, 1987–2016

Variables	**Model 1**		**Model 2**		**Model 3**		**Model 4**	
	Coef	t stat	Coef	t stat	Coef	t stat	Coef	t stat
C	-28.260	-1.147	-31.882	-1.248	-74.106	-1.325	-83.493	-4.209***
FD1	-	-	0.325	0.661	-	-	-	-
FD2	-	-	-	-	0.258	0.914	-	-
M2_growth	-	-	-	-	-	-	0.574	4.392***
Interest rate	-0.048	-0.091	-0.089	-0.166	0.126	0.225	0.398	1.120
Log (Exchange rate)	4.654	1.690*)	3.454	1.038	8.650	1.673*)	8.823	4.109***
Crisis_dummy	21.478	3.375***	18.528	2.363**	15.888	1.797*	6.556	1.158
ITF_dummy	-7.236	-1.150	-4.418	-0.576	-7.776	-1.226	-4.561	-1.073
Adj R2	0.380		0.364		0.375		0.673	
DW	2.426		2.442		2.225		2.234	

Note: *******significant at 1%; **significant at 5%; *significant at 10%; *) marginally significant.

We also modeled the inflation relationship with the financial development variable, a policy variable such as the ITF dummy, a crisis dummy, and monetary variables including the interest rate, exchange rate, and money supply growth. We focus on a

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:39.

demand-side model of inflation. The highest degree of explanation is found in Model 4, for which the significant variables are M2 growth and exchange rate. The crisis dummy is always significant except in Model 4. All of the coefficients of the crisis dummy are positive. Clearly, the Asian crisis has caused a slight increase in Indonesia's inflation. The ITF dummy always has a negative sign, as expected, but none are significant. The insignificance of the ITF dummy could be interpreted as the ITF not having a significant influence on inflation but may affect the volatility of inflation—a possibility exhibited in Table 2. Inflation volatility after the ITF has been declining. The financial development indicator did not have a direct effect on inflation, and M2 growth has a more direct effect to inflation.

Current Technology Advance in the Financial Sector (Electronic Money and Non-Cash Payments)

The payment system has an important role in facilitating economic activity. Payment instruments can be distinguished as cash and non-cash instruments. These developments bring changes in innovation as well as changes in people's lifestyles, especially in the field of economics. Electronic money in Indonesia has emerged as a payment instrument that is widely used by the community. The use of electronic money continued to grow rapidly from 2008 to 2016.

Financial innovation and technology in the payment system in Indonesia comprise two categories. The first category is large-value payment systems, including real-time gross settlement and clearing. The second category is retail payment systems, including instruments such as ATM/debit cards, direct debit, credit card, and infrastructure such as ATM machines, EDC, Internet and mobile banking, and branchless banking.

Trends in the utilization of payment systems have been increasing in the last seven years and can be observed in the increasing number and value of payment system instruments and infrastructure. In the payment system infrastructure, increases in ATM machines, EDC machines, and e-money readers were 69%, 83%, and 183%, respectively, from 2009 to 2016. Moreover, payment system instruments such as debit cards, credit cards, and electronic money increased in transaction value by 273%, 171%, and 3,361%, respectively, from 2009 to 2016. As a result, given the development of financial innovation, currency growth (currency as an M1 component) in Indonesia has been decreasing consistently, as indicated in Figure 3.

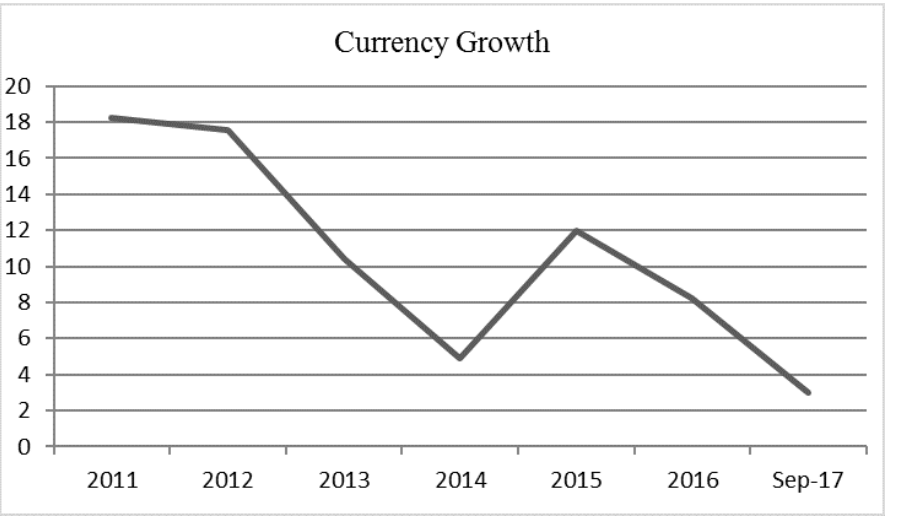
As currency growth has decreased, electronic money has also consistently increased (Figure 4).

In Indonesia, the use of electronic money by value has increased progressively since 2015. In the same year, the value of e-money transactions almost tripled (from 246,223 billion rupiah to 663,653 billion rupiah). However, in terms of share during the

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

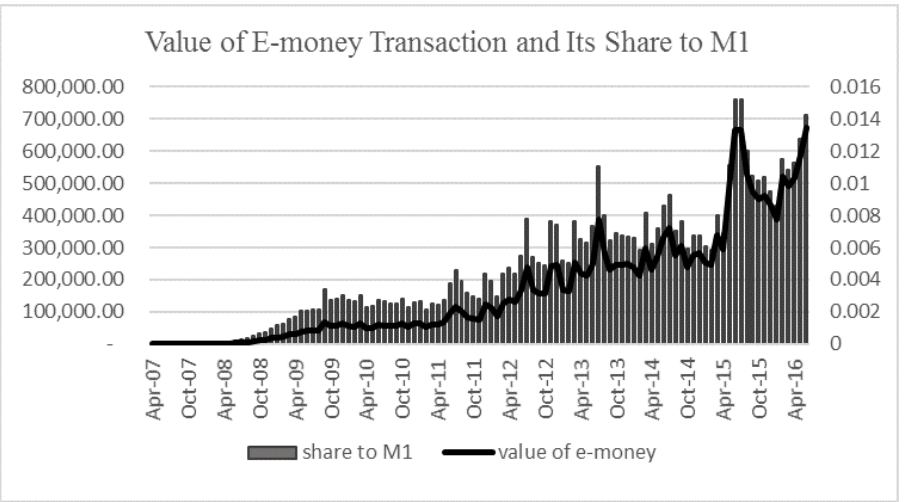
Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:39.

observation period, the highest share of electronic money in M1 was only 0.015%. This low share is also related to the in-process licensing and certification for e-money providers and the maximum balance limit for each electronic money card. The electronification of public transportation will help to further increase the use of electronic money in Indonesia.



Source: Central Bank of Indonesia statistics, processed.

Figure 3. Currency growth.



Source: Central Bank of Indonesia.

Note: The left-hand side of the y-axis represents the value of e-money (billion rupiah) and the right-hand side of the y-axis represents the share of M1 (percent).

Figure 4. Value of electronic money transactions (billions of rupiah) and share in M1 (percent) (2007–2016).

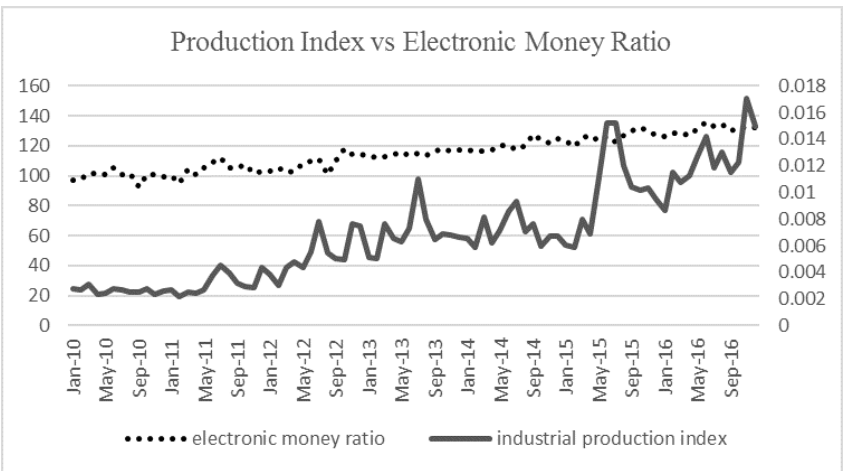
Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:39.

Electronic Money and Real Economic Activity

Figures 5 and 6 plot graphs of the electronic money ratio and the industrial production index as proxies of the real economic activity available in monthly observations and inflation as a proxy of price changes. The classic quantity theory of money inspired the plots in Figures 5 and 6 (note the quantity theory of money for which MV = PT). Andersen (2013) made an important point about money supply and money flows. Demand in an economy is not decided by the aggregate money supply (a stock) but by the aggregate of money flows Y, where Y represents GDP. In a continuous-time modeling framework, the denomination of Y is $/year as opposed to M [$]. According to Andersen (2013), in nominal terms, we have (Y(t) = M(t)v(t), where M is aggregate money stock and v is average money velocity).

Figure 5 indicates that a positive co-movement existed between the ratio of electronic money and the industrial production index. The correlation between the two variables is high (0.871). In contrast, Figure 6 indicates that inflation tends to be negatively correlated with the electronic money ratio, and the coefficient of the correlation is –0.313. In the future, research on the impact of electronic money on real economic activity could be explored further in a formal manner.



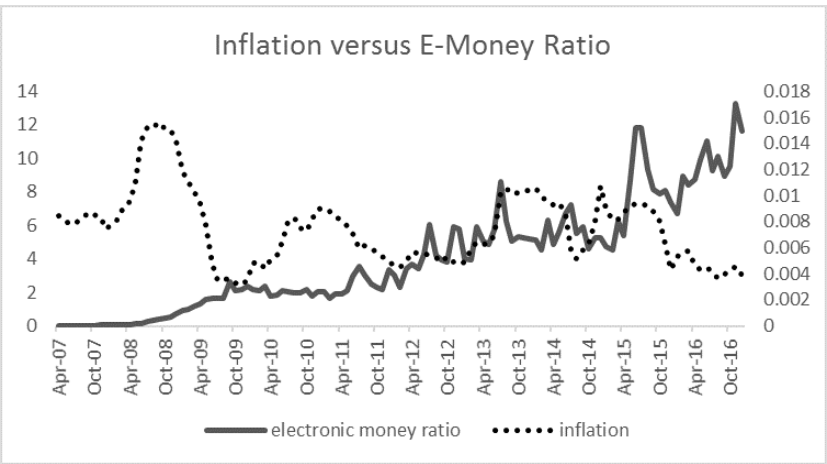
Source: Central Bank of Indonesia Statistics, processed.

Note: The left-hand y-axis represents the industrial production index (index, base 2010 = 100) and the right-hand y-axis represents the electronic money ratio (percent).

Figure 5. Industrial production index versus electronic money ratio.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:39.



Source: Central Bank of Indonesia Statistics, processed.

Note: The left-hand y-axis reflects inflation (percent) and the right-hand y-axis represents the e-money ratio (percent).

Figure 6. Inflation versus e-money ratio.

CONCLUSION

The regression result showed that the financial development indicator as represented by private credit to GDP contributes significantly to economic output. Several monetary and financial policies developed by Indonesian authorities help produce monetary and financial stability. Inflation volatility has been declining in the *Inflation Targeting Framework (ITF)* regime, exchange rate volatility has been declining in the floating exchange rate regime and capital flows management period, and the volatility of the portfolio flows has been declining. The financial development indicator (which is measured by the ratio of domestic private credit to GDP) has been proven to affect Indonesia's economic welfare. The conclusion is robust when we include labor in the model, when we use quarterly data, and when we use provincial data instead of national level data.

In contrast, the Asian crisis has caused a slight increase in Indonesia's inflation. The ITF dummy always has the expected negative sign, but none of its values is significant. The insignificancy of the ITF dummy could be interpreted as the ITF not significantly influencing inflation. However, the ITF may affect inflation volatility. The financial development indicator does not have a direct impact on inflation, but M2 growth has more of a direct impact. The early assessment shows co-movement of the electronic money ratio to M1 (as a proxy for current financial innovation) with real economic activity, namely, inflation and the manufacturing production index. The development of financial innovation in Indonesia is an area for further research, including the impact of financial innovation on Indonesian financial stability.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:39.

ACKNOWLEDGMENTS

We gratefully acknowledge financial support from PITTA Grant UI 2018 and Kartika Estu Linuwih, Oda Sekar Ayu, Riky Ikhwan, and Indria Nurhakim for their helpful input and data collection.

REFERENCES

Agung, J., Juhro, S., Harmanta, & Tarsidin. (2016). Managing Monetary and Financial Stability in a Dynamic Global Environment: Bank Indonesia Policy Perspective. *Bank for International Settlement Paper*, No. 88. Retrieved from https://ssrn.com/abstract=2861312.

Akirnov, A., & Dollery, B. (2009). Financial System Development in Indonesia and in South Korea in 1980 and early 1990s: Policies and Outcomes. *Griffith Business School Discussion Papers Finance*, No. 2009–06.

Akosah, N. K. (2013). Dynamics of Inflation and Financial Development: Empirical Evidence from Ghana. *Journal of Economics and Sustainable Development*, 4(15).

Al-Laham, M., & Al-Tarawneh, H. (2009). Development of Electronic Money and Its Impact on the Central Bank Role and Monetary Policy. *Informing Science & Information Technology 6*.

Allsopp, C., & Vines, D. (2000). The Assessment: Macroeconomic Policy. *Oxford Review of Economic Policy*, 16(4): 1-32.

Andresen, T. (2013). Improved Macroeconomic Control with Electronic Money and Modern Monetary Theory. *Real World Economic Review*. Issue No. 63, 135-142. The Norwegian University of Science and Technology, Norway.

Batununggar, S. (2011). Financial Development and Financial Stability: Indonesia Experience. Presented at *2nd Organization of Islamic Cooperation Expert Group Workshop*, Central Banking and Financial Sector Development, Bank Negara Malaysia, November 13–14.

Berg, A., & Pattillo, C. (1999). Predicting Currency Crises: The Indicators Approach and an Alternative. *Journal of International Money and Finance*, 18(4): 561–586.

Blejer, M. I., Ize, A., Leone, A. M., & Werlang, S. 2000. *Inflation Targeting in Practice.* Washington, DC: IMF.

Boyd, J. H., Levine, R., & Smith, B. D. (2001). The Impact of Inflation on Financial Sector Performance. *Journal of Monetary Economics*, 47: 221-248.

Boyd, J., & Champ, B. (2003). *Inflation and financial market performance: what have we learned in the last ten years.* Federal Reserve Bank of Cleveland.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:39.

Cecchetti, S. (2000). Making Monetary Policy: Objectives and Rules. *Oxford Review of Economic Policy*, 16(4): 43-59.

Choi, S., Smith, B., & Boyd, J. (1996). Inflation, Financial Markets, and Capital Formation. *Federal Reserve Bank of St. Louis Review 78*, 41-58.

Demirgüç-Kunt, A., & Levine, R. (2008). Finance, Financial Sector Policies, and Long Run Growth. *M Spence Growth Commission Background Paper* No 11, World Bank, Washington, DC.

Demirgüç-Kunt, A., & Levine, R. (2009). Finance and Inequality: Theory and Evidence. *Annual Review of Financial Economics, Annual Reviews*, 1(1): 287-318.

Dordunoo, C. K., & Donkor, A. (1998). Ghana: Monetary Targeting and Economic Development. *African Economic Research Consortium (AERC) Research Paper 77*.

Ely, B. (1996). Electronic Money and Monetary Policy: Separating Fact from Fiction. *Cato Institute's 14th Annual Monetary Conference.*

English, W. (1999). Inflation and Financial Sector Size. *Journal of Monetary Economics*.

Filardo, A., Genberg, H., & Hofmann, B. (2016). Monetary analysis and the global financial cycle: An Asian central bank perspective. *Journal of Asian Economics*, 46: 1-16. doi:https://doi.org/10.1016/j.asieco.2016.08.002.

Fisher, I. (1911). *The Purchasing Power of Money.* New York: Macmillan.

Ismail, M. (2015). *Summary of Indonesia's Finance Sector Assessment.* ADB Papers on Indonesia December 2015.

Kim, D., Lin, S., & Suen, Y. (2010). Dynamic Relationship between Inflation and Financial Development. *Macroeconomic Dynamics*, 14(03): 343-364.

King, M. (1999). Challenge of Monetary Policy: New and Old. *Ner Challenge of Monetary Policy*.

Levine, R. (1997). Financial Development and Economic Growth: Views and Agenda. *Journal of Economic Literature*, XXXV: 688–726.

Shirakawa, M. (2014). Is Inflation (or Deflation) "Always and Everywhere" a Monetary Phenomenon? *BIS Paper* No. 77.

Radelet, Steven, & Sachs, Jeffrey. (1998). The Onset of the East Asian Financial Crisis. *NBER Working Paper No. 6680*. doi:10.3386/w6680.

Tambunan, T. (2010). The Indonesian Experience with Two Big Economic Crisis. *Modern Economy*, 1: 156–157.

Valickova, P., Havranek, T., & Horvath, R. (2013). Financial Development and Economic Growth: A Meta-Analysis. *Working Papers 331*.

Warjiyo, P. (2015). Indonesia: Changing Patterns of Financial Intermediation and their Implication for Central Bank Policy. *BIS Working Paper No 88*.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:39.

Warjiyo, P., & Juhro, S. M. (2017). *The Central Bank Policy: Theory and Practice.* Jakarta: Rajagrafindo.

Zaman, K., I., W., & Mehboob, A. (2010). Impact of Financial Development on Inflation: Evidence from Pakistan (1974–2007). *Pakistan Journal of Social Science,* 30(1): 31–44.

APPENDIX

Robustness Check Adding Labor Variable

Table A-1. Robustness check adding labor variable with dependent variables LOG(GDPR), 1987–2016

Variables	Coef	t stat
C	-9.330	-3.309***
FD2	-0.006	5.137***
DEPOSIT	--0.004	-1.646
EXCH_REGIME	-0.134	-2.391**
LOG(LABOR)	2.468	15.935***
Adj R2	0.985	
Prob(F-statistic)	0.000	
DW	1.247	

Note: ***significant at 1%; **significant at 5%; *significant at 10%.

Robustness Check Using Quarterly Data

Table A-2. Robustness check using quarterly data with dependent variables GDP_GROWTH, 1998–2017

Variable	Coef	t stat
C	-1119.197	-4.734***
CREDIT_GDP_NOM(-3)	0.551	3.522***
DEPOSIT_RATE	0.731	5.311***
LOG(LABOR_CUBE)	59.586	4.746***
DUMMY_CRISIS	0.752	0.342
Adj R2	0.289	
Prob(F-Statistic)	0.000	
DW	2.342	

Note: ***significant at 1%; **significant at 5%; *significant at 10%.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:39.

Robustness Check Using Provincial Data

Table A-3. Robustness check using provincial data with dependent variables log (PDRB_MILLION_RP), 2011–2016

Variable	Coef	t stat
C	4.822	0.044**
LOG(PMTB_ BILLION_RP)	0.056	0.005***
LOG(CREDIT_LOK)	0.300	0.000***
LOG(LABOR_FEB)	0.086	0.379
LOG(HDI)	2.080	0.001***
INTEREST_RATE	0.075	0.000***
Adj R2	0.999	
Prob(F-Statistic)	0.000	
DW	1.266	

Note: ***significant at 1%; **significant at 5%; *significant at 10%.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:39.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:39.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 3

PRODUCTIVITY SPILLOVER AMONG REGION IN MANUFACTURING SECTOR: A SPATIAL ANALYSIS WITH EVIDENCE FROM INDONESIA

Irvan Kuswardana*[*]*, Nachrowi Djalal Nachrowi, Andi Fahmi Lubis and Telisa Aulia Falianty
Department of Economics, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This research measures productivity spillover at the regional level in the manufacturing industry in Indonesia during 2010–2014 by using a spatial econometrics model. The data used in this research are composed of a panel set of 24 sectors and 322 districts and regencies derived from an Indonesian spatial map. It is important to understand the mechanism of spillover through agglomeration of manufacturing industries that create productivity. The findings of this research imply that (1) the labor productivity of manufacturing industry in Indonesia is mainly determined by the number of capital used per worker; (2) the productivity of firms in a home region is affected by the productivity of other firms in neighboring regions through technology spillover; (3) the infrastructure spillover among regions has a positive effect on labor productivity; and (4) the high-tech sectors particularly generates higher productivity than low-tech sectors.

Keywords: productivity, spatial spillover, manufacturing industry

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

[*] Corresponding Author's E-mail: navri30@gmail.com.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:47.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 3

PRODUCTIVITY SPILLOVER AMONG REGION IN MANUFACTURING SECTOR: A SPATIAL ANALYSIS WITH EVIDENCE FROM INDONESIA

Irvan Kuswardana*[*]*, Nachrowi Djalal Nachrowi, Andi Fahmi Lubis and Telisa Aulia Falianty
Department of Economics, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This research measures productivity spillover at the regional level in the manufacturing industry in Indonesia during 2010–2014 by using a spatial econometrics model. The data used in this research are composed of a panel set of 24 sectors and 322 districts and regencies derived from an Indonesian spatial map. It is important to understand the mechanism of spillover through agglomeration of manufacturing industries that create productivity. The findings of this research imply that (1) the labor productivity of manufacturing industry in Indonesia is mainly determined by the number of capital used per worker; (2) the productivity of firms in a home region is affected by the productivity of other firms in neighboring regions through technology spillover; (3) the infrastructure spillover among regions has a positive effect on labor productivity; and (4) the high-tech sectors particularly generates higher productivity than low-tech sectors.

Keywords: productivity, spatial spillover, manufacturing industry

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

[*] Corresponding Author's E-mail: navri30@gmail.com.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:54.

INTRODUCTION

The external impact that can be positive or negative on other agents in the market, stimulated by the activities of one agent, causes externalities to emerge. These externalities are not sufficiently reflected in market mechanism (Conlon et al. 2012). The economist Conlon described the idea of taking advantage of the investment of other parties without paying the full price as "spillovers." Information can flow from one firm to another. For instance, a competitor can duplicate an innovation or observe the successes and failures of other research efforts without making comparable investments (Jaffe, 1998).

The nature of knowledge for the public good cannot be separated from the concept of spillovers. Because knowledge is non rivalrous, spillovers show that knowledge can flow among people through exchange of ideas that cannot fully be blocked by a knowledge creator that does not share the knowledge. Nevertheless, the failure of a creator to capture value of new knowledge may reduce incentives to invest in developing new knowledge. At that point, no individual or firm would want to carry out the activity alone, due to the assimilation of benefits of an activity.

Spillovers can emerge in various ways. They can be found in scientific papers, revealed in a patent, or from the sale of a new product (Jaffe, 1998). Firms must have a certain absorptive capacity which is firm's capability to access and take advantage of new sources of information. The capacity to combine internal assets (capital and labor) with knowledge as external factor that results in innovations, which in turn, increase the productivity of firms.

Access of firms to external knowledge is affected by the spatial proximity, which is knowledge spill-over from one firm to another. Although knowledge is categorized as a public good which is not directly transmitted from one firm to another, tacit knowledge however, according to Audretsch and Feldman (1996), can flow directly through interaction among people and geographical proximity. Geographical proximity brings about positive externalities refers to economic of agglomeration. This means that the closer the distance between firms will give more spillover effect in productivity. In the context of innovation, proximity leads to local knowledge spillovers, which are defined as "knowledge externalities bounded in space." This firms having a key knowledge sources are more innovative than firms located elsewhere (Breschi and Lissoni, 2001). The interaction between firms and people may create knowledge and information flows. That interaction may locate within the same of different location which the capacity to absorb of new knowledge may be different among region that depend on the institutional framework (Doring and Schnellenbach, 2006).

Firms in the manufacturing sector have direct linkages to one another, based on characteristic of their products and the use of technology in the sector. Firms in the manufacturing sector can be classified on the basis of their level of technology, as high,

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:54.

medium to high, medium to low or low technology. Table 1 describes the technology classification of manufacturing sectors based on international standards and level of technology.

The use of intermediate products and capital goods causes industries to be linked and interdependent. The actual interdependency among the productive sectors is affected by the extent to which input demand that is met by domestic or imported products. If most of the intermediate products are imported, foreign suppliers may significantly control several domestic industries. This condition, moreover, can lead to the decrease of potential linkages with domestic sectors. Production sharing has an important part in globalization era, specifically in case of the East Asian region. It boosts the labor market flexibility in the manufacturing sectors, such as in automotive manufacturing where the components and accessories of a vehicle are produced in many countries.

Table 1. Technology classification of manufacturing sectors

2-digit sector	Sectors	Technology Intensity
30	Office, accounting and computing machinery	High
32	Radio, television and telecommunication equipment and apparatus	High
33	Medical, precision and optical instruments, watches, and clocks	High
24	Chemicals and chemical products	Medium-low
29	Machinery and equipment nec	Medium-high
31	Electrical machinery and apparatus nec	Medium-high
34	Motor vehicles, trailers and semi-trailers	Medium-high
35	Other transport equipment	Medium-high
23	Coal, refined petroleum products and nuclear fuel	Medium-high
25	Rubber and plastics products	Medium-low
26	Other non-metallic mineral products	Medium-low
27	Basic metals	Medium-low
28	Fabricated metal products, except machinery and equipment	Medium-low
15	Food products and beverages	Low
16	Tobacco	Low
17	Textiles	Low
18	Wearing apparel	Low
19	Tanning and dressing of leather	Low
20	Wood and of products of wood except furniture and plaiting materials	Low
21	Paper and paper products	Low
22	Publishing, printing and reproduction of recorded media	Low
36	Furniture; other manufacturing nec	Low
37	Recycling	Low

Source: OECD (2011)

In Indonesia, intermediate goods dominate manufacturing demand. Around 50% of manufactured goods in Indonesia are used for intermediate purposes. Furthermore, in the first quarter of 2018, capital goods were 74.58% of total imports, much greater than

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:54.

consumer goods (9.08%) (Statistics Indonesia, 2018). Import supplies are oriented to intermediate or capital goods, whereas domestic production is oriented more to consumer goods. In several sectors, the share of imports for intermediate used is significantly higher than the share of supplies from domestic production. This situation occurs in sectors such as wearing apparel, other chemicals, plastic products, and ceramics. A stronger capital goods orientation of imports, compared with supply (production), is observed in the sectors of machinery, transport equipment, and other manufacturing industries.

According to the Master Plan of National Industrial Development (RIPIN) 2015–2035, the characteristics of a strong industrial structure are having strong and synergistic linkage between industry sectors and various economic sectors; having high local content; dominating domestic markets; having future industry-leading products; being able to grow sustainably; and having high resilience to the world's economic turmoil. Therefore, grouping industrial development areas in Indonesia based on channeling (backward and forward linkages) among resources and supporting facilities and the increasing the scope of industrial area development activities would support the industrial structure of the country.

The manufacturing industry is a main booster of the Indonesian economy and a backbone for national economic resilience, based on local resources. The contribution of manufacturing to economic growth is dominant; the manufacturing industry contributed 17.95% of the gross domestic product (GDP) in the first quarter of 2018. Furthermore, manufacturing comprises 72.35% of the country's total national exports. Indonesian government rightly gives much attention to the manufacturing industry because it creates employment and has a multiplier effect on other sectors in the economy.

This research aims to analyze the productivity spillover effect at regional levels in the manufacturing industry in Indonesia to answer four questions: (1) What are the sources of productivity in the Indonesia's manufacturing industry? (2) Is there any productivity spillover among regions? (3) What is the effect of infrastructure on the firms' productivity? (4) What manufacturing industry sectors generate the high productivity?

We organize the paper in five sections. Section 1 is Introduction. Section 2 reviews the literature to give an analytical framework for studying how spillover affects productivity among regions. Section 3 shows the data used and the methodology that explains the theoretical model. Section 4 describes the result and analysis. Section 5 presents the conclusion of key findings and policy recommendations.

ANALYTICAL FRAMEWORK

Marshall (1920) identified three main factor of externalities that emerge from agglomerations; they are (i) input output linkages; (ii) labor market pooling; and (iii)

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:54.

knowledge spillovers. The importance of input and output linkages is mentioned in trade literature that forming agglomeration of industries. The theory of agglomeration states that there are advantages to being close between customer and supplier, such as lower transport costs and easy access to variety inputs. These total advantages increase productivity. It causes to attract more firms to an area. Scitovsky (1954) states that there are two kind of externalities: technological externalities (also called "spillovers") and pecuniary externalities. The former is actualized through non-market interactions that directly influence firm production and the utility of individuals; spillovers originate from physical proximity independent of any market interaction. As an example, the inflow of new firms to a certain location increases the local firms' efficiency and brings positive technological externalities. This can happen because of the sharing of a local public good, such as a common infrastructure. Meanwhile, in contrast, pecuniary externalities are controlled by the products of market interactions. They affect firms or consumers and workers only if they are involved in exchanges mediated by the price mechanism. Laffont (1990) stated that these externalities are relevant, particularly when markets are imperfectly competitive, since when an agent's decision affects prices, it also affects others' well-being.

Fujita and Thisse (1996) suggest that the relative relevance of the two concepts depends on the scale of analysis. Cities are replete with technological externalities (Anas, Arnott, and Small, 1998). According to Pyke, Becattini, and Sengenberger (1990), the same would hold for local production systems. We can find an example in the parts and components for motor vehicles and motorcycle. We know that those manufactures of parts and components are not always located in the countries where resources or raw material such as rubber and metalworking are located and countries where abundant in unskilled labor and rubber like Malaysia, Indonesia, or Thailand. On the other hand, they are often located in developed countries such as European and US, in close proximity to the final assembly producers (Barlow, Jayasuriya and Tan, 1994). In addition, Scott and Mattingly (1989) found evidence that agglomerations of vertical linkage such as supplier-customer have been growing forcefully over the last few decades, such as the computer and associated part of computer in Silicon Valley, USA. In this case, the advantages of close proximity of supplier and buyer seem to be more important than cost considerations. This phenomenon is the focus of this research. It is also interesting to know the difference of mechanism of transmitting the knowledge among high-tech industries and low-tech industries between regions.

In the case of Indonesia, research on productivity spillover in the manufacturing industry was undertaken by Rothenberg et al. (2017). They state that productivity spillover exists in the Indonesian manufacturing industry, although to a relatively small degree compared with the US and Europe, and is restricted to certain industries. That research revealed that supply chain linkages and natural resources become the main

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:54.

factors that drive the spatial concentration (agglomeration) of the manufacturing industry in Indonesia.

The Channeling of Spillover Impact

With respect to the literature related to the externality of knowledge or spillovers, there are two main branches of discussion. The former stressed on measuring of external knowledge in a standard production function, using conventional inputs such as capital and labor. This method called the "trade-growth" theory. This method is built by Krugman (1979) and Grossman and Helpman (1991). They state that knowledge externalities are important factor of growth and international trade. Their analysis is carried out both at the firm and country level with the objective to estimate the impact of external knowledge on the total factor productivity of units in a geographical context. The results vary because they depend on the various channels such as international trade, foreign direct investment (FDI), and domestic production through supply chain networks. The second branch of literature, initiated by Griliches (1979), emphasizes the knowledge production function (KPF) framework. This research focuses on measuring of knowledge spillovers in a standard production function and the effect of productivity spillovers among regions. We use this second approach.

Productivity Spillover

The industrial linkage cannot be separated with geographic aspect. For example, when groups of industries located in same places and share knowledge and information they can be stated as spatially proximate. Evidence shows that lower cost of transportation on transactions between customer suppliers interregion is one of important factor to industrial agglomeration (Fujita and Thisse, 2013). Marshall (1920) and Jaffe et al. (1993) use data on patent citations and find evidence that geographic distance negatively affects the degree of knowledge diffusion. In manufacturing industry, the pattern of spatial linkage is determined by two factors, the proximity access to market and supplier. The reason for the importance of this linkage proximity might be classified as follows: First, for economic reasons such as efficiency and productivity aspect. Second, for psychological reasons such as greater information and knowledge of availability and reputation of local supplier. This paper examines how spatial proximity of group of industry in one region affect the productivity group of industry in other region. Capello (2009) explains clearly the nature and characteristics of spatial spillover to include three types: knowledge spillover, industry spillover, and growth spillover. Table 2 provides details.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:54.

Models with spatial structures are most often used in regional science, economic geography, and urban economics. Relatively recently, however, the method has been applied in many panel data studies in international economics, public economics, and agricultural economics. The approach captures the structure of cross-sectional correlation with the exogenous spatial weights matrix and estimates the spatial effects by spatial parameters. The spatial weights matrix is usually formed on the basis of spatial (geographical) characteristics, but the characteristics can also be based on economic or socio-economic distance among units (Han and Sickles, 2017). Scholars have examined empirical research related to the technology spillovers based on micro level. Table 3 provides the summary.

Infrastructure Spillover

Infrastructure is very important for firm productivity. Firms in region with modern access of telecommunications, water supply, reliable electricity supplies, and connected road links are more productive than other region without this advantage. The region which has a good infrastructure can direct and indirect affect the productivity of neighboring regions. Although building and maintaining intrastructure such as roads, electric grids, ports and telecommunication networks are costly, however revitalizing infrastructure is important for firms to grow and make profit, because it expands the access of market and reduces the costs of transactation. The developing countries have a problem related to infrastructure quality because of underinvestment and lack of maintenance and repairs.

Table 2. The type of spatial spillovers

Type of spatial spillovers **Characteristics**	***Knowledge spillovers***	***Industry spillovers***	***Growth spillovers***
Definition	The values of a firm or an organization which affected by knowledge produced by other firms or organizations	The values of a firm or an organization affected by productivity of another firm in the same or different sectors	The growth potentialities of a region which affected by growth for other regions
Source of externality	Knowledge/Technological externalities	Technological and pecuniary externalities	Technological externalities
Level of analysis	Firm level Regional level	Firm level Industry level	Regional level
The expected impact of Spillover	Only positive	Positive and negative	Positive and negative

Source: Capello (2009)

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:54.

Table 3. Technology spillover in empirical research at micro levels: summary

Scholars	Country	Period	Measure of linkage	Dependent variable	Main results
Bernstein, Nadiri (1989)	USA	1965-1978	Intra industry	Production cost	Positive impact
Geroski, Machin, Van Reenan (1993)	UK	1972-1983	Intra industry	Profitability	Producer and user-spillover no significant in several models
Amity, Cameron (2007)	Indonesia	1996	Cost and demand linkage	Wage	Positive impact, but highly localized
Todo, Miyamoto (2002)	Indonesia	1995-1997	R&D and human resources development	Labor productivity	Positive impact, knowledge diffusion from foreign MNC to domestic firms
Antonelli (1994)	Italy	1984-1985	Intra industry	Labor productivity growth	No significant estimates
Adam, Jaffe (1996)	USA	1974-1988	Geographical distance	Total Factor Productivity	Positive impact major influence from national technology than from international
Lindstrom (1999)	Sweden	1979-1994	Intra industry	Total product growth	Positive impact
Los, Verspagen (2000)	USA	1974-1993	Intra industry; Patent space	Labor productivity growth	Positive impact: intraindustry and inter-industry
Medda, Puga (2007)	Italy	1998-2000	Geographical and industrial	TFP Growth	Positive impact of intra industry spillovers; no significant inter industry spillovers
Lopez, Sudekum (2009)	Chili	1990-1999	Geographic and industrial	TFP	Positive impact of intra industry spillover; but not strongly localized
Peng, Hong (2013)	China	1996-2007	Geographical and industrial	Output per worker	Positive impact of industry intersectoral spillovers

Source: Adopted from Medda and Piga (2007)

The lack of infrastructure development is one of the important factors determining productivity growth (Firdausy, 2005). If firms want to benefit from globalization and involve in supply chain network, they need a reliable infrastructure that connect them to global markets. The effect of infrastructure can spill over among sectors and regions. Because of the importance of infrastructure, it should be inserted in the production function as an input that affects productivity of home region and neighboring regions.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:54.

METHODS

Data Source

In this research, almost all of the data were derived from the Annual Survey of large and medium manufacturing industry company conducted by the Indonesia Statistics (BPS). The data were obtained in the form of output, input, labor, physical capital, and infrastructure index for the period 2010–2014. The data from 24 sectors at the two-digit level of industrial classification (KBLI) 2009 and from 322 districts and regencies. Unit analysis is firms at the district level. The weight matrix used is a distance matrix (322 × 322) across districts and regencies from the Indonesia geo spatial agency. Before doing estimation, the data were cleaned to attain a fixed number of observations in every year. High tech cluster are grouped of high and medium high sectors. Low tech cluster are grouped of low and medium low sector according to OECD (2011) classification.

Empirical Model

This research used one dependent variable, labor productivity (value added per worker), and several independent variables that are divided into two types: the main variable (capital per worker) and the control variables (agglomeration and infrastructure). Labor productivity is measured as value added per worker, which is defined as the difference between real output and real intermediate input divided by the number of workers. The unit of analysis of this research is firm level. We aggregate variables of firm level to region level in the spatial panel model. We run the model from Peng & Hong (2013): non spatial panel and spatial panel.

The Non Spatial

The model is as shown in Equation 1.

$$Q/L = AC^{\gamma}(K/L)^{\alpha}(G/L_{region})^{\beta} \quad (1)$$

Q is the value added of firm; L is the number of workers of firm. K is amount of capital in firm. L_{region} is the number of workers of all firms in a region. G is the infrastructure index in a region, and C is the agglomeration index in a sector. γ is the productivity elasticity of C, and α is the productivity elasticity of capital deepening. β is the productivity elasticity of infrastructure. C refers to concentration and specialization of a sector industry.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:54.

$$C = (\frac{Csi}{Cs})/(\frac{Cni}{Cn}) \quad (2)$$

C_{si} is the number of workers on sector s in region i. C_s is the number of workers on sector s in all regions. C_{ni} is the number of workers on all sectors in region i. C_n is the number of workers on all sectors in all regions. Taking the natural logarithm of each side of Equation (1), then:

$$\ln (Q/L) = \ln A + \alpha \ln\left(\frac{K}{L}\right) + \beta \ln\left(\frac{G}{L_{region}}\right) + \gamma \ln C + \varepsilon \quad (3)$$

The Spatial Panel

The use of spatial weights matrix in spatial econometric is critical. In this model W is S × S for a spatial weight matrix that specifies the distance among observations (by districts/regencies).

In this research, we used the spatial Durbin model (SDM). The SDM model describes the relationship between spatial externalities and labor productivity given by Equation (4) where all variables are in natural log form, as follows:

$$\ln(Q/L)_{st} = \delta \sum_{s=1}^{s} W \ln(Q/L)_{mt} + \alpha \ln(K/L)_{st} + \beta \ln(\frac{G}{L_{region}})_{st} + \gamma \ln C_{st} + \theta_1 \sum_{m=1}^{S} W \ln(K/L)_{mt} + \theta_2 \sum_{m=1}^{S} W \ln(\frac{G}{L_{region}})_{mt} + \theta_3 \sum_{m=1}^{S} W \ln C_{mt} + \xi_s + \lambda_t + \varepsilon_{st} \quad (4)$$

δ refers to the technology spillover among region that reflects spatial dependence. It is expected to be positive, indicating that region productivity levels are positively related to a linear combination of neighboring values. The terms θ_1, θ_2, and θ_3 are parameters; s = 1, …, S region; t = 1, …, T is time period; the subscript *st* means *home* region and *mt* means *other* region; Q/L shows value added per worker representing labor productivity level; K/L is the capital per worker refers to capital deepening; C is the sector agglomeration index for sector s; G/L_{region} is the infrastructure per total worker in a region; the term ξ_s is spatial fixed effects or spatial random effects; λ_t is time period fixed effects or time period random effects; ε_{st} is $(0,\sigma^2)$ a normally distributed, constant variance disturbance term.

In equation (4), the SDM measures that the dependent variable in region s is affected by the dependent and independent variables in other region m. This facilitates the interpretation of operations with spatial weight matrix as an averaging of neighboring values.

$\sum_{m=1}^{s} W \ln(Q/L)_{mt}$ is weighted average of firm value added per worker of other region, capture spatial effects working through dependent variable (labor productivity).

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:54.

$\sum_{m=1}^{s} W\ln\left(\frac{K}{L}\right)_{mt}$, $\sum_{m=1}^{s} W\ln\left(\frac{G}{L_{region}}\right)_{mt}$ *and* $\sum_{m=1}^{s} W \ln C_{mt}$ are average of independent variables from neighboring areas. The θ_1, θ_2, and θ_3 are parameters associated with these variables. These coefficient estimates on the spatial effect of the explanatory variables capture two types of spatial externalities: spatial effect working through the level of labor productivity as a dependent variable and spatial effects working through explanatory variables.

The SDM occupies a good approach of spatial regression analysis because it nests many of the models widely used in the literature (Fingleton, 2010) as follows:

(a) Imposing the restriction $\delta = 0$ and $\theta_1, \theta_2, \theta_3 = 0$ yields standard least square model (LSM) or pooled model that leads to a non-spatial regression like Equation (3), which does not consider spatial spillover generated by spatial interaction among regions.
(b) Imposing the restriction θ_1, θ_2, and $\theta_3 = 0$ leads to a spatial lag model (SLM) that includes a spatial effect of labor productivity from neighboring regions but excludes the influence of spatial effect of explanatory variables.
(c) $(\theta_1, \theta_2, \theta_3)' + \delta(\alpha\beta\gamma)' = 0$ yields the spatial error model, a shock in a region that impact the productivity in home region and additionally affects its neighboring region through spatial spillovers.
(d) Imposing the restriction $\delta = 0$ yields in a least squares spatially weighted X regression model (SLX) that assumes independence between regional productivity level but includes characteristics from neighboring regions in the form of spatially weighted explanatory variables.

RESULTS AND DISCUSSION

We run some descriptive statistics of main variables grouped by 24 sectors of two-digit industrial classification (KBLI) and regions (islands) to see the nature and characteristic of each variables as follows.

Descriptive Statistics

In column 4 of Table 4, the top five sectors of Indonesia's manufacturing industry that generate most employment are: (1) food, (2) wearing apparel, (3) textiles, (4) rubber and plastic products, and (5) tobacco. These sectors are considered labor-intensive industries, and all of these sectors are categorized as low-tech industries. On average the labor productivity (value added/worker) of these sectors is still low. On the other hand, in

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:54.

column 6 of Table 4, the top five sectors of Indonesia's manufacturing industry that generate high labor productivity are: (1) chemical, (2) motor vehicles, (3) basic metal, (4) other transport equipment, and (5) machinery and equipment. We can see that from these five sectors, three sectors categorized as high-tech industries.

Table 4. Productivity per two-digit KBLI of sectors in Indonesia's manufacturing industry

2 digit KBLI	Sectors	Number of firms	Number of workers	Value added (million)	Value added per worker	Technology intensity
(1)	(2)	(3)	(4)	(5)	(6)	(7)
10	Food	4820	759,317	290,000	381,922	Low-Tech
11	Beverages	293	43,955	16,200	368,559	Low-Tech
12	Tobacco	735	330,510	126,000	381,229	Low-Tech
13	Textiles	2003	405,617	58,400	143,978	Low-Tech
14	Wearing apparel, dressing and dyeing	1782	499,804	43,300	86,634	Low-Tech
15	Leather and footwear	611	236,456	29,200	123,490	Low-Tech
16	Wood and product of wood	910	199,723	19,800	99,137	Low-Tech
17	Paper and paper product	428	165,763	55,400	334,212	Low-Tech
18	Publishing, printing and reproduction	438	40,872	10,500	256,900	Low-Tech
19	Coke, refined petroleum product and nuclear fuel	65	5,347	2,200	411,446	High-Tech
20	Chemical and chemical products	807	168,158	198,000	1,177,464	Low-Tech
21	Medical, precision and optical instrument, watches and clocks	217	55,840	15,000	268,625	High-Tech
22	Rubber and plastic products	1508	351,831	129,000	366,653	Low-Tech
23	Glass products	1459	163,744	75,700	462,307	Low-Tech
24	Basic metal	266	65,834	60,500	918,978	Low-Tech
25	Fabricated metal products	830	149,345	39,600	265,158	Low-Tech
26	Radio, television and communication equipment and apparatus	280	133,371	36,700	275,172	High-Tech
27	Electrical machinery and apparatus	292	115,276	66,700	578,611	High-Tech
28	Machinery and equipment	297	53,869	31,300	581,039	High-Tech
29	Motor vehicles, trailer and semi-trailer	284	122,587	135,000	1,101,259	High-Tech
30	Other transport equipment	246	73,499	51,400	699,329	High-Tech
31	Furniture	1190	156,835	20,300	129,435	Low-Tech
32	Other non-metallic mineral product	524	147,300	14,400	97,760	Low-Tech
33	Industry services and maintenance	84	17,414	2,980	171,127	Low-Tech

Source: Author calculation; categorized adopted from OECD (2011) classification

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:54.

Table 5. Productivity per region in Indonesia's manufacturing industry

Islands	Number of firms	Percentage of number of firms	Number of workers	Percentage of number of workers	Value added (million)	Percentage of value added
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Java	16,943	83.18%	3,743,842	83.90%	1,070,000	70.27%
Sumatera	2,159	10.60%	504,236	11.30%	352,000	23.12%
Kalimantan	321	1.56%	95,939	2.15%	44,200	2.90%
Sulawesi, Maluku, Papua	541	2.66%	91,708	2.05%	54,500	3.58%
Bali & Nusa Tenggara	205	1.99%	26,327	0.59%	1,920	0.13%

Source: Author calculation

In Table 5, we can see that there is a deep disparity inter-island (region), with Java as the center of Indonesia's economics, whereas other islands contribute less to economic growth. Around 70% of the value added of Indonesia's manufacturing industry is located in Java island.

Regression Analysis

We estimate the models in Equations (3) and (4), using pooled OLS, panel, and spatial panel regression. From the LR and LM test in Table 6, the non-spatial models should be rejected.

Table 6. Spatial diagnostic test results: diagnostic tests for spatial dependence

Test		Statistic	Df	p-value
Spatial error:				
Moran's I		10.119	1	0.000
Larange multiplier		97.921	1	0.000
Robust Lagrange multiplier		0.045	1	0.832
Spatial lag:				
Lagrange multiplier		99.432	1	0.000
Robust Lagrange multiplier		1.555	1	0.212
Spatial lag model				
Wald test of rho = 0	: chi2 (1) = 101.887 (0.000)			
Likelihood ratio test of rho = 0	: chi2 (1) = 69.796 (0.000)			
Lagrange multiplier test of rho = 0	: chi2 (1) = 90.196 (0.000)			
Spatial error model				
Wald test of lambda = 0	: chi2 (1) = 103.366 (0.000)			
Likelihood ratio test of lambda = 0	: chi2 (1) = 70.497 (0.000)			
Lagrange multiplier test of lambda = 0	: chi2 (1) = 93.398 (0.000)			

Source: Author calculation

We analyze the capital per worker (K/L), which refers to capital deepening. Since the elasticity of ln (K/L) in the non-spatial model (Column 2 of Table 7) is 0.1 and are

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:54.

grouped by low tech and high tech (Column 2 and 5 of Table 7) is 0.1 and 0.08, respectively, all values are significant. Spatial spillover arises from changes in the independent variables that impact to other regions. The value of $\sum_{s=1}^{s} W \ln(Q/L)_{mt}$ (Column 6 of Table 7) is 0.91 and significant, and also grouped by low-tech and high-tech sectors (Column 7 and 8 of Table 8) is 0.86 and 0.57 whereas all values are significant, which implies the presence of technology spillover and spatial dependence. Labor productivity of firms in the home region is affected by labor productivity of firms in neighboring regions.

Table 7. Spatial regression results of all sectors in Indonesia's manufacturing industry

Dependent variable: value added per worker: ln (Q/L)						
	Non spatial Model			**Spatial Model**		
	Pooled OLS	**Panel with Fixed Effect**	**Panel with Random Effect**	**Spatial Error Model**	**Spatial Lag Model**	**Spatial Durbin Model**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Intercept	8.546***	- 6.701***	9.765***	-	4.200	10.040***
$ln\ (K/L)_{st}$	0.299***	0.098***	0.187***	0.015*	0.010*	- 0.008
$ln\ (G/L_{region})_{st}$	0.067***	- 1.177***	0.072***	0.104**	0.107*	- 0.076*
$ln\ (C)_{st}$	- 0.030***	- 0.006	- 0.022***	0.079	0.062	- 0.049
$\sum_{s=1}^{s} W \ln(Q/L)_{mt}$	-	-	-	-	-	0.907***
$\sum_{s=1}^{s} W \ln(K/L)_{mt}$	-	-	-	-	-	0.042
$\sum_{s=1}^{s} W \ln(G/L_{region})_{mt}$	-	-	-	-	-	0.749***
$\sum_{s=1}^{s} W \ln(C)_{mt}$	-	-	-	-	-	- 0.558**
Sigma_u	-	2.057	0.925	-	-	-
Sigma_e	-	0.800	0.800	1.05	1.05	-
Spatial (rho)	-	0.868	0.572	-	0.472*	1.22e-11
Spatial (lambda)				0.733***	0.731***	-
Number of Obs	65145	65145	65145	1610	1610	1610
Number of groups	-	15133	15133	322	322	322
Panel length	-	5	5	5	5	5
Prob > F	0.0000	0.0000	0.0000	-	-	-
R-squared	0.168	0.002	0.241	0.043	0.309	0.193
Root MSE	1.234	-	-	-	-	-

Note: the sign * indicates significance level: * p < 0.1; ** p < 0.05; *** p < 0.01

Source: Author calculation

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:54.

Table 8. Spatial regression results grouped by (low tech and high tech) sectors in Indonesia's manufacturing

Dependent variable: value added per worker: ln (Q/L)								
	Low-Tech Industry			**High-Tech Industry**			**Spatial Durbin Model with random effect**	
	Pooled OLS	**Panel with Fixed Effect**	**Panel with Random Effect**	**Pooled OLS**	**Panel with Fixed Effect**	**Panel with Random Effect**	**Low-Tech**	**High-Tech**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
Intercept	8.770***	- 6.47^{0}***	9.847***	9.005***	- 9.568*	9.644***	10.152***	11.774***
$ln\ (K/L)_{st}$	0.280***	0.100***	0.183***	0.225***	0.079***	0.160***	- 0.011	0.010
$ln\ (G/L_{region})_{st}$	0.076***	- 1.152***	0.082***	- 0.009	- 1.459***	-0.011	- 0.062	0.034
$ln\ (C)_{st}$	- 0.038***	0.008	- 0.026***	0.163***	-0.089*	0.129***	- 0.012	0.013
$\sum_{s=1}^{n} W \ln(Q/L)_{mt}$	-	-	-	-	-	-	0.856***	0.575*
$\sum_{s=1}^{n} W \ln(K/L)_{mt}$	-	-	-	-	-	-	0.048	-0.025
$\sum_{s=1}^{n} W \ln(G/L_{region})_{mt}$	-	-	-	-	-	-	0.703***	0.441**
$\sum_{s=1}^{n} W \ln(C)_{mt}$	-	-	-	-	-	-	- 0.550**	0.458*
Spatial (rho)	-	0.870	0.557	-	0.840	0.533	6.23e-10	4.33e-13
Sigma_u	-	2.038	0.881	-	2.069	0.963	-	-
Sigma_e	-	0.786	0.786	-	0.902	0.902	-	-
Number of Obs	58401	58401	58401	6744	6744	6744	1600	605
Number of groups	-	13760	13760	-	1860	1860	320	121
Panel length	-	5	5	-	5	5	5	5

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:54.

Table 8. (Continued)

Dependent variable: value added per worker: ln (Q/L)								
	Low-Tech Industry			High-Tech Industry			Spatial Durbin Model with random effect	
	Pooled OLS	Panel with Fixed Effect	Panel with Random Effect	Pooled OLS	Panel with Fixed Effect	Panel with Random Effect	Low-Tech	High-Tech
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Prob > F	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	-	-
R-squared	0.160	0.004	0.157	0.119	0.0000	0.118	0.199	0.055
Root MSE	1.187	-	-	1.333	-	-	-	-

Note: the sign * indicates significance level: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Source: Author's calculation

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:54.

We then turn to infrastructure results. The elasticity of infrastructure per region $\ln(G/L_{region})$ in the non-spatial model (Columns 1 and 3 of Table 7) is 0.06 and 0.07, whereas the elasticity of $\ln(G/L_{region})$ in the spatial model (Column 5 of Table 7) is 0.19 (all values are significant). Therefore, we may conclude that infrastructure contributes positively to labor productivity. The infrastructure shared by other regions: $\sum_{s=1}^{s} W \ln(G/L_{region})_{mt}$ (Column 6 of Table 7) is 0.75 and significant and also grouped by low-tech and high-tech sectors (Columns 7 and 8 of Table 8) is 0.70 and 0.44 (all values are significant). We can state that infrastructure spillover among regions positively affects labor productivity. Next, we turn to agglomeration results. The elasticity of the agglomeration index (lnC) is only positive in the high-tech sector in the non-spatial model (Columns 4 and 6 of Table 8). There are 0.16 and 0.13 (all values are significant). While in the low-tech sector in the non-spatial model (Columns 1 and 3 of Table 8) the values are −0.04 and −0.03 (all values are significant). We can state that agglomeration affects labor productivity differently. The result is also found in the spatial model. The value of $\sum_{s=1}^{s} W \ln(C)_{mt}$ in the low-tech sector (Column 7 of Table 8) is −0.55 (negative and significant), whereas in the high-tech sector (Column 8 of Table 8), it is 0.45 (positive and significant). It can happen because in low-tech, agglomeration makes a region more attractive, making negative impact on other regions (Peng & Hong, 2013)

CONCLUSION

The key findings of this research can be summarized as follows. First, the labor productivity in manufacturing sectors in Indonesia (both high tech and low tech) is mainly determined by capital deepening (increasing the physical capital per worker K/L). Second, the productivity of firms in a home region is affected by productivity of other firms in neighboring regions through technology spillover. Third, productivity is also determined by infrastructure. Infrastructure spillover among regions positively affects labor productivity. This confirms the importance of regional infrastructure development, which can boost the productivity of manufacturing industry as engine of economic growth. The heterogeneity of a region means that a specific mix of policy reforms is needed to sustain productivity growth. Fourth, the high technology sector generates the highest productivity. The high technology sector leads productivity growth in the manufacturing sector, exhibiting the highest annual average productivity growth rates. The high technology group includes manufacturers of office machinery, electrical and electronic equipment, and optical instruments. This group of industries also needs a large share of highly skilled workers and large physical capital. In contrast, low technology manufacturing industries, such as traditional consumer goods manufacturing, has a lower average productivity growth.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:54.

REFERENCES

Amity, Cameron. (2007). "Economic Geography and Wages". *The Review of Economic and Statistics*, Vol. *89*, Issue 1, Page. 15-29.

Anas, Arnott. & Small. (1998). *Urban Spatial Structure.* University of Buffalo, Boston College, and the University of California at Irvine.

Anselin, L. (1988). *Spatial econometrics: Methods and models*. Springer-Science+Business Media, B. Economic Council of Finland.

Acharya, R. C. & Keller, W. (2009). "Technology transfer through imports". *Canadian Journal of Economics*, *42* (4).

Audretsch, D. & Feldman, M. (1996). "R&D Spillovers and the geography of innovation and production". *The American Economic Review*, *86*(3), 630-640.

Barlow, C., Jayasuriya, Sisira. & Tan, C. S. (2014). "The world rubber industry". *The World Rubber Industry*. 1-364. 10.4324/9781315822525.

Bell, Geoffrey. & Zaheer, Akbar. (2007). "Geography, Networks, and Knowledge Flow". *Organization Science - ORGAN SCI.*, *18*, 955-972. 10.1287/orsc.1070.0308.

Bartelsman, E. J., Caballero, R. J. & Lyons, R. K. (1994). *"Short- and long-run externalities"*. NBER working paper No. 3810.

Breschi, S. & Lissoni, F. (2001) "Localised Knowledge Spillovers Vs. Innovative Milieux: Knowledge 'tacitness' Reconsidered". *Papers in Regional Science*, *80*(3), (July), 255-273. doi:10.1007/PL00013627.

Capello, R. (2009). "Spatial Spillovers and Regional Growth: A Cognitive Approach" *European Planning Studies*, *17*(5), pp. 639-658.

Clare, A. R. (1996). "Multinational Linkages, and Economic Development". *The American Economic Review*, *86*(4), pp. 852-873.

Cobb, Charles. & Douglas, P. H. (1928). "A Theory of Production". *The American Economic Review*, vol. *18*, Issue 1, Supplement, Papers and Proceedings of the Fortieth Annual Meeting of the American Economic Association.

Conlon, G., Patrignani, P., Flytkjaer, P. & Halterbeck, M. (2012). "*The Impact of Investment in Intangible Assets on Productivity Spillovers.*" BIS Research Paper (74).

Cornwall. (1977). *Modern Capitalism: Its Growth and Transformation*. Martin Robertson, London.

Davis, D. R. & David, E. W. (2002). *Market Size, Linkage, and Productivity: A Study of Japanese Regions*.

Dembour, C. & Wauthy, X. (2009). "Investment in public infrastructure with spillovers and tax competition between contiguous regions". *Regional Science and Urban Economics*, *39*(9), 679–687.

Doring, T. & Schnellenbach, J. (2006). "What Do We Know About Geographical Knowledge Spillovers and Regional Growth? A Survey of the Literature." *Regional Studies*, *40* (3), (May 1), 375–395. doi:10.1080/00343400600632739.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:54.

Dyer, J. & Nobeoka, K. (2000). "Creating and Managing a High Performance Knowledge-Sharing Network: the Toyota case". *Strategy. Management. J., 21*, 345–367.

Eberts, R. W. & McMillen, D. P. (1999). "*Agglomeration economies and urban public infrastructure*". In P. Cheshire, & E. S. Mills (Eds.), Handbook of regional and urban economics. Applied economics, vol. *3*, New York: North-Holland (Chapter 38).

Egan, M. L. Mody, A. (1992). "Buyer-seller links in export development". *World Dev., 20*, 321–334.

Ellison, G., Glaeser, E. L. & Kerr, W. R. (2010). "What causes industry agglomeration? Evidence from co-agglomeration patterns". *American Economic Review*, *100*(6), 1195–1213.

Feldman, M. P. (1999). "The New Economics of Innovation, Spillovers and Agglomeration: A Review of Empirical Studies", *Journal of Economy, Innovation and New Technology*, Vol. *8*, pp. 5-25.

Fingleton, B. (2010). "A Multi-Equation Spatial Econometric Model, with Application to EU Manufacturing Productivity Growth". *Handbook of Applied Spatial Analysis*, p. 629-649.

Fingleton, B. (2003). "Increasing Returns: Evidence from Local Wage Rates in Great Britain". *Oxford Economic Papers* 55, pp. 716-739.

Firdausy, C. M. (2005). *Productivity Performance in Developing Countries: Country case studies in Indonesia*. United Nations Industrial Development Organization.

Fujita, et al., (1995). *The Spatial Economy Cities, Regions, and International Trade. Cambridge (Mass.)*, MIT Press.

Fujita, M. & Thisse, J. F. (1996). "Economics of agglomeration", *Journal of the Japanese and International Economies*, *10*, 339-378.

Fujita, M. & Thisse, J. F. (2013). *Economics of agglomeration*, Book, Cambridge University Press.

Gal, P. N. (2013). *Measuring Total Factor Productivity at the Firm Level using OECD-ORBIS*. Paris: OECD Publishing.

Holger, G. & Greenaway, D. (2003). *Much ado about nothing? Do domestic firms really benefit from foreign direct investment?* IZA Discussion paper series, No. 944.

Griliches, Zvi. (1979). "Issues in Assessing the Contribution of Research and Development to Productivity Growth." *Bell Journal of Economics*, *10* (1), 92–116.

Grossman, Gene M. & Ethanan, Helpman. (1991). *Innovation and Growth in Global Economy*. Cambridge MA: MIT Press.

Han, J. & Sickles, R. (2017). *Estimation of Industry-Level Productivity with Cross-Sectional Dependence using Spatial Analysis*. Korea Development Institute, Sejong, S. Korea.

Hausman, J. A., Hall, B. H. & Griliches, Z. (1986). "Patents and R&D: Is There a Lag?" *International Economic Review*, *27*, 265–283.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:54.

Hayami, H. (1991). *Dynamic Properties of Inter-industry Wages and Productivity growth*. Working paper.

Hirschman, A. O. (1958). *The Strategy of Economic Development*. Boulder and London, Westview Press.

Holly, S. & Petrella, I. (2012). "Factor Demand Linkages, Technology Shocks and the Business Cycle". *The Review of Economics and Statistics*, *94*(4), 948–963.

Holmes, Thomas J. (1995). "*Localization of Industry and Vertical Disintegration*". Staff Report No. 190, Federal Reserve Bank of Minneapolis.

Jaffe, et al. (1993). "Geographic Localization of Knowledge Spillovers as Evidenced by Patent Citations". *The Quarterly Journal of Economics*, Volume *108*, Issue 3, August 01, 1993, Pages 577–598.

Jaffe, A. B. (1998). "The Importance of 'spillovers' in the Policy Mission of the Advanced Technology Program". *The Journal of Technology Transfer, 23* (2), 11–19.

Koo, Jun. (2005). "Technology Spillovers, Agglomeration, and Regional Economic Development". *Journal of Planning Literature*, vol. *20*, no. 2.

Krugman, P. (1979). "A Model of Innovation, Technology Transfer, and the World Distribution of Income." *Journal of Political Economy*, *87* (2), 253–266.

Krugman, P. & Venables. (1995). "*Globalization and the Inequality of Nations.*" National Bureau of Economic Research, Working Paper No. 5098.

Laffont. & Maskin, E. (1990). The Efficient Market Hypothesis and Insider Trading on the Stock Market. *Journal of Political Economy*, 98, no. 1, 70-93.

Lopez. & Sudekum. (2009). "Vertical Industry Relations, Spillovers, and Productivity: Evidence from Chilean Plants". *Journal of Regional Science*, Vol. *49*, No. 4, 2009, pp. 721–747.

Marshall, A. (1920). *Principles of Economics*. London: MacMillan.

Medda, G. & Piga, C. A. (2007). *Technological Spillovers and Productivity in Italian Manufacturing Firms.* Working Papers. Loughborough University, United Kingdom.

Moreau, E. B. & Qian, C. L. (2013). *Knowledge Spillovers and Sources of Knowledge in the Manufacturing Sector: Literature Review and Empirical Evidence for the UK*. Foresight, Government Office for Science.

Moretti, E. (2004). "Workers' Education, Spillovers, and Productivity: Evidence from plant-level production functions". *American Economic Review*, *94*(3), 656–690.

OECD. (2011). *ISIC Rev. 3 Technology Intensity Definition - Classification of Manufacturing Industries into Categories based on R&D Intensities*. Paris: Organisation for economic co-operation and development.

Peng, L. & Hong, M. (2013). "Productivity Spillovers among linked Sectors". *China Economic Review*, *25*, 44-61.

Porter, M. E. (1990). *The Competitive Advantage of Nations*. New York: The Free Press.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:54.

Pyke, Becattini. & Sengenberger. (1990) *Industrial Districts and Inter-firm Cooperation in Italy*, Geneva, International Institute for Labour Studies, ILO.

Pereira, A. M. & Oriol, R. S. (2002). *Spillover Effects of Public Capital Formation: Evidence from The Spanish Regions*, paper, January.

Rencana Induk Pembangunan Industri Nasional (RIPIN) 2015-2035. [National Industrial Development Master Plan 2015-2035]. Jakarta: Indonesian Ministry of Industry.

Romer, P. M. (1986). "Increasing Returns and Long-run Growth." *Journal of Political Economy*, *94* (5), 1002–1037.

Romer, P. M. (1990). "Endogenous technological change". *J. Political Econ.*, *98*, S71–102.

Rothenberg., Bazzi. & Nataraj & Chari. (2017). *Assessing the Spatial Concentration of Indonesia's Manufacturing Sector: Evidence from Three Decades.* RAND Labor & Population. Working paper WR-1180.

Saia, A., Dan, A. & Silvia, A. (2015). *Productivity Spillovers from The Global Frontier and Public Policy: Industry-Level Evidence. The Future of Productivity: Main Background Papers*. OECD. Economics Department Working Papers, no. 1238.

Scitovsky, T. (1954). "Two Concepts of External Economies". *Journal of Political Economy*, *62*, 143.

Scott. & Mattingly. (2016). "The Aircraft and Parts Industry in Southern California: Continuity and Change from the Inter-War Years to the 1990s." *Economic Geography*, *65*, 1, 48-71,

Syafitri, Wildan. (2003). "Analisa Produktifitas Tenaga Kerja Sektor Manufaktur di Indonesia" [Analysis of Labor Productivity in the Manufacturing Sector in Indonesia]. *Jurnal Ekonomi dan Pembangunan Indonesia*, Vol. *3*, No. 2.

Syverson, C. (2011). "What Determines Productivity" *Journal of Economic Literature*, *49*, 2, 326–365.

Tian, L., Wang, H. H. & Chen, Y. (2010). "Spatial Externalities in China Regional Economic Growth". *China Economic Review*, *21*(5), S20–S31.

Todo, Miyamoto. (2002). "Knowledge Diffusion from Multinational Enterprises: The Role of Domestic and Foreign Knowledge-Enhancing Activities". *SSRN Electronic Journal.*

Uesugi, I. (2015). Interfirm Networks in Manufacturing Industry Agglomerations in Japan: Evidence from Survey Data. In: Watanabe, T., Uesugi, I., Ono, A. (Eds.) *The Economics of Interfirm Networks*. Springer, Japan: Tokyo, pp. 67–92.

Wolf, E. N. & Ishaq, M. N. (1993). "Spillover Effect, Linkage Structure, and Research and Development". *Journal of Structural Change and Economic Dynamics*, vol. *4*, no. 2.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:54.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:35:54.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 4

THE EFFECT OF FISHING VESSEL SUBSIDY ON INDONESIA'S CAPTURE FISHERIES PRODUCTION

Winda Nuramalia and Sartika Djamaluddin*
Department of Economics, Universitas Indonesia, Depok, Indonesia

ABSTRACT

The present study analyzes the effect of fishing vessel subsidies on Indonesia's capture fisheries production. The time series national data from 1985 to 2017 was used. Using logarithmic regression model, the study results showed that increasing fishing vessel subsidy by 1% will increase the production of capture fisheries in Indonesia by 0.17%. The results also show that a 1% increase in the total number of fishermen and the average number of vessels per entrepreneur each will increase the production of capture fisheries in Indonesia by 0.27% and 0.18%, respectively. Meanwhile, increasing the number of fishing gear and fuel cost by 1% each will increase the production of capture fisheries in Indonesia respectively 0.17% and 0.04%. The study results indicate that the subsidized fishing vessel policy implemented by the Ministry of Marine Affairs and Fisheries has been consistent with the policy direction of increasing the capacity of capture fisheries production and increasing the fishing ground. To improve the effect of the subsidized fishing vessel policy, the study results suggest that the Ministry of Marine Affairs and Fisheries should (1) distribute the fishing vessel on time, (2) increase the efficiency of fishery vessel subsidy budget, (3) increase supervision over the implementation of fishery vessel subsidies to avoid misuse of the budget, and (4) simplify the process of making fishing licensing documents, such as SIPI and SIKPI

Keywords: vessel subsidy, fisheries production, fisheries

* Corresponding Author's E-mail: sartika.djamaluddin@gmail.com.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:01.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 4

THE EFFECT OF FISHING VESSEL SUBSIDY ON INDONESIA'S CAPTURE FISHERIES PRODUCTION

Winda Nuramalia and Sartika Djamaluddin*
Department of Economics, Universitas Indonesia, Depok, Indonesia

ABSTRACT

The present study analyzes the effect of fishing vessel subsidies on Indonesia's capture fisheries production. The time series national data from 1985 to 2017 was used. Using logarithmic regression model, the study results showed that increasing fishing vessel subsidy by 1% will increase the production of capture fisheries in Indonesia by 0.17%. The results also show that a 1% increase in the total number of fishermen and the average number of vessels per entrepreneur each will increase the production of capture fisheries in Indonesia by 0.27% and 0.18%, respectively. Meanwhile, increasing the number of fishing gear and fuel cost by 1% each will increase the production of capture fisheries in Indonesia respectively 0.17% and 0.04%. The study results indicate that the subsidized fishing vessel policy implemented by the Ministry of Marine Affairs and Fisheries has been consistent with the policy direction of increasing the capacity of capture fisheries production and increasing the fishing ground. To improve the effect of the subsidized fishing vessel policy, the study results suggest that the Ministry of Marine Affairs and Fisheries should (1) distribute the fishing vessel on time, (2) increase the efficiency of fishery vessel subsidy budget, (3) increase supervision over the implementation of fishery vessel subsidies to avoid misuse of the budget, and (4) simplify the process of making fishing licensing documents, such as SIPI and SIKPI

Keywords: vessel subsidy, fisheries production, fisheries

* Corresponding Author's E-mail: sartika.djamaluddin@gmail.com.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:07.

INTRODUCTION

Indonesia is one of the largest maritime nations in the world with the ocean covering nearly two-thirds of its territory. The Decree of the Minister of Marine Affairs and Fisheries of Republic of Indonesia No KEP.18/MEN/2011 states that Indonesia is composed of more than 17,000 large and small islands and the ocean covers about 5.8 million square kilometers with the coastline spanning 95,181 km. Therefore, Indonesia is rich not only in biodiversity resources such as fish and coral reefs but also in nonbiodiversity resources.

Capture fisheries is a potential natural resource that can be exploited in boosting economic growth, reducing poverty, and generating state revenue. In 2011, capture fishery was identified as a potential resource worth 65 million tons/year with the realization of capture fisheries production about 5.8 million tons/year. Table 1 presents the potential of capture fisheries resources in Indonesia as established in the Ministerial Decree of Marine Affairs and Fisheries No. KEP.45/MEN/2011 on The Estimation of Fish Resources Potential in Fishery Management Area of Republic of Indonesia.

The fishery sector presents great prospects to boost economic growth, evident from the rising value-added of fishery sector from 154.4 trillion rupiah in 2011 to 204.9 trillion rupiah in 2015. Therefore, the fishery sector is one of the significant contributors to the national GDP and an indicator of economic growth.

In the structure of the GDP, fishery is a subsector of the agricultural, forestry, and fishery business sector. From 2011 to 2014, the growth of the value-added of fishery subsector was more than that of the agricultural, forestry, and fishery sector as well as that of the national GDP. Figure 1 shows the growth of the value-added of the fishery subsector; agricultural, forestry, and fishery sector; and national GDP from 2011 to 2014.

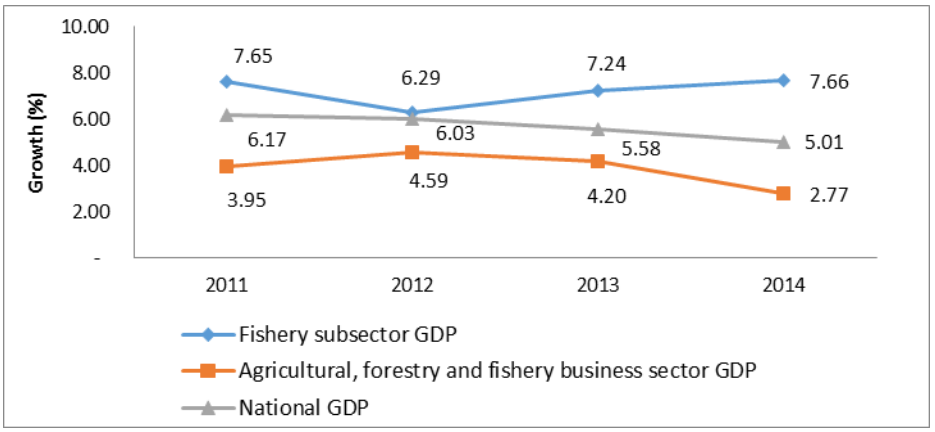
Table 1. The Potential of Fish Resources in Fishery Management Area of Republic of Indonesia

No	Fish Resources Category	Potential Value (thousands tons/year)
1	Big Pelagic Fish	11.454
2	Small Pelagic Fish	36.456
3	Demersal Fish	14.524
4	Penaeidae Shrimp	983
5	Coral Fish for Consumption	1.453
6	Lobster	49
7	Squid	284
	Total	65.201

Source: Ministerial Decree of Marine Affairs and Fisheries No KEP.45/MEN/2011 (2011).

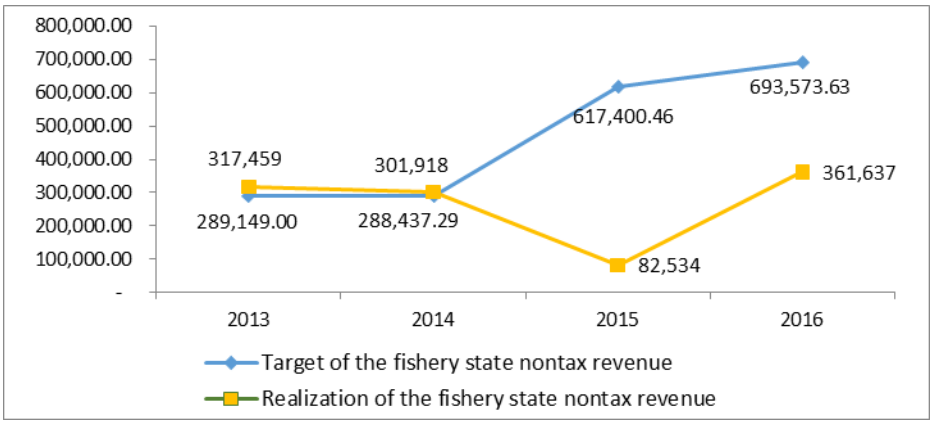
Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:07.



Source: Marine and Fisheries in Figures (2015) (reprocessed).

Figure 1. The Growth of Fishery GDP; Agricultural, Forestry, and Fishery Business Sector GDP; and National GDP in 2011–2014.



Source: LHP BPK on LK KKP 2015 (reprocessed).

Figure 2. The Target and Realization of the Fishery State Nontax Revenue in 2013–2016.

One of the indicators of the national economy is the contribution of individual sectors to the national GDP; for example, the contribution of fishery sector to the national GDP increased from 2.09% in 2010 to 3.25% in 2014 (Ministry of Marine Affairs and Fisheries, 2015), which indicates the growing significance of the fishery sector to growth of the national economy every year.

Capture fishery also is a major source of state revenue presented as the generated value of state nontax revenue (PNBP). The fishery sector is one of the key sources of state nontax revenue of non-oil and gas resources (Budget Statement of State Budget, 2016). The levy on capture fisheries subsector contributes nearly 80% to the total of fishery PNBP realization and showed a positive growth during 2012–2017 (Ministry of Marine Affairs and Fisheries, 2015). Despite the positive growth, the sector has been unable to meet the set target in past few years. In 2015, the fishery PNBP realization

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:07.

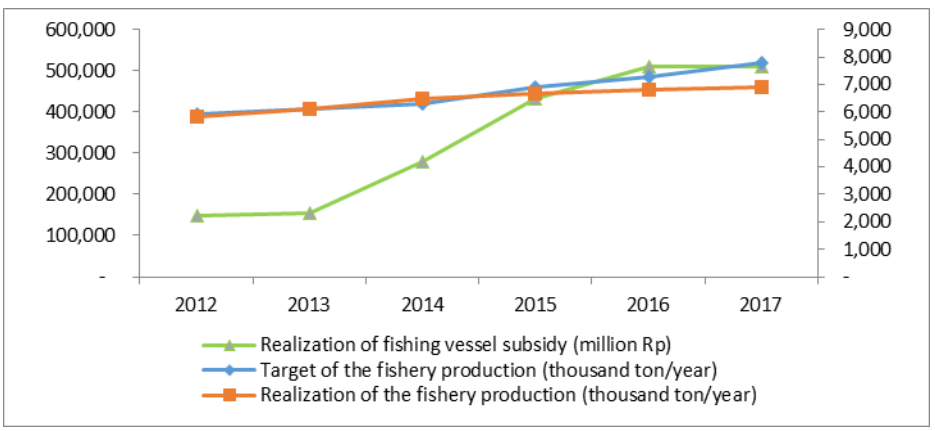
decreased by 77.17% as compared to that in 2014. In 2016, it increased by 338% as compared to that in 2015 even though it did not meet the set target.

The unmet fishery PNBP target indicates that production of capture fisheries is suboptimal. A study by the Fiscal Policy Institution (BKF) of Ministry of Finance in 2011 states that capture fisheries sector in 2009 posted inefficiency loss of 507%, which is the potential of PNBP of fishery that cannot be achieved yet. These results are similar to the study results of Nugroho et al. (2014), who analyzed the potential of PNBP of capture fisheries sector in Indonesia from 2012 to 2014. They concluded that although the volume of capture fisheries production has increased from year to year, the PNBP of fishery produced is not yet maximal. They highlight the ineffectiveness of the use of the existing production facilities of capture fisheries.

Government subsidy policy for fishing vessels plays a key role in capture fisheries production. The fishing vessel subsidy aims to increase the capacity of fishery production and to expand the reachability of fishermen in catching fish. According to Millazo (1998), the fishery subsidy policy can boost fishing capacity and fishery income, however it requires controls to avoid threatening business continuity and depleting of resources.

The realization of fishing vessel subsidy for 2012–2017 continued to rise, but failed to reach the set target. Figure 3 shows the comparison between the value of fishing vessel subsidy, target, and the realization of production in 2012–2017.

According to Figure 3, the increase of fishing vessel subsidy has not increased the fishery production to hit the target, indicating there are other factors besides the subsidy that affect the production of capture fisheries. Therefore, it is necessary to study the effect of fishing vessel subsidy and other factors on the production of capture fisheries.



Source: LHP BPK on LK KKP 2015 (reprocessed).

Figure 3. The Realization of State Nontax Revenue of Fishery and Fishing Vessel Subsidy in 2012–2017.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:07.

LITERATURE REVIEW

Production Theory

The present study analyzes the factors that affect the production of capture fisheries. The study uses production theory as theoretical reference. Production is the final output of an economic process or activity by using some inputs. Mankiw (2003) states that the output of goods and services in economy depends on the total number of inputs used as the factor of production as well as the ability to change input to output. Labor and capital are the key inputs in the production process.

The influence of capital on the level of production can be explained through production theory. Production theory explains that the output in the production process requires several inputs, such as capital, labor, raw materials, and energy. More number of inputs yields a higher level of production. The present study uses the Cobb–Douglass production function, which can be written as follows:

$$Q = A \, x \, L^{\alpha} \, x \, K^{\beta}$$

where Q is the production output, L is the labor input, K is the capital input, α is the elasticity of labor, and β is the elasticity of capital.

The Cobb–Douglas function is used to estimate the economic returns to scale in conditions as to whether they are increasing, constant, or decreasing. In addition, the Cobb–Douglas production function coefficients directly describe the production elasticity of the inputs used. The above equation can be simplified by converting it to a double logarithm natural (ln) to get a multiple linear equation of the following form:

$$LnQ = Ln\, A + \alpha \, Ln\, L + \beta \, Ln\, K + \varepsilon$$

In this study, the production input and output used are the capture fisheries production input and output. The study output is the production result of capture fisheries. The labor input includes the fishermen and the capital input includes fishing vessel, fishing gear, and refined fuel oil. The policy of fishing vessel subsidy is used to explain the production input subsidy.

In capture fisheries, the labor and capital inputs are variables or not fixed. A fishery entrepreneur can produce the output by combining various amounts of labor and capital inputs. All the possible combinations of the same input and output can be shown in an isoquant curve (Pindyck dan Rubinfeld, 2005). Figure 4 presents the isoquant curve on the capture fisheries production. The curves of q1, q2, and q3 depict some of the vessel input combinations and other inputs at a certain output level. Production output will increase when the isoquant curve moves from q1 to q2 or to q3.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:07.

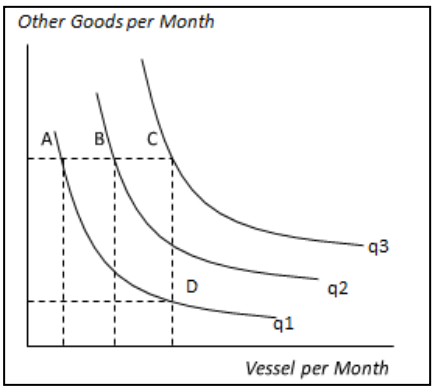


Figure 4. Isoquant Curve of Capture Fisheries.

In production, an entrepreneur can choose the input combination used to minimize the cost in producing a certain amount of output. It can be represented in the isoquant curve. Figure 5 illustrates the isoquant curve of capture fisheries on the fishing vessel input and other inputs.

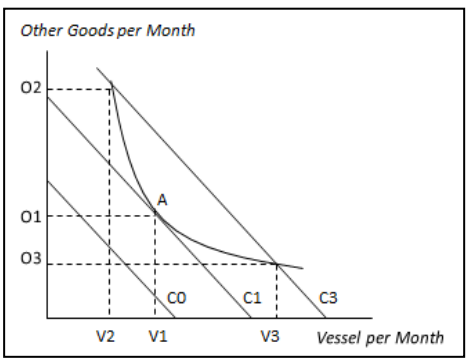


Figure 5. Isoquant Curve of Capture Fisheries.

In Figure 5, the C1 isoquant curve intersects with the q1 on point A. It implies that q1 output can be produced at a minimum cost with the vessel input as V1 and other input as O1. The other input combinations are V2 and O2 or V3 and O3 producing the same output, but at a higher price. Each of the capture fisheries production factors are explained in depth in the following section.

Factors Affecting Production: A Literature Study

Past studies have analyzed the effect of production factors on the production output of capture fisheries. A study by Armstrong (2016) concludes that an increase of 1% of fishermen who work in a fishing vessel will increase the capture fisheries production by

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:07.

0.79%. Pascoe (2016) states that an increase of 1% in the total number of fishing vessels will increase the capture fisheries production by 0.76%. Similar to fishing vessels, increase in capital such as fishing gear will result in the increase of output in capture fisheries production (Kesteven, 1973). This result is in line with the study by Lewison (2008), who claims that 1% increase in fishing gear significantly increases the capture fisheries production by 0.43%.

Another key production input in capture fisheries production is refined fuel oil. Capital addition will result in the increase of capture fisheries production output (Kesteven, 1973). Therefore, the additional cost incurred by the fishermen will result in the increase of capture fisheries production output. It is consistent with the study result of Luhur dan Sari (2012), which claims that an increase of 1% in fuel oil cost will increase the capture fisheries production by 1.85%.

To realize the optimum capture fisheries management, the government can frame a few policies. Production input subsidy is one such policy that addresses the production cost structure. Ship subsidy policy can increase the amount of capital and is expected to increase fisheries production. Fishing vessel subsidy is included in-kind subsidy (Figure 6).

In Figure 6, the fishermen's use of fishing vessel and other production inputs are represented by the AB isocost curve. It is assumed that A is the total number of inputs that the fishermen have. The total amount of the production achieved by fishermen in E1 point with the level of vessel used is marked as V1 and other inputs as O1. The distribution of in-kind subsidy such as fishing vessel will shift the AB curve into the CD curve. With the subsidy, the number of vessel inputs that can be used by the fishermen increases to V2. With the subsidy as well, the fishermen can move the allocation of the use of vessel input into the use of other inputs so that the use of other inputs increase from O1 to O2. Then, because of the fishing vessel subsidy, the production will increase from E1 to E2.

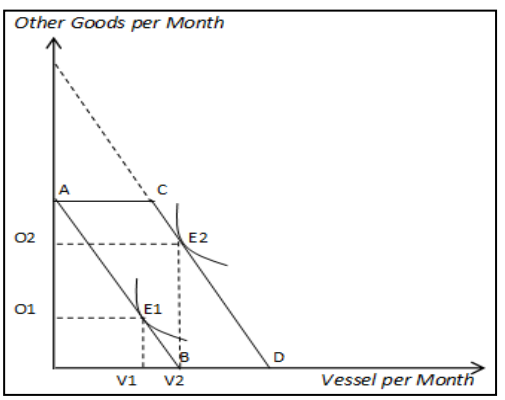


Figure 6. The Effect of In-Kind Subsidy on The Capture Fisheries Production.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:07.

METHODOLOGY

The Cobb–Douglass function, which was used by Armstrong (2016), is used as the reference model in the present study. It is written in the following equation.

$$PROD_t = \alpha + \beta_1 N_t + \beta_2 K/P_t + \beta_3 GEAR_t + \varepsilon_t$$

In addition, this study also refers to the model used by Pascoe (2016), formulated as follows:

$$PROD_t = \alpha + \beta_1 VESSEL_t + \beta_2 GEAR_t + \beta_3 SDI_t + \beta_4 BBMCOST_t + \varepsilon_t$$

The present study adapts both the models. Using time series data, the following estimation model is derived.

$$PROD_t = \alpha + \beta_1 SUBSIDY_t + \beta_2 FULLFISHERMEN_t + \beta_3 KPB_t + \beta_4 GEAR_t + \beta_5 BBMCOST_t + \varepsilon_t$$

To simplify the analysis of each independent variable to other independent variables, the above equation is changed to the form of natural logarithm (ln) to obtain the following equation:

$$LnPROD_t = \alpha + \beta_1 lnSUBSIDY_t + \beta_2 lnFULLFISHERMEN_t + \beta_3 lnKPB_t + \beta_4 lnGEAR_t + \beta_5 lnBBMCOST_t + \varepsilon_t$$

where *ln*PROD is the number of capture fisheries production;

*ln*SUBSIDY is the number of fishing vessel subsidy;

*ln*FULLFISHERMEN is the number of full-time fishermen;

*ln*KPB is the average number of vessels per fishery entrepreneur with the size >30 GT;

*ln*GEAR is the number of fishing gear; and

*ln*BBMCOST is the cost of fuel oil.

Based on the aforementioned research model, then the variable used in this research is summarized as follows:

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:07.

The Capture Fisheries Production (PROD)

This variable uses the total production of national capture fisheries in the form of yearly time series period of 1985–2017. The data are obtained from the Directorate General of Capture Fisheries of Ministry of Marine Affairs and Fisheries.

Fishing Vessel Subsidy (SUBSIDY)

This variable is a budget presented by the Ministry of Marine Affairs and Fisheries through programs addressed to subsidize fishing vessels. The data are obtained from secondary data in the form of yearly time series period of 1985–2017.

Full-time Fishermen (FULLFISHERMEN)

The variable of fishermen used in the present study is full-time fishermen who spend their entire working time for fishing (Ministry of Marine Affairs and Fisheries, 2002). The data used are the total number of national full-time fishermen in the form of a time series period 1985–2017. The data source is the Directorate General of Capture Fisheries of Ministry of Marine Affairs and Fisheries.

The Average of Vessel per Fishery Entrepreneur (KPB)

The average number of vessels per fishery entrepreneur is the average number of vessels owned by one fishery entrepreneur. This variable is calculated based on the following equation:

$$The\ average\ of\ boats/entrepreneurs = \frac{The\ number\ of\ boats\ with\ the\ size > 30GT}{The\ number\ of\ boat\ entrepreneurs\ with\ the\ size > 30GT}$$

The data are sourced from the national data in the form of yearly time series period 1985–2017 obtained from the Directorate General of Capture Fisheries of Ministry of Marine Affairs and Fisheries.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:07.

Fishing Gear (GEAR)

This variable is the number of registered fishing gears in the fishing permit (SIPI). The national data on the number of fishing gear in the form of yearly time series period 1985–2017 is obtained from the Directorate General of Capture Fisheries of Ministry of Marine Affairs and Fisheries.

The Cost of Fuel Oil (BBMCOST)

The variable of the cost of fuel oil is the fuel cost incurred by the fishermen for fishing in 1 year. The fuel cost is calculated using the following equation:

Fuel Cost = (the proportion of the number of vessel sized (t) on the total number of vessel) x (the average number of vessel trip sized (t) for one year) x (the needs of fuel per trip over one vessel sized (t)) x diesel price in the year)

Table 2 presents the details of the average number of vessel trips per year, the requirement of fuel per trip per year, and the total need for fuel per year over each vessel size category.

Table 2. The Needs of Fuel on Capture Fisheries Business Based on the Vessel's Size

Category	**The Vessel's Size (GT)**						
	<5	5–10	10–20	20–30	30–50	50–100	>100
The Number of (time/year)	216	36	20	18	9	4	3
The Needs of Fuel (liter/trip)	20	80	452	3.600	18.667	30.000	56.929
The Total Needs of Fuel (ton liter/year)	594.518	111.571	105.316	493.776	154.560	200.400	201.527

Source: Ministry of Marine Affairs and Fisheries (2013).

The data used are national data in yearly time series period 1985–2017. The data of diesel price used in the present study are sourced from Ministry of Energy and Mineral Resources (ESDM) and Pertamina. For vessels of size below 30GT (<5GT, 5–10GT, 10–20GT, and 20–30GT), the fuel price data for 1985–2017 used is subsidized fuel oil price. For vessels of size more than 30GT (30–50GT, 50–100GT, and >100GT), the fuel price for 1985–2013 is used as the subsidized fuel oil price, while the fuel price for 2014–2017 is used as the price of Marine Fuel Oil type.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:07.

The hypotheses used in the present study are as follows:

H1: The fishing vessel subsidy has a significant positive effect on the capture fisheries production.
H2: The number of full-time fishermen has a significant positive effect on the capture fisheries production.
H3: The average number of vessel per fishery entrepreneur has a significant positive effect on the capture fisheries production.
H4: The number of fishing gear has a significant positive effect on the capture fisheries production.
H5: The fuel cost has a significant positive effect on the capture fisheries production.

The estimation model used in this study is examined through regression analysis with least squares method (Ordinary Least Squares/OLS), because this method is considered the best, linear, and unbiased estimator (BLUE) (Gujarati, 2003). The econometric model is used to confirm between the estimation results obtained from empirical analysis with the prevailing economic theory.

The estimation model adopted in this study includes a four-step analysis: descriptive analysis, classic assumption test, econometric testing, and conformity testing with economic theory. The classic assumption test includes multicollinearity test, heteroscedasticity test, autocorrelation test, and normality test.

RESEARCH RESULTS

A model is stated appropriate if it fulfills the criteria of *BLUE* (Gujarati, 2003). The test result shows that there is no violation on the classical assumptions on the model. In other words, the used model fulfills the BLUE criteria and can be used for good estimation tools. Analyzing the time series data using Eviews 9 software, the capture fisheries production is estimated (Table 3):

The Cobb–Douglass function, which was used by Armstrong (2016), is used as the reference model in the present study. It is written in the following equation.

Examination of goodness of fit through the adjusted R-squared value shows that the estimation model above presents an average value 0.9864. It shows that all independent variables can explain various values of capture fisheries production as much as 98.93%, while the rest is explained by the variable which is out of the model in the equality. Based on the examination, it finds the probability F-statistic is 0.0000 (≤0.01). Thus, it can be summarized that the independent variables in the model (fishing vessel subsidy, full-time fishermen, the average of vessel per fishery entrepreneur, fishing gear, and fuel oil cost) together have significant effect on the variable of capture fisheries production.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:07.

Table 3. Result of Capture Fisheries Production

Dependent Variable: LnPROD		
Independent Variable	Coefficient	t-Statistic
C	3.826456	3.252516 ***
LnSUBSIDY	0.175341	9.742614 ***
LnFULLFISHERMEN	0.273357	3.739273 ***
LnKPB	0.186748	4.459611 ***
LnGEAR	0.177863	4.466244 ***
LnBBMCOST	0.044862	0.435998
R-squared	0.991038	
Adjusted R-squared	0.989379	
F-statistic	597.1579	
Prob (F-statistic)	0.000000	

Explanation:

*: significant in the level of 10%; **: significant in the level of 5%; ***: significant in the level of 1%.

Meanwhile, hypothesis testing for every independent variable shows the following data:

1. The variable of fishing vessel subsidy has a positive and significant effect on the capture fisheries production with the statistical coefficient 9.7426 and *p*-value 0.0000 (1% significance level). Thus, hypothesis H1 (fishing vessel subsidy has positive and significant effect on capture fisheries production) is accepted.
2. The variable of full-time fishermen has a positive and significant effect on the capture fisheries production with the statistical coefficient 3.7392 and *p*-value is 0.0009 (1% significance level). Thus, the hypothesis H2 (full-time fishermen has positive and significant effect on the capture fisheries production) is accepted.
3. The variable of the average of vessel per fishery entrepreneur significantly has a positive effect on the value of capture fisheries production with the statistical coefficient 4.4596 and *p*-value 0.0001(1% significance level). Thus, the hypothesis H3 (the average of vessel per fishery entrepreneur significantly has a positive effect on the value of capture fisheries production) is accepted.
4. The variable of fishing gear has a positive effect on the value of capture fisheries production with the statistical coefficient 4.4662 and *p*-value 0.0001 (1% significance level). Thus, the hypothesis H4 (the number of fishing gear has a significant and positive effect on capture fisheries production) is accepted.
5. The variable of fuel oil cost has statistical coefficient 0.4359 and *p*-value 0.6663. This indicates it does not have a significant effect even at the rate of 1%, 5%, or 10%. Therefore, hypothesis H5 (fuel oil cost has a positive and significant effect on the capture fisheries production) is rejected.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:07.

DISCUSSION

The Effect of Fishing Vessel Subsidy

The estimation result illustrates a positive and significant correlation between vessel subsidy and the number of fishing gear, which has a coefficient of 0.17. It implies that if the government increases vessel subsidy by 1%, ceteris paribus, the number of capture fisheries production will rise about 0.17%. This is consistent with the study conducted by Kuriyama (2017), stating that fisheries subsidy that aims to increase the capacity of production, such as aid provision and vessel modernization or fuel subsidy, will increase the capture fisheries production.

The study result shows that the capture fisheries production is not correlated to the increase in the budget for fishing vessel subsidy. This is evident from the increase in capture fisheries production, which is lower than the increase in fishing vessel subsidy budget. Based on the evaluation by the Ministry of Marine Affair and Fisheries (KKP) and Audit Board of Republic Indonesia (BPK), the factors affecting this issue are likely to be as follows:

1. Delay in the distribution of fishing vessels, which affects their timely use for fishing operation.
2. The suboptimal use of fishery subsidy budget such as low budget absorption and indication of multiplication of fictive fishing vessel.
3. The fishing vessel subsidy cannot be availed for lack of appropriate shipping and fishing business documents.
4. Technical specification of fishing vessel subsidy is not consistent with fishermen demand; hence, it is not utilized.

The Effect of Full-time Fishermen

The estimation shows that there is a positive and significant correlation between the number of full-time fishermen and the production of capture fisheries with the coefficient 0.27. It implies that, if there is a 1% increase in number of full-time fishermen, ceteris paribus, then the amount of capture fisheries production will rise by 0.27%. Armstrong (2016) concludes that 1% increase in the number of fishermen working in a vessel will increase the production of capture fisheries by 0.79%.

The study result shows that the amount of capture fisheries production is not correlated with the increase in number of full-time fishermen. This is evident from the increase in capture fisheries production, which is lower than the rising number of full-

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:07.

time fishermen. Based on the evaluation that has been conducted by The Ministry of Marine and Fisheries and The Audit Board of Republic Indonesia, there may be several factors affecting the result, such as (1) lack of capital investment capability among fishermen so that the vessel cannot be operated to capture the fish and (2) lack of operating skill in using the vessel, especially large vessel (>30 GT).

The Effect of Average Vessel per Fishery Entrepreneur

The estimation shows a positive and significant correlation between the average numbers of vessels per fishery entrepreneur and the amount of the production of capture fisheries with a coefficient 0.18%. It means that if an entrepreneur increases the number of vessel he owns by 1%, *ceteris paribus*, the amount of capture fisheries production will increase by 0.185. This is consistent with the study by Pascoe (2016), who concludes that increasing the number of vessels by 1% will lead to 0.76% increase in the production of capture fisheries.

The study result describes that the amount of capture fisheries production does not correlate to the increasing numbers of vessel in fishery entrepreneur. This evident from the increase in capture fisheries production, which is lower than the average number of vessels per fishery entrepreneur. Based on the evaluation by The Ministry of Marine and Fisheries and The Audit Board of Republic Indonesia, the likely causative factors are (1) the vessel owned by the entrepreneur is not appropriate for fishing area, and, hence, it cannot be utilized. (2) The limitation of fuel supply so that the vessel cannot be operated to capture the fish.

The Effect of Fishing Gear

The estimation shows a positive and significant correlation between the number of fishing gear and the amount of the production of capture fisheries with a coefficient of 0.17. It means that if the number of fishing gear increase 1%, ceteris paribus, the amount of capture fisheries production will increase by 0.17%. Lewison (2008) also states that 1% increase in fishing gear will significantly increase the amount of capture fisheries production by about 0.43%. Increase in fishing gear will increase the extent of fishing capture operation, which finally will increase the amount of capture fisheries production.

The study result indicates that the amount of capture fisheries production does not correlate with the number of fishing gear. It can be inferred that the rise in capture fisheries production is lower than the increase in fishing gear. Based on the evaluation that has been conducted by The Ministry of Marine and Fisheries and The Audit Board of

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:07.

Republic Indonesia, the likely reasons for these issues are, for instance, gear specification is not compatible with fishing area condition; hence, it cannot be used directly.

The Effect of Fuel Oil Cost

The estimation shows that the effect of cost of fuel oil to capture fisheries production does not correlate significantly whether it is in the rate 1%, 5%, or 10%. Therefore, the coefficient of fuel oil cost is zero. This is not consistent with Pascoe (2016), who states that 1% increase in fuel oil cost will increase the production of capture fisheries by 0.47%. Moreover, it is also not consistent with the study by Luhur dan Sari (2012), stating that a 1% increase in fuel oil cost will increase the production of capture fisheries by 1.85%.

The study result shows that the cost of fuel oil used by the fishermen does not affect the amount of capture fisheries production. The amount of fuel oil cost is influenced by the distance between the starting port, the area of fishing, and the port/dock. Each vessel has a starting port, fishing area, and port/dock based on Fish Cather License (SIKPI) report on each vessel. The farther it is from the starting port and the dock, the greater the cost of fuel oil incurred. Although in case of greater distance and higher cost, sometimes the amount of fish captured is suboptimal.

By contrast, a fisherman can capture maximum fishes although the catching area is close to the starting port and the cost of fuel oil is cheaper. Therefore, the cost of fuel oil does not affect the production of capture fisheries. Maynou and Guillen (2016) also present similar results, stating that higher fuel oil cost has a significant effect to the extent of fisheries production in the Mediterranean.

CONCLUSION AND SUGGESTION

Based on the study result, the following conclusion may be drawn:

1. Fishing vessel subsidy has a significantly positive effect on the production of capture fisheries. To effective fishing vessel subsidy, the government should (1) distribute fishing vessel subsidy on time, (2) increase the efficiency of the budget for fishing vessel subsidy, (3) increase the security of implementing of fishing vessel subsidy so that there is no misappropriation of the budget, and (4) simplify the process of handling business licensing document of fishing.
2. The number of full-time fishermen has a significantly positive effect on the production of capture fisheries. The government can enact the following policy to (1) simplify the access of capital credit for the fishermen so that they can increase

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:07.

their existing capital, (2) increase fishermen`s skill related to fish capturing, for instance, provide technical training on the operation of large vessels and using modern fishing gear.

3. The average number of vessels owned by fishery entrepreneurs has a significant positive effect on the production of capture fisheries. The government policy can focus on (1) subsidizing fishing vessels based on required specification, and (2) ensuring the supply of fuel oil for fishing operation.

The number of fishing gear has a significant and positive effect on the capture fisheries production. The government can contribute by giving fishing gears based on the required specification

REFERENCES

Ackefors, Hans. 2014. *Global Fisheries, Threats and Opportunities*. Royal Swedish Academy of Agriculture and Forestry.

Armstrong, Claire W. 2016. *A Production Function Analysis of Fisheries and Habitat: Open Access versus Optimal Management. Land Economics*. The Board of Regents of the University of Wisconsin System.

Audit Board of the Republic of Indonesia. 2011. *Report of The Audit with Specific Purposes (PDTT) on Procurement of Goods and Services of Fishery Ship 2010-2012 at The Ministry of Marine Affairs and Fisheries and other Related Institutions*. Audit Board of the Republic of Indonesia.

Audit Board of the Republic of Indonesia. 2017. *Report of the Audit of Financial Statements on the Ministry of Marine Affairs and Fisheries for Fiscal Year 2016.* Audit Board of the Republic of Indonesia.

Kesteven, G. L. 1973. *Manual of Fisheries Science Part 1 – An Introduction To Fisheries Science*. Food and Agriculture Organization of the United Nations (FAO).

Kuriyama, Carlos. 2017. Trade of Fishery Product and Fisheries Subsidies in APEC. *APEC Journal for Policy Support Unit.*

Lewison, Rebbeca L. 2008. *Quantifying Fishing Effort: A Synthesis of Current Methods and Their Applications*. Centre for Fish and Fisheries Research of Australia.

Luhur, Estu Sri. Sari, Yesi Dewita. 2012. Luhur, Estu Sri. Sari, Yesi Dewita. 2012. *Dampak Subsidi Solar Terhadap Keberlanjutan Usaha Perikanan Tangkap di Bitung dan Pelabuhan Ratu*. Balai Besar Penelitian Sosial Ekonomi Kelautan dan Perikanan. [*The Impact of Solar Subsidies on the Sustainability of Capture Fisheries in Bitung and Pelabuhan Ratu*. Center for Marine Socio-Economic and Fisheries Research.]

Maynou, Francesc. Guillen, Jordi. 2016. Increasing Fuel Cost, Decreasing Fish Price and Low Productivity Lead to Poor Economic Performance and Production Reduction in

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:07.

The Fishing Sector: Evidence from The Spanish Mediterranean. *Spain Journal of Fisheries and Aquatic Sciences.*

Miller, G. M. Denzil. Fisheries Management and Good Governance – Global, Regional and National Legislation and Regulation. *Royal Swedish Academy of Agriculture and Forestry*.

Ministry of Marine and Fisheries. 2015. *Basic Data Analysis Ministry of Marine Affairs and Fisheries of 2015.* Statistics and Information Data Center Ministry of Marine and Fisheries.

Pascoe, Sean D. 2016. Modelling Effort Levels in a Sequential Fishery. *ICES Journal of Marine Science*.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:07.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:07.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 5

ANALYSIS OF ASYMMETRIC MONETARY EFFECTS ON REGIONAL INFLATION IN INDONESIA

Alethea Yuwanda and Sugiharso Safuan*
Departement of Economics, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This paper examines asymmetric monetary effects on regional inflation in Indonesia. The asymmetric effect of monetary shock through policy rate on inflation targeting and dynamics of regional inflation will also be discussed in this paper. The regional will be divided into 3 primary regions, namely Sumatera region, Java region, and Kawasan Timur Indonesia (eastern Indonesia) region. Analysis using the SVAR model is used to test whether monetary shocks have an asymmetric response on the level of regional inflation in Indonesia. The results show that among those three main regions, monetary shocks that occured especially in the Sumatra and Eastern Indonesia regions, are responded asymmetrically by the movement of regional inflation. While the Java region provides the longest asymmetry response to the output.

Keywords: asymmetric monetary effects, monetary disturbance, inflation, SVAR model

INTRODUCTION

Neo-Classical and Keynesian theory state that in the long run monetary policy will only affecting the inflation. This is conformable with the theory of neutrality of money

* Corresponding Author's E-mail: sugiharso@ui.ac.id.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:14.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 5

ANALYSIS OF ASYMMETRIC MONETARY EFFECTS ON REGIONAL INFLATION IN INDONESIA

Alethea Yuwanda and Sugiharso Safuan*
Departement of Economics, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This paper examines asymmetric monetary effects on regional inflation in Indonesia. The asymmetric effect of monetary shock through policy rate on inflation targeting and dynamics of regional inflation will also be discussed in this paper. The regional will be divided into 3 primary regions, namely Sumatera region, Java region, and Kawasan Timur Indonesia (eastern Indonesia) region. Analysis using the SVAR model is used to test whether monetary shocks have an asymmetric response on the level of regional inflation in Indonesia. The results show that among those three main regions, monetary shocks that occured especially in the Sumatra and Eastern Indonesia regions, are responded asymmetrically by the movement of regional inflation. While the Java region provides the longest asymmetry response to the output.

Keywords: asymmetric monetary effects, monetary disturbance, inflation, SVAR model

INTRODUCTION

Neo-Classical and Keynesian theory state that in the long run monetary policy will only affecting the inflation. This is conformable with the theory of neutrality of money

* Corresponding Author's E-mail: sugiharso@ui.ac.id.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:22.

which states that in the long run monetary policy will only had effect on inflation. Although in the short run, A. W. H. Phillips (1958) that found the Phillips Curve model argue that the trade-off between inflation and output will always occur on the economy of a country. When the monetary goal is to have a higher output, the inflation rate will also be increased in the moment output rate increasing. But the purpose of effectiveness monetary policy beside higher output is maintaining the stabilization of inflation rate. In the end this trade off lead the basic theory of asymmetric monetary effect.

Monetary policy control is reflected in the effectiveness of monetary policy which depends on how the influence of the monetary policy instruments relate to the real economic variables, such as output and inflation. Many studies such as Caballero and Engel (1992), Ball and Mankiw (1994), Karras and Stokes (1999), find empirical findings between the money supply relationship with inflation and output. In general, the literature concludes that in the long run, there is a perfect relationship between money supply growth and inflation, whereas between inflation and real output growth may be close to zero or almost non-existent (Warjiyo & Juhro, 2016). This is in line with Walsh's (2001) and Chesang & Naraidoo (2016) remarks that in the long term, monetary policy will only have an impact on inflation and little influence on real economic activity. Because of this reason, the Central Bank plays a very critical role in determining the direction of the monetary policy taken.

The movement of the Indonesian economy fluctuates from year to year. Monetary policy as a policy that responds to the movement of economic growth, will have different effects depending on which monetary disturbance is happening in an economy. Blinder (1998) recounts his experience as Vice-Chairman at the Federal Reserve (Central Bank of America) that in many situations the Central Bank tends to avoid further disruption of high inflation rather than high unemployment. Therefore, the purpose of price stabilization is a key priority that will be pursued by the Central Bank. This is reinforced by Willem Frederik Duisenberg (2001) statement, who at the time was the First President of the European Central Bank, stated that the formulation of price stabilization objectives as the top priority in the European Central Bank (ECB) will spearhead other ECB objectives of economic growth.

In line with the statement of Walsh (2001), Chesang & Naraidoo (2016), Blinder (1998), and Duisenberg (2001), through the achievement of prices stabilization, economic growth with the increased of output is expected to be reached. However, to run the price stabilization objectives that suited with the predetermined inflation targets, Central Bank is faced with an inflation-bias problem that arise from the uncertainty of output-inflation trade-off (Chesang & Naraidoo, 2016).

Beside the inflation-bias problem, the effect of monetary policy taken by the Central Bank was responded differently by each region. Altavilla (2002) addresses the problem of different reaction to a single monetary policy of European Central Bank (ECB) across EMU contries. Altavilla (2002) also states that while the effect of a monetary shock on

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:22.

output depends mostly on the regional's output structure, there is a positive response of inflation to a contractionary monetary. Bernanke and Blinder (1992) also suggest that monetary policy react differently across region. The effect will be stronger in countries with small banks and small firms. Carlino & Defina (1998) also examines whether monetary policy scross region in the United States has similar effect. They find the similar result with Bernanke and Blinder (1992).

Therefore in this research, by developing an understanding of Carlino & Defina (1998) and Altavilla (2002) finding, the regional effect difference of monetary policy will be studied. The difference in the stability of the economic growth rate in each region caused the monetary policy taken by the Central Bank has asymmetries response across region. This asymmetries response that further be analyzed based on the dynamics of regional inflation in Indonesia. The classification of the Indonesian region will be divided based on the regional classification by Bank Indonesia through Kajian Ekonomi dan Keuangan Regional (2017). The classification of this regional are, Sumatera, Java, and Kawasan Indonesia Timur (Eastern Indonesia).

LITERATURE REVIEW

According to Karras (2007), asymmetric response is associated with a condition in which: (i) monetary policy expansion can have different effects when compared to monetary policy contraction (known as sign of asymmetry), (ii) large monetary shock has a lower rill effect when compared with the presence of lower monetary shocks (monetary shocks), (iii) monetary policy responds differently to economic expansion or economic recession, or (iv) policy monetary has a greater effect during economic recession than when the economic expansion (known as phase of asymmetry). Different monetary policy responses in the face of expansion or contraction make the degree of policy asymmetric levels high. Degree of this asymmetric level depends on the trend of inflation and the variability of aggregate demand (Ball & Mankiw, 1994; Senda, 2001). But if the inflation rate has exceeded the established limit then the asymmetric degree becomes small. This is because the asymmetric degree has an upper limit, in which if the increase in inflation causes the asymmetric degree to be over the upper limit the resulting asymmetric response becomes smaller (Senda, 2001). Karras (2007) uses data from the 12 OECD Countries for the period 1964-2004 and analyze the effect of money supply shocks on output, investment and consumption levels. The results show that there is an asymmetry response from monetary policy on output, consumption, and investment due to the presence of influence during monetary contraction.

The asymmetric monetary finding also analyzed by Cabarellero and Engel (1992). Using data from 37 countries with low to moderate inflation rates for the period 1960-1982, they found that there is an asymmetric response to output with the expansion and

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:22.

contraction of aggregate demand that will increase in line with the increase in core inflation, and decrease in line with aggregate uncertainty, besides this asymmetric response will also increase when aggregate demand shocks increased (Cabarellero & Engel, 1992). However, according to Morgan (1993), the asymmetric response described by Cabarellero and Engel (1992) occurs in general, not only because of the effects of monetary policy itself, so whether the monetary policy alone giving asymmetric responses remains unexplained. Morgan (1992) used a full sample at the federal funds rate for the period of 1963(2)-1992(2). The result also proved the asymmetric results, where the contraction of monetary policy significantly reduces output on the sample period, whereas the expansion of monetary policy produces an insignificant effect on the output value.

Cover (1992) also found the result that monetary policy has an asymmetric effect of changes in money supply disruption (money-supply shocks) on output. That positive disruption in money supply (positive money-supply shocks) will not affect output, whereas negative money-supply shocks have an effect on output (Cover, 1992; Karras, 1996). So, the reduction of money supply will provide a substantial and significant effect on output, rather than the addition of money supply. With similar result as Cover (1992), Long and Summers (1988) also found asymmetric effect of changes in money supply using broader money supply (M2 and M3) where interference with M2, and M3 may affect output changes. However, estimating the effect of money supply growth on output can give a less precise result because the estimation results will also show the reverse effect of output to money supply (Morgan, 1993). Because of the possibility of dependence between each variable with other variables, the asymmetric influence of monetary policy itself becomes less visible. Therefore, Bernake and Blinder (1992) use policy rates as a reference to measure the response of monetary policy. The results indicate that the policy rate provides sufficient information to know the movements of the macroeconomic real variables in the future, because the policy rate is one of the direct indicators of monetary policy. Policy interest rates as a measure of monetary policy, will affect credit (interest rates on bank loans), and through money supply (Bernanke & Blinder, 1992).

Senda (2001) state that, based on the sticky price theories proposed by Tsiddon (1993), Ball & Mankiw (1994), Morgan (1993) and Cabarellero & Engel (1992), the increase in inflation rates that exceeded certain limits has non-monotonic relation with an asymmetric monetary policy response. When inflation rate stand on the high level, it can reduce the asymmetric level of monetary policy (reduce the degree of asymmetry). The high level asymmetric rate of monetary policy is usually found in countries with high nominal deviation distribution of Gross Dometic Product (GDP) (Senda, 2001). Thus, an increase in inflation will affect the asymmetric level of monetary policy (Ball & Mankiw, 1994; Karras & Stokes, 1999; Senda, 2001). The relationship of the monetary policy instrument to the real variable has its own transmission mechanism path which has an

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:22.

indirect effect on economic growth and inflation. The influence of monetary policy transmission generally occurs with relatively long times, in between 6 to 8 quarters, for the effects of such monetary policy instruments affecting economic growth and inflation (Friedman & Schwartz, 1963; Warjiyo & Juhro, 2016). With the long- lagged gap between the newly used monetary policy on the variable, the forward-looking inflation expectation is the tool that should be used as a reference for future inflation targeting optimism.

Surico (2007) analyzed the optimization problem of Central Bank when the Central Bank's policy preference is asymmetric to output gap and inflation. Using Federal Reserve Bank data for the period of 1960(1)-2003(2), Surico indicates that the Fed gives greater weight in the event of contraction in output during expansion. Asymmetric to this output gives an effect on the bias of 1.5%. Furthermore, Chesang & Naraidoo (2016) analyzed the existence of uncertainty parameters that explain economic current condition to study inflation dynamics when Central Bank monetary policy preference is asymmetric to output. They modeled the uncertainty parameter on the slope of the Phillips curve, in which the slope of the Phillips curve will change with the change of money supply. This uncertainty parameter describes the output-inflation trade-off and provides the results that explain the interaction between the output gap and the volatility of the money supply on inflation dynamics. Chesang & Naraidoo presents empirical results where asymmetric preference used by the Central Bank (the Fed) on output has an important role in assessing the inflation rate. According to them, the Central Bank will further avoid low output levels rather than high output levels despite the impact on the level of inflation. These results are consistent with the expansionary bias hypothesis in the research they were working on.

In Indonesia, Rahmahdian and Warjiyo (2013) detected the asymmetric preference parameter between output gap and monetary policy taken by Bank Indonesia. They used two samples of time periods before the independence of Bank Indonesia (1990(1)-1999(4)) and the period after independence of Bank Indonesia (2000(1)-2009(4)). The change in the independence status of Bank Indonesia, which was previously a dependent Institution became independent, coming into force since the Bank Indonesia Act no. 23 of 1999 was ratified. The granting of independence of the Central Bank may be used to overcome the time inconsistency problem arising from the asymmetric preference between the output gap and the monetary policy used. They use the Central Bank loss function and estimate the parameters with the conditional mean and conditional variance to analyze the output gap behavior in determining the inflation rate in Indonesia.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:22.

Theoretical Framework

According to Chesang & Naraidoo (2016), with uncertainty in the output-inflation trade-off, the aggregate supply curve can be expressed in the equation below

$$Y_t = Y_t^N + \kappa_t(P_t - P_t^e) + u_t\,, \tag{1}$$

with $\kappa_t = \frac{\theta\sigma_{zt}^2}{\sigma_{zt}^2+\sigma_{\varepsilon t}^2}$ and the assumption that $\theta > 0$, which explains the output response to the sudden price changes. Y_t is the observed output, with Y_t^N representing its natural output. P_t^e is the price expectation at time t based on information at time $t-1$. To establish a trade-off between inflation and output, u_t is required to project the shock disturbance. With uncertainty condition σ_{zt}^2 is a variance of relative price and $\sigma_{\varepsilon t}^2$ is a variance of aggregate price shock that occurs.

Equation (1) will cause the slope of the Phillips curve to depend on the relative and aggregate price shock, denoted by equation (1) is κ_t. In other words, κ_t explain the variance of the shock price that occurred. The Phillips curve equation can be derived from (1) as follows,

$$\begin{aligned} \leftrightarrow Y_t - Y_t^N &= \kappa_t(P_t - P_t^e - P_{t-1} + P_{t-1}) + u_t \\ \leftrightarrow Y_t - Y_t^N &= \kappa_t((P_t - P_{t-1}) - (P_t^e - P_{t-1})) + u_t \\ \leftrightarrow y_t &= \kappa_t(\pi_t - \pi_t^e) + u_t, \end{aligned} \tag{2}$$

Lucas (1973) hypothesized that the fluctuation period in aggregate demand is associated with the firm's production capability in generating output (aggregate output). When the fluctuation period in aggregate demand is low, it means that the aggregate output produced by the company is high. This will have a small effect on inflation, through a flatter flat aggregate supply curve. Lucas (1973) mentions that a country with a flat-leaning Phillips curve generally places its monetary purpose on price stability (monetary). In other words, when there is movement in high aggregate demand, aggregate supply will become steeper which will affect the movement of inflation. In equation (2) with the variance in shock (κ_t) depending on time, trade-offs on inflation and output are also shaped based on price expectations in the past. The private sector behavior in equation (2) is called an expectations-augmented Phillips curve.

According to Surico (2007) economic evolution can be expressed through (3) and (4)

$$\pi_t = \theta E_t\pi_{t+1} + ky_t + \varepsilon_t^s, \tag{3}$$

$$y_t = E_t y_{t+1} - \varphi(i_t - E_t\pi_{t+1}) + \varepsilon_t^d. \tag{4}$$

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:22.

Equation uses the Calvo model whereby each firm will adjust the price, in which higher inflation expectations in the future ($E_t\pi_{t+1}$) will increase the price adjustment that affect the current inflation rate (π_t). The output gap denoted by y_t reflects the marginal cost movement and corelated with the current excess demand. To simplify the analysis, Surico (2007) assume that aggregate supply is forward looking, where this assumption is in accordance with the assumptions used by Gali & Gertler (1999), Gali et al. (2003) and Wounters (2003) in explaining the dynamics of inflation in the US (United States).

Equation is the standard Euler equation for consumption under market clearing conditions. Equation describes consumption in the form of aggregate demand by assuming the value of output gap in the next period ($E_t y_{t+1}$) is positive, and the real interest rate ($i_t - E_t\pi_{t+1}$) is negative. ε_t^s and ε_t^d are residuals on supply and demand.

Asymmetric Preference of Central Bank

Asymmetric central bank preference describes the difference of decision (asymmetry) that Central Bank takes when facing recession or economic boom or in response to positive and negative deviations on output and target inflation (Rahmahdian and Warjiyo, 2013). This asymmetric monetary policy preference is described by Surico (2007), through the Central Bank's loss function equation i.e.,

$$L_t = \frac{\left[\exp\left(\alpha(\pi_t - \pi^*)\right)\right] - \alpha(\pi_t - \pi^*) - 1}{\alpha^2} + \lambda\left[\frac{\exp(\gamma y_t) - \gamma y_t - 1}{\gamma^2}\right] + \frac{\mu}{2}(i_t - i^*)^2, \tag{5}$$

With the definition of the variables in equation (5) are:

L_t : Central Bank's loss function;
π_t : actual inflation;
π^* : inflation target;
y_t : output gap (the actual output deviation from its potential output);
λ : the relative weight of monetary policy towards the fluctuations around output potential (output gap);
μ : the relative weight of monetary policy on market interest rate fluctuations around the policy interest that being used;
γ : parameters of monetary policy preference for output gap;
α : parameters of monetary policy preference for inflation;

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:22.

i^* : Central Bank policy target rate; and

i_t : actual interest rate.

Equation in equation (5) is an exponential linear function (linex), with parameters λ and μ is some parameters determining in which policy weight (between output and policy rate) to be taking into consideration for the impact of the losses that will be faced in the future. Parameters α and γ are parameters that capture the asymmetric preference of monetary policy by the Central Bank.

When $\gamma < 0$ the output contraction relative to the potential level will have greater weight when compared to the output expansion. This is because when the output contraction is marked by the value of $y_t < 0$, the exponential function of (5) will dominate. In other words, when a contraction in the output gap and monetary policy preference lies in the negative preference of the output gap, the central bank's loss function will increase exponentially. However, when the expansion of output occurred, the weight will be small because the central bank's loss function only increases linearly. This also occurs in the parameter of preference for inflation (α). When the Central Bank monitors its monetary policy in overshooting inflation target condition, compared to the undershooting inflation target condition, it will only cause the Central Bank's loss function to increase exponentially. In other words, the inflation rate relative to the high inflation target causes the Central Bank's loss function to be exponentially expensed.

Determination of monetary policy taken by the Central Bank conducted before the disturbance in the economy occurs, meaning that the variables that are on the system has not had its deterministic value (Surico, 2007). When the Central Bank determines the policy interest target for a period t, using the information in period $t-1$, the Central Bank will optimize the determination of the new policy interest rate (period t) through the Central Bank's loss function in equation (5). And the Central Bank optimization model can be written that is,

$$\min_{\{i_t\}} E_{t-1} \sum_{\tau=0}^{\infty} \delta^{\tau} L_{t+\tau}. \tag{6}$$

with δ is a discount factor, equation (6) is the optimization of loss function based on intemporal conditions. Using the assumption that optimal monetary policy takes place under discretion conditions (Surico, 2007), the optimization of equations (5) and (6) to minimize the interest rate (i_t) can be written to,

$$E_{t-1}\left(\frac{\left[\exp\left(\alpha(\pi_t-\pi^*)\right)\right]-\alpha(\pi_t-\pi^*)-1}{\alpha^2}\right)+\lambda E_{t-1}\left[\frac{\exp(\gamma y_t)-\gamma y_t-1}{\gamma^2}\right] + \frac{\mu}{2}(i_t-i^*)^2+F_t \tag{7}$$

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:22.

being subject to, $\pi_t = ky_t + f_t$ and $y_t = -\varphi i_t + g$.

with $F_t \equiv E_{t-1}\sum_{\tau=1}^{\infty}\delta^{\tau}L_{\tau+t}$, $f_t \equiv \theta E_t\pi_{t+1} + \varepsilon_t^s$ and $g_t \equiv E_t y_{t+1} + \varphi E_t\pi_{t+1} + \varepsilon_t^d$ used to complete the assumption that Cantral Bank cannot directly manipulated economic agent's expectation (Surico, 2007).

The deviation of equation (7) can be written as

$$-E_{t-1}\left(\frac{\left[\exp\left(\alpha(\pi_t - \pi^*)\right)\right] - 1}{\alpha}\right)k\varphi - E_{t-1}\left[\frac{\exp(\gamma y_t) - 1}{\gamma}\right]\lambda\varphi + \mu(i_t - i^*) = 0 \tag{8}$$

Equation (8) explains the Central Bank's nonlinear response to the economy optimally. When α and γ go to the value 0, or in other words the preference of the Central Bank is symetric, then equation (8) will only explain the interest rate function implicitly (Taylor, 1993; Rudebusch 2002; Clarida et al. 2000) which can be written through equation

$$-k\varphi E_{t-1}(\pi_t - \pi^*) - \lambda\varphi E_{t-1}(y_t) + \mu(i_t - i^*) = 0. \tag{9}$$

The α and γ parameters are important for analyzing the optimization of monetary policy, since the α and γ parameters not only explain the asymmetric preference of monetary policy but also explain the non-linear function of the Central Bank to a linear function as in . So, the hypothesis of monetary policy asymmetry preference can be analyzed when parameter value α and γ toward 0 is not significant.

Based on those empirical metodh, research hypothesis that will be conducted in this paper is whether the monetary policy preference of Bank Indonesia is asymmetric to the regional output and regional inflation

EMPIRICAL METHOD

Method

Structural Vector Autoregesive Model (SVAR) is used to estimate the monetary disturbance. Based on the finding of Carlino & Defina (1998) and Altavilla (2002), model SVAR can be written as,

$$\boldsymbol{AX_t} = \boldsymbol{C(L)X_{t-1}} + \boldsymbol{\varepsilon_t} \tag{10}$$

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:22.

with $\boldsymbol{X_t'} = [d(ln\,Y_t),\ d(INF_t),\ d(SBI_t),\ d(ln\,KURS_t),\ d(ln\,ORA_t),\ d(ln\,PPI_t)]$, $\boldsymbol{A}$ is $6\,x\,6$ matrix, $C(L)$ is polynomial matrix (on *operation lag*) and $\boldsymbol{\varepsilon_t} = [\varepsilon_t^{d(ln(y))}, \varepsilon_t^{d(INF)}, \varepsilon_t^{d(SBI)}, \varepsilon_t^{d(ln(KURS))}, \varepsilon_t^{d(ln(ORA))}, \varepsilon_t^{d(ln(PPI))}]$ is a vector on structural disturbance.

Definition of variable on equation is:

$d(\ln Y_t)$,	: real GDP;
$d(INF_t)$	: actual inflation;
$d(\ln PPI_t)$	: Producer Price Index (PPI);
$d(SBI_t)$	: policy interest rate.
$d(\ln ORA_t)$	: Official Reserve Asset; and
$d(\ln KURS_t)$	: Foreign exchange middle rates USD to IDR.

The reduced form of equation will be formed, that is

$$\boldsymbol{A^{-1}AX_t = A^{-1}C(L)X_{t-1} + A^{-1}\varepsilon_t}$$
$$\boldsymbol{\leftrightarrow X_t = B(L)X_{t-1} + e_t} \quad (11)$$

with $\boldsymbol{B(L) = A^{-1}C(L)}$ and $\boldsymbol{e_t = A^{-1}\varepsilon_t}$. This estimation will yield residual estimation $\boldsymbol{e_t}$ that will form a relationship $\boldsymbol{\varepsilon_t = Ae_t}$ which describes the structural disturbance. So the estimated disturbance on monetary policy can be calculated as $\widehat{\boldsymbol{\varepsilon_t^{d(SBI)}}} = \widehat{\boldsymbol{A_3}}\widehat{\boldsymbol{e_t}}$, where $\widehat{\boldsymbol{A_s}}$ is the estimation of the fourth-row component of the matrix $\boldsymbol{A}$ and $\widehat{\boldsymbol{e_t}}$ is the residual vector estimation on the VAR model.

Matrix $\boldsymbol{A}$ is assumed to follow a recursive form. Matrix $\boldsymbol{A}$ can later be written as follows,

$$\boldsymbol{A} = \begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 \\ a_{21} & 1 & 0 & 0 & 0 & 0 \\ a_{31} & a_{32} & 1 & 0 & 0 & 0 \\ a_{41} & a_{42} & a_{43} & 1 & 0 & 0 \\ a_{51} & a_{52} & a_{53} & a_{54} & 1 & 0 \\ a_{61} & a_{62} & a_{63} & a_{64} & a_{65} & 1 \end{bmatrix} \quad (12)$$

where matrix $\boldsymbol{A}$ is called *Cholesky decomposition matrix*. Hence, the structural disturbance on SBI, $\varepsilon_t^{d(SBI)}$ can be interpreted as a monetary policy shock to the policy interest rate. The SVAR model set some restrictions based on the theoretical consideration to help solves the identification problem. The SVAR model restriction begins by forming a matrix,

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:22.

$$\boldsymbol{Ae} = \boldsymbol{B\varepsilon}$$

$$\begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 \\ a_{21} & 1 & 0 & 0 & 0 & 0 \\ a_{31} & a_{32} & 1 & 0 & 0 & 0 \\ a_{41} & a_{42} & a_{43} & 1 & 0 & 0 \\ a_{51} & a_{52} & a_{53} & a_{54} & 1 & 0 \\ a_{61} & a_{62} & a_{63} & a_{64} & a_{65} & 1 \end{bmatrix} \begin{bmatrix} e_t^{d(\ln Y)} \\ e_t^{d(INF)} \\ e_t^{d(SBI)} \\ e_t^{d(\ln ORA)} \\ e_t^{d(\ln KURS)} \\ e_t^{d(\ln PPI)} \end{bmatrix} \quad (13)$$

$$= \begin{bmatrix} b_{11} & 0 & 0 & 0 & 0 & 0 \\ 0 & b_{22} & 0 & 0 & 0 & 0 \\ 0 & 0 & b_{33} & 0 & 0 & 0 \\ 0 & 0 & 0 & b_{44} & 0 & 0 \\ 0 & 0 & 0 & 0 & b_{55} & 0 \\ 0 & 0 & 0 & 0 & 0 & b_{66} \end{bmatrix} \begin{bmatrix} \varepsilon_t^{d(\ln Y)} \\ \varepsilon_t^{d(INF)} \\ \varepsilon_t^{d(SBI)} \\ \varepsilon_t^{d(\ln ORA)} \\ \varepsilon_t^{d(\ln KURS)} \\ \varepsilon_t^{d(\ln PPI)} \end{bmatrix}$$

with $\boldsymbol{E}(\boldsymbol{\varepsilon\varepsilon}') = \boldsymbol{I}$. The result is divided into 3, which is for Sumatera Region as (A) Area, Java Region as (B) Area, and Western Indonesia as (C) Area

Data

Details of the data used are listed in Table 1.

Table 1. Research Data used

No	Variable	Variable Name	Type of Data	Source	Available Period of Data
1	Aggregate Inflation	(INF)	Monthly	BPS	1979 to 2017
2	Regional Inflation (82 Cities)	(INFKA) (INFKB) (INFKC)	Monthly	BPS	1979 to 2017
3	Policy Interest Rate : - SBI Rate - BI Rate	(SBI)	Monthly	SEKI BI	2000 to 2005Q2 2005Q3 to 2017
4	Aggregate GDP	(PDB)	Quarterly	SEKI BI	2000 to 2017
5	Gross Regional Product (GRP)	(PDRBKA) (PDRBKB) (PDRBKC)	Quarterly	BPS	2000 to 2017
6	Official Reserve Asset	(ORA)	Quarterly	SEKI BI	2001 to 2017
7	Producer Price Index (PPI)	(PPI)	Monthly	SEKI BI	1997 to 2017
8	Foreign Exchange Rates	(KURS)	Monthly	SEKI BI	2000 to 2017

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:22.

To help with data analysis, in this paper the software to be used is E-views 9.

EMPIRICAL RESULT

Stationary and Stability of the Model

The test result using E-views 9 shows that the data is stationary in the first difference. We conclude the Augmented Dickey Fuller test, Phillips-Perron Test and Lag Length based on Schwarz Info Criterion (SIC) test. The results can be seen in Table 22 below,

Table 2. ADF test, PP test and Lag Length based on SIC on First Difference

Variables	Description	ADF		PP		Lag Length (SIC)
		t-Statistic	Prob.*	t-Statistic	Prob.*	
$d(\ln PDB)$	Aggregate Growth	−3.432916	0.0131	−19.602	0.0001	3
$d(\ln PDRBKA)$	Sumatera Regional Growth	−9.669291	0.0000	−12.3287	0.0001	1
$d(\ln PDRBKB)$	Java Regional Growth	−9.948637	0.0001	−18.9351	0.0001	1
$d(\ln PDRBKC)$	Eastern Indonesia Growth	−8.035097	0.0000	−13.9294	0.0001	2
$d(INF)$	Aggregate Inflation	−8.379376	0.0000	−8.29589	0.0000	0
$d(INFKA)$	Sumatera Regional Inflation	−8.359761	0.0000	−8.3017	0.0000	0
$d(INFKB)$	Java Regional Inflation	−8.420125	0.0000	−8.34374	0.0000	0
$d(INFKC)$	Eastern Indonesia Inflation	−8.41287	0.0000	−8.33079	0.0000	0
$d(\ln KURS)$	Foreign Exchange	−8.744423	0.0000	−8.78097	0.0000	0
$d(\ln ORA)$	Official Reserved Asset	−5.432124	0.0000	−5.57011	0.0000	0
$d(\ln PPI)$	Producer Price Index	−6.182637	0.0000	−7.19879	0.0000	0

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:22.

Result for Sumatera Region as (A) Area

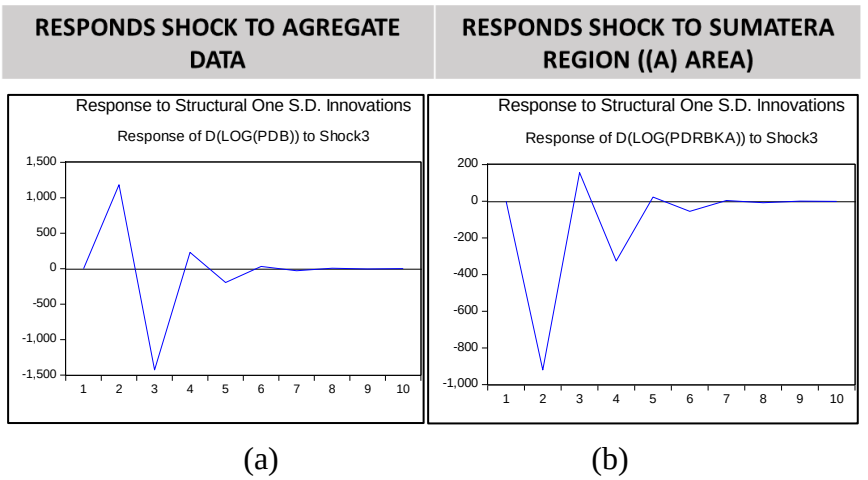


Figure 1. Impulse Response Result for Sumatera Area, (a) Responds Monetary Shock to GDP; (b) Responds Monetary Shock to Regional GDP (GRP) for Sumatera

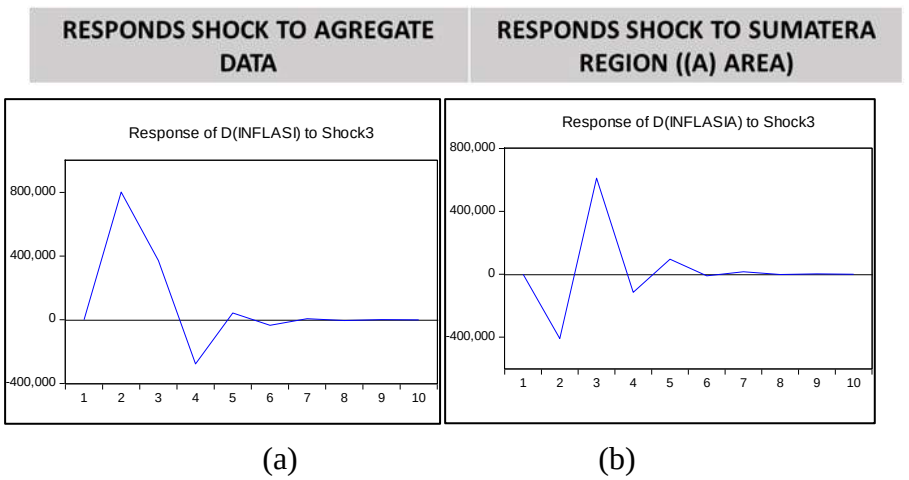


Figure 2. Impulse Response Result for Sumatera Area, (a) Responds Monetary Shock to Aggregate Inflation; (b) Responds Monetary Shock to Regional Inflation for Sumatera

From Figures 1 and 2 we know that, asymmetric effect occurs on the economic growth in Sumatera (GRP), Figure 1(a) and 2(a) and gives us a result for aggregate GDP with impulse variables $a_{21} = -14.18; a_{31} = 63.09; a_{32} = -4850.49$. From matrix A on equation we can see that a_{21} is an impulse response function of aggregate growth (GDP) to inflation (INF), a_{31} is an impulse response function of aggregate growth (GDP) to policy rate (SBI), a_{32} is an impulse response function of aggregate inflation (INF) to policy rate (SBI).

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:22.

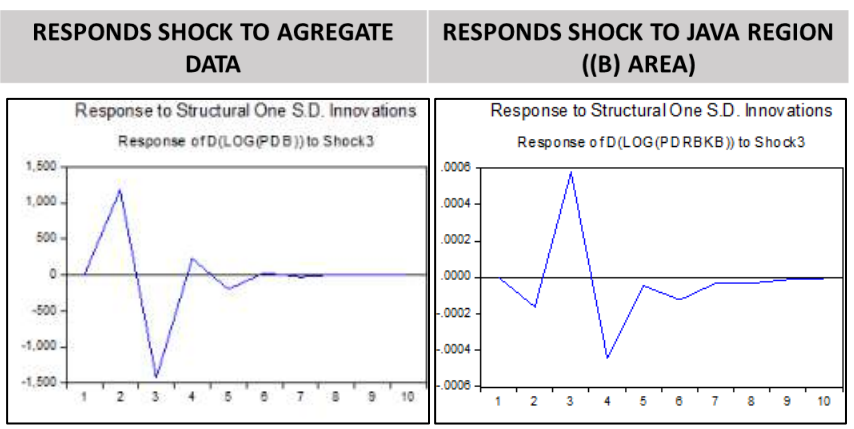
Hence, for the Figures 1(b) and 2(b) and gives us a result of regional GDP (PDRBKA) for Sumatera Region with impulse variables $a_{21} = 0.4296$; $a_{31} = 54.459$; $a_{32} = -6560.631$. With definition variable based on equation , a_{21} is an impulse response function of regional growth for Sumatera region (PDRBKA) to regional inflation (INFKA), a_{31} is an impulse response function of regional growth for Sumatera region (PDRBKA) to policy rate (SBI), a_{32} is an impulse response function of regional inflation (INFKA) to policy rate (SBI).

With this result in Table 3 we can see that the asymmetric effect occurred on both of regional growth for Sumatera region and regional inflation based on the comparison of a_{21} value between aggregate growth and Sumatera regional growth. The regional shock from Figure 1(b) last until period 7, and for the regional inflation from Figure 2(b) the shock last until period 6.

Table 3. Impulse Response Variable Value for Sumatera Area

Impulse Variable	Aggregate Shock Value	Regional Shock Value
a_{21}	-14.18	0.4296
a_{31}	63.09	54.459
a_{32}	-4850.49	-6560.631

Result for Java Region as (B) Area



(a) (b)

Figure 3. Impulse Response Result for Java Area, (a) Responds Monetary Shock to GDP; (b) Responds Monetary Shock to Regional GDP (GRP) for Java

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:22.

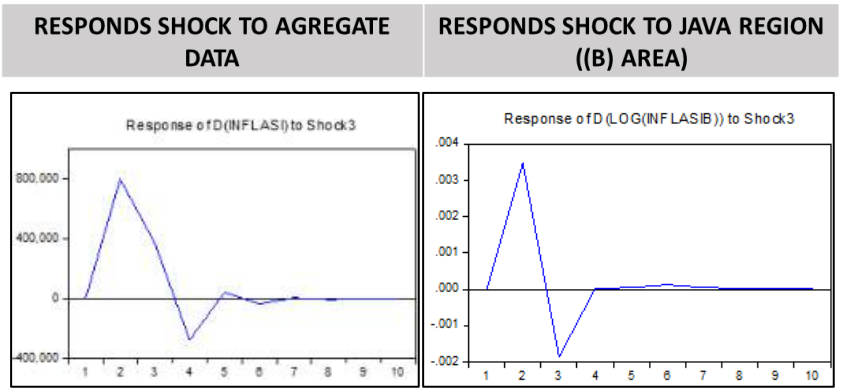


Figure 4. 0 Impulse Response Result for Java Area, (a) Responds Monetary Shock to Aggregate Inflation; (b) Responds Monetary Shock to Regional Inflation for Java

From Figures 3 and 4 we know that, asymmetric effect occurs on the economic growth in Java (GRP), Figure 3(a) and Figure 4. 0(a) and gives us a result for aggregate GDP with impulse variables $a_{21} = -14.18; a_{31} = 63.09;$ $a_{32} = -4850.49$. From matrix A on equation we can see that a_{21} is an impulse response function of aggregate growth (GDP) to inflation (INF), a_{31} is an impulse response function of aggregate growth (GDP) to policy rate (SBI), a_{32} is an impulse response function of aggregate inflation (INF) to policy rate (SBI).

Hence, for the Figure 3(b) and Figure 4(b) gives us a result of regional GDP (PDRBKB) for Java Region with impulse variables a_{21} = -0.0483; a_{31} = -5.2559; a_{32} = 0.8302. With definition variable based on equation , a_{21} is an impulse response function of regional growth for Java region (PDRBKB) to regional inflation (INFKB), a_{31} is an impulse response function of regional growth for Java region (PDRBKB) to policy rate (SBI), a_{32} is an impulse response function of regional inflation (INFKB) to policy rate (SBI).

With this result in Table 4. 0 we can see that the asymmetric effect occurred only on the regional growth for Java region based on the comparison of a_{31} and a_{32} value between aggregate growth and Java regional growth. For the regional inflation, there is no asymmetric effect that occur on Java region. If we see the result on Sumatera Region, Java and Western Indonesia, we can see that from Figure 3(b) the longest shock happens in Java Area (with shock period still occurs until period 9). This result is consistent with the knowledge that Java region is the primary driver of the aggregate economic and aggregate inflation movement in Indonesia.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:22.

Table 4. 0 Impulse Response Variable Value for Java Area

Impulse Variable	Aggregate Shock Value	Regional Shock Value
a_{21}	-14.18	-0.0483
a_{31}	63.09	-5.2559
a_{32}	-4850.49	0.8302

Result for Eastern Indonesia Region as (C) Area

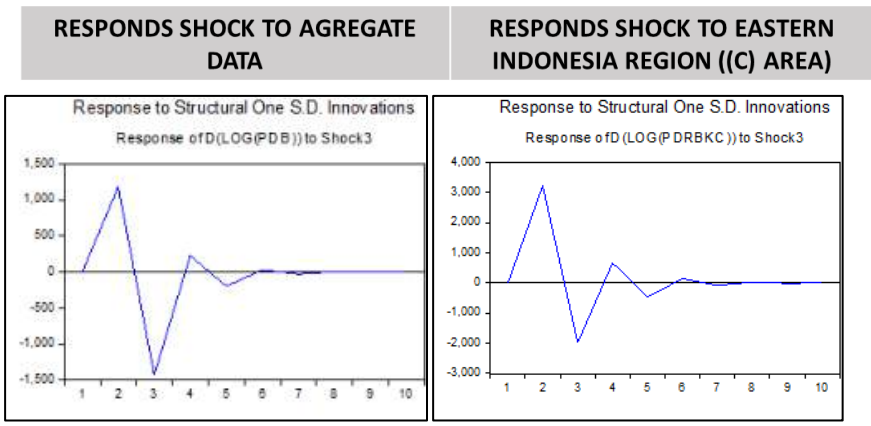


Figure 5. Impulse Response Result for Eastern Indonesia Area, (a) Responds Monetary Shock to GDP; (b) Responds Monetary Shock to Regional GDP (GRP) for Eastern Indonesia

From Figures 5 and 6 we know that, asymmetric effect occurs on the economic growth in Eastern Indonesia (GRP), Figures 5(a) and 6(a) and gives us a result for aggregate GDP with impulse variables $a_{21} = -14.18; a_{31} = 63.09; a_{32} = -4850.49$. From matrix A on equation we can see that a_{21} is an impulse response function of aggregate growth (GDP) to inflation (INF), a_{31} is an impulse response function of aggregate growth (GDP) to policy rate (SBI), a_{32} is an impulse response function of aggregate inflation (INF) to policy rate (SBI).

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:22.

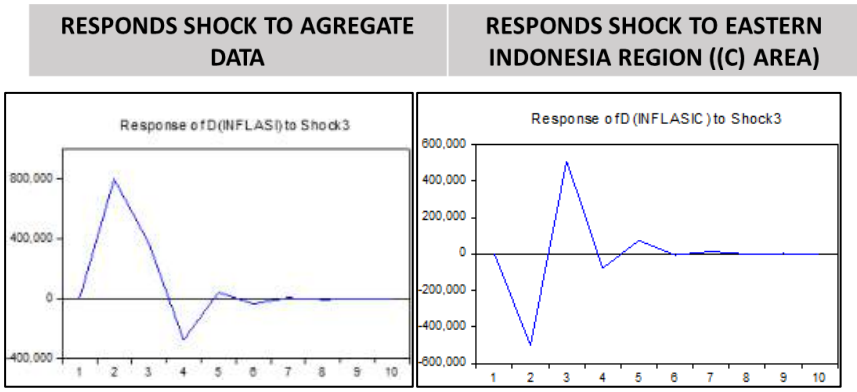


Figure 6. Impulse Response Result for Eastern Indonesia Area, (a) Responds Monetary Shock to Aggregate Inflation; (b) Responds Monetary Shock to Regional Inflation for Eastern Indonesia

Hence, for the Figures 5(b) and 6(b) gives us a result of regional GDP (PDRBKC) for Eastern Indonesia region with impulse variables $a_{21} = 3.392$; $a_{31} = 82.932$; $a_{32} =$ -6405.15. With definition variable based on equation , a_{21} is an impulse response function of regional growth for Eastern Indonesia region (PDRBKC) to regional inflation (INFKC), a_{31} is an impulse response function of regional growth for Eastern Indonesia region (PDRBKC) to policy rate (SBI), a_{32} is an impulse response function of regional inflation (INFKC) to policy rate (SBI).

With this result in Table 5 for Eastern Indonesia region we can see that the asymmetric effect occurred only on the regional inflation based on the comparison of a_{21} value between aggregate growth and Eastern Indonesia regional growth. The shock based on the Figure 6(b) last until period 6. For the regional growth, there is no asymmetric effect that occur on Eastern Indonesia region.

Table 5. Impulse Response Variable Value for Eastern Indonesia Area

Impulse Variable	Aggregate Shock Value	Regional Shock Value
a_{21}	-14.18	3.392
a_{31}	63.09	82.932
a_{32}	-4850.49	-6405.15

CONCLUSION

Using the SVAR model we can show that the monetary policy preference of Bank Indonesia is asymmetric to the regional output and regional inflation. On the Sumatera region the asymmetric effect occurs both on the regional growth and regional inflation

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:22.

rate. On the Java region the asymmetric effect only occurs on regional growth rate, with the longest shock happens in Java area that last through until period 9. And for the Eastern Indonesia region, the asymmetric effect occurs only in regional inflation rate.

Table 6. The Asymmetric Result for the SVAR model

	Sumatera Region	**Java Region**	**Eastern Indonesia Region**
Asymmetric effect to Regional Growth	Yes	Yes	-
Asymmetric effect to Regional Inflation	Yes	-	Yes

ACKNOWLEDGMENTS

We thank all reviewers for their comments and suggestions. This research is funded by University of Indonesia from PITTA research grant scheme, 2018.

REFERENCES

Altavilla, C. (2002). Measuring Monetary Policy Asymmetries Across Emu Countries. *Rivista Internazionale di Scienze Sociali, 110,* 3–30. [*International Journal of Social Sciences*]

Ball, L., & Mankiw, N. G. (1994). Asymmetric Price Adjustment and Economic Fluctuations. *Economic Journal, 104,* 247–61.

Bank Indonesia. (2017). Laporan Nusantara [Regional Report]. *Regional Economic and Financial Studies, 12(4),* 1-119.

Bernanke, B. S., & Blinder, A. S. (1992). The Federal Funds Rate and the Channels of Monetary Transmission. *The American Economic Review, 82*(4), 901–921.

Blinder, A. (1998). Central Banking in Theory and Practice. *MIT Press, Cambridge, MA.*

Brainard, W. (1967). Uncertainty and the Effectiveness of Policy. *American Economic Review 57,* 411-425.

Caballero, R. J., & Engel, E. M. R. A. (1992). Price Rigidities, Asymmetries, and Output Fluctation. *National Bureau of Economic Research Working Paper, 4091.*

Calvo, G. A. (1983). Staggered prices in a utility-maximizing framework. J. Monet. Econ. 12, 383–398.

Chesang, L. K., & Naraidoo, R. (2016). Parameter uncertainty and inflation dynamics in a model with asymmetric central bank preferences. *Economic Modelling, 56,* 1–10. https://doi.org/10.1016/j.econmod.2016.03.004

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:22.

Cover, J. P. (1992). Asymmetric Effects of Positive and Negative Money-Supply. *The Quarterly Journal of Economics*, *107*(4), 1261–1282.

Defina, R., & Carlino, G. (1998). The Differential Regional Effect of Monetary Policy. *The Review of Economics and Statistics*, *180*, 572–587.

Doyle, M., & Falk, B. (2010). Do asymmetric central bank preferences help explain observed inflation outcomes. *J. Macroecon. 32*, 527–540.

Duisenberg, W. F. (2001). *Introductory Statement to the Press Conference on 8 November*.

Erosa, A., & Ventura, G. (2002). On inflation as a regressive consumption tax. *Journal of Monetary Economics 49*, 761–795.

Friedman, M. (1968). The role of Monetary policy. *The American Economic Review*, *58*(March), 269–295. https://doi.org/10.1126/science.151.3712.867-a

Friedman, B. M., & Schwartz, A. (1963). *A Monetary History of The United States, 1867-1960*. Princenton University Press.

Gali, J., Gertler, M. (1999). Inflation dynamics: a structural econometric analysis. *Journal of Monetary Economics*, *44*, 195–222.

Gali, J., Gertler, M., López-Salido, J.D. (2001). European inflation dynamics. *Eur. Econ. Rev. 45* (3), 1270–1273.

Gali, J., Gertler, M., López-Salido, J.D. (2005). Robustness of the estimates of the hybrid New Keynesian Phillips Curve. *Journal of Moneter Economics*, *52*, 1107–1118.

Gordon, D. B., & Barro, R. J. (1983). A Positive Theory of Monetary Policy in a Natural Rate Model. *Journal of Political Economy*, *91*(4), 589–610

Hansen, A. H. (1941). *Fiscal Policy and Business Cycles*. New York: W. W. Norton and Company.

Hayford, M. D. (2006). Asymmetric Effects of Monetary Policy Shocks. *The Journal of Economic Asymmetries*, *3*(1), 59–86. https://doi.org/10.1016/j.jeca.2006.01.004

Kahneman, D., & Tversky, A. (1979). Prospect theory: an analysis of decision under risk. *Econometrica 47*, 263–292.

Karras, G., & Stokes, H. H. (1999). Why are the effects of money-supply shocks asymmetric? Evidence from prices, consumption, and investment. *Journal of Macroeconomics*, 21(4), 713–727. https://doi.org/10.1016/S0164-0704(99)80003-2

Karras, G. (1996). Why are the effects of money-supply shocks asymmetric? convex aggregate supply or "pushing on a string"? *Journal of Macroeconomics*, 18(4), 605–619. https://doi.org/10.1016/S0164-0704(96)80054-1

Karras, G. (2007). What Causes The Asymmetric Effects Of Monetary Policy: Size or Sign of Money-Supply Shocks? *The Journal of Economic Asymmetries*, 4(1), 57–72. https://doi.org/10.1016/j.jeca.2007.01.004

Karras, G., & Stokes, H. H. (1999). Why are the effects of money-supply shocks asymmetric? Evidence from prices, consumption, and investment. *Journal of Macroeconomics*, 21(4), 713–727. https://doi.org/10.1016/S0164-0704(99)80003-2

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:22.

Keynes, J. M. (1936). *The General Theory of Employment Interest and Money*. New York: Hancourt, Brance, and Company

Komlan, F. (2013). The asymmetric reaction of monetary policy to inflation and the output gap: Evidence from Canada. *Economic Modelling*, *30*(1), 911–923. https://doi.org/10.1016/j.econmod.2012.09.046

Long, J. De, & Summers, L. (1988). How does macroeconomic policy affect output? *Brookings Papers on Economic Activity*, 2(March 1960), 433–494. https://doi.org/10.2307/2534535

Morgan, D. P. (1993). Asymmetric effects of monetary policy. *Federal Reserve Bank Of Kansas City Economic Review*, *78*, 20–33.

Phillips, A.W. (1958). The relation between unemployment and the rate of change of money wage rates in the United Kingdom, 1861–1957. *Economica New Series, 25*, 283–299.

Qu, Z. (2008). Testing for structural change in regression quantiles. *J. Econ. 146* (1), 170–184.

Rhee, W., & Rich, R. W. (1995). Inflation and the asymmetric effects of money on output fluctuations. *Journal of Macroeconomics, 17(4*), 683–702. https://doi.org/10.1016/0164-0704(95)80089-1

Rahmahdian, R., & Warjiyo, P. (2013). Mengukur *Time Inconsistency* Kebijakan Moneter di Indonesia. [Measuring the Time Inconsistency of Monetary Policy in Indonesia]. *Bulletin of Monetary Economics and Banking, 15(4),* 335–366.

Roosa, R. V. (1951). Interest Rates and The Central Bank. *Money, Trade & Economic Growth Essays in Honor of John Henry Williams*. New York: The Macmillan Company

Senda, T. (2001). Asymmetric Effects of Money Supply Shocks and Trend Inflation. *Journal of Money, Credit and Banking*, *33*(1), 65–89. Retrieved from http://www.jstor.org/stable/2673872

Surico, P. (2007). The Fed's monetary policy rule and U.S. inflation: The case of asymmetric preferences. *Journal of Economic Dynamics and Control*, *31*(1), 305–324. https://doi.org/10.1016/j.jedc.2005.11.001

Surico, P. (2008). Measuring the time inconsistency of US monetary policy. *Economica*, 75(297), 22–38.

Sweidan, O. D. (2009). Asymmetric central bank's preference and inflation rate in Jordan. *Stud. Econ. Financ. 26,* 232–245.

Tsiddon, Daniel. (1993). The (Mis) Behavior of the Aggregate Price Level. *Review of Economic Studies. 60,* 889–902.

Warjiyo, P., & Juhro, S. (2016). *Kebijakan Bank Sentral: Teori dan Praktik.* [Central Bank Policy: Theory and Practice]. Jakarta: PT Rajagrafindo Persada.

Walsh, C. E. (2010). *Monetary Policy and Theory*. The MIT Press, 3th Edition.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:22.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 6

IMPACT OF IMPLEMENTATION OF FOOD SAFETY STANDARDS ON IMPORTS: ANALYSIS OF INDONESIAN SPS POLICY

Sulastri [*] ***and Mahjus Ekananda***
Department of Economics, Universitas Indonesia, Depok, Indonesia

ABSTRACT

Standards of safety and health for food and agricultural product have become a major problem in many countries. The world trade agreement on Sanitary and Phytosanitary (SPS) measures enable countries to impose their own rules leading to diverse standards around the world. Studies on safety and health standards of food and agricultural products have generally employed a specific SPS measure namely maximum residue limits (MRL) in pesticide for a particular commodity, and most studies focus only on the aggregate impact of SPS policy on trade. This research uses an inventory approach using coverage ratio (CR) from SPS Indonesia policy toward food product import and sees the disaggregate effect difference to exporting countries. In aggregate, CR of the SPS Indonesia policy has a negative and significant impact on imports of food and agricultural products. However, the impact differs between exporting countries grouped by their income. Developed countries tend to benefit from the enactment of SPS policies in Indonesia, which are shown with positive and significant impacts, while CR for developing countries has a negative and significant impact.

Keywords: food safety, sanitary and phytosanitary measures, non-tariff measures, food and agricultural imports, coverage ratio

[*] Corresponding Author's E-mail: lastri21@yahoo.com.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:36:29.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 6

IMPACT OF IMPLEMENTATION OF FOOD SAFETY STANDARDS ON IMPORTS: ANALYSIS OF INDONESIAN SPS POLICY

Sulastri [*] ***and Mahjus Ekananda***
Department of Economics, Universitas Indonesia, Depok, Indonesia

ABSTRACT

Standards of safety and health for food and agricultural product have become a major problem in many countries. The world trade agreement on Sanitary and Phytosanitary (SPS) measures enable countries to impose their own rules leading to diverse standards around the world. Studies on safety and health standards of food and agricultural products have generally employed a specific SPS measure namely maximum residue limits (MRL) in pesticide for a particular commodity, and most studies focus only on the aggregate impact of SPS policy on trade. This research uses an inventory approach using coverage ratio (CR) from SPS Indonesia policy toward food product import and sees the disaggregate effect difference to exporting countries. In aggregate, CR of the SPS Indonesia policy has a negative and significant impact on imports of food and agricultural products. However, the impact differs between exporting countries grouped by their income. Developed countries tend to benefit from the enactment of SPS policies in Indonesia, which are shown with positive and significant impacts, while CR for developing countries has a negative and significant impact.

Keywords: food safety, sanitary and phytosanitary measures, non-tariff measures, food and agricultural imports, coverage ratio

[*] Corresponding Author's E-mail: lastri21@yahoo.com.

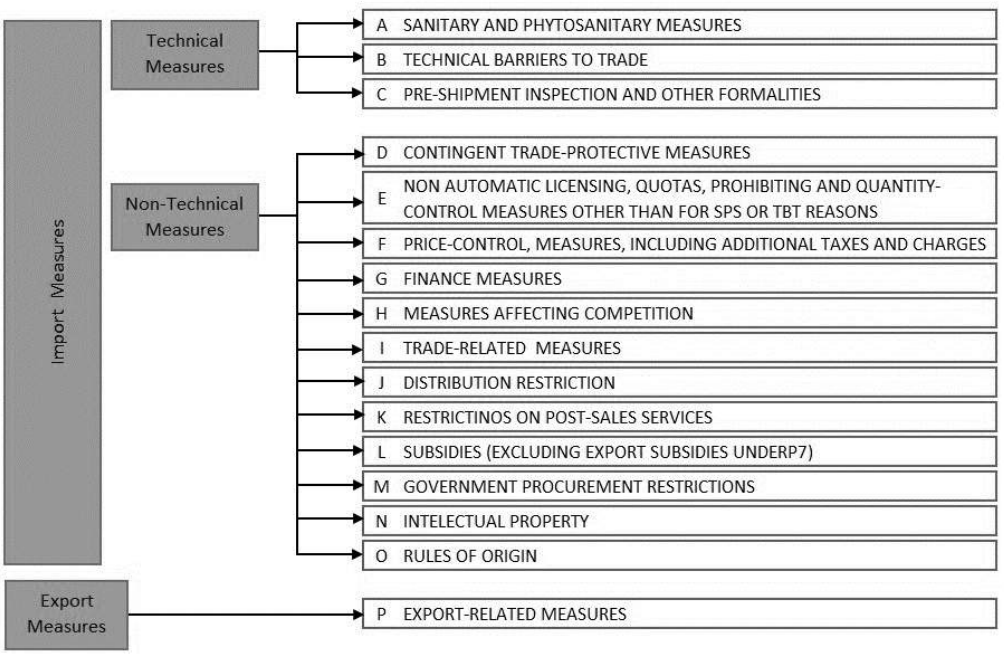
Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

INTRODUCTION

Since the General Agreement on Tariffs and Trade came into force, there has been a reduction in global tariffs in international trade, or tariff liberalization. However, tariff liberalization has proved unsuccessful in providing ease of market access. Almost every country implements various obstacles to the ongoing free trade of the international community. As tariff barriers decline, certain measures other than tariff become effective as trade barriers and are called Non-tariff measures (NTM). from the enactment of SPS policies in Indonesia, which are shown with positive and significant impacts, while CR for developing countries has a negative and significant impact.

Based on the definition of the United Nations Conference on Trade and Development, NTM is a policy that other than tariff, can potentially influence international trade by changing the quantity or price of trade or both. NTM classification is described in Figure 1. NTM consists of import and export measures. Furthermore, import measures consist of two categories, namely technical and nontechnical measures.



Source: UNCTAD

Figure 1. NTM Classification.

Non-tariff policy data of various regions in the world are summarized in Table 1. Based on data in the table, the most non-tariff policy issued by regions is SPS policy. Under the UNCTAD definition, SPS are measures applied to protect human or animal life from risks arising from the presence of addictive substances, pollution, toxins, or disease-

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

causing organisms present in food. The SPS policy includes all conformity assessment measures related to food safety, such as certification, testing and inspection and quarantine (UNCTAD).

Table 1. Recapitulation of Non-Tariff Policies in the World

Continent	Non-Tariff Measures							
	CTPM	**EXP**	**INSP**	**OTH**	**PC**	**QC**	**SPS**	**TBT**
Afrika	6	752	102	49	153	70	1.161	1.261
Asia	80	1.857	229	68	401	331	3.549	5.903
Europe	2	179	222	8	35	91	443	952
Latin America Caribbean	381	734	163	50	201	389	10.511	4.385
Middle East		427	155	33	125	151	1.241	1.076
Northern America	1	304	86	4	57	78	2.956	3.066
Oceania	2	595	34	4	87	19	2.011	2.715
Total	**472**	**4.314**	**986**	**215**	**977**	**1.112**	**21430**	**18.065**

Source: TRAINS-UNCTAD, processed

CTPM: Contingent Trade-Protective Measures, EXP: Export-Related Measures, INSP: Pre-Shipment Inspection, OTH: Other Formalities, PC: Price Control, QC: Quantity Control, SPS: Sanitary and Phytosanitary, TBT: Technical Barriers to Trade

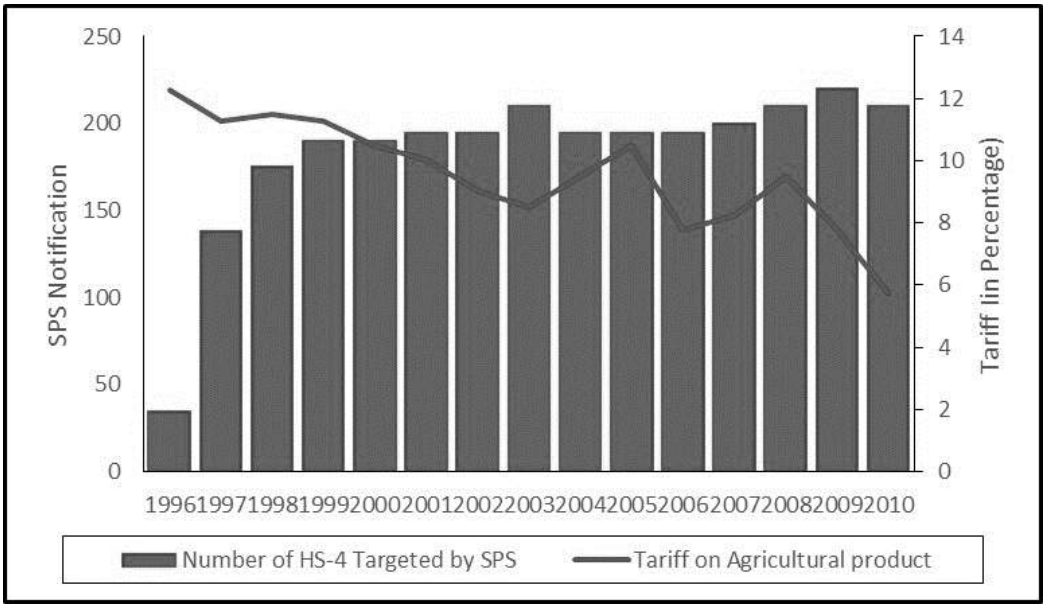
Agreement of the implementation of SPS measures has been in force since the World Trade Organization (WTO) established on January 1, 1995. Along with the emergence of agreements on SPS, the nature of trade barriers changed from tariff to non-tariff (Ferro et al. 2015). From 1996 to 2009, the average rate of global tariffs on trade of agricultural products decreased from 14.6 percent to 10.8 percent, while the number of SPS notifications on the trade of agricultural products increased from 136 to 564 notifications that can be seen in Figure 2. This is under empirical studies conducted by Ronen (2016) and Orefice (2016), in which tariff barriers are significantly negatively correlated with non-tariff barriers. Tariff liberalization puts most tariffs to be below 5 percent, while multilateral and bilateral trade negotiations lead to tariff reductions up to zero percent (Devadason et al. 2017).

WTO agreement on SPS measures enables countries to adopt their own rules based on risk assessment, non-discriminatory and minimal trade distortions to prevent the use of these measures as protectionist instruments (Josling et al. 2004; Bao & Qiu 2012; Ferro et al. 2015). This has an impact on the diverse standards established around the world (Dou et al. 2015). However, the WTO factsheet noted that SPS measures are used as an impediment to trade in agricultural and food products, and imposed SPS measures to protect domestic producers from economic competition (WTO 2003; Becker 2006). This happens because SPS policy is severely limited to food and agricultural products. UNCTAD (2013) found that more than 60 percent of food products are affected by at least one SPS policy. SPS covers all measures of conformity assessment related to food safety, such as certification, testing, inspection and quarantine (UNCTAD). Therefore,

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

many studies have been conducted to measure the impact of SPS policies on trade of food and agricultural products (Bratt 2017; Ekananda 2018).



Source: WTO, STC data set and TRAINS

Figure 2. Number of SPS Notification and Rate of Global Tariff Period 1996 – 2010.

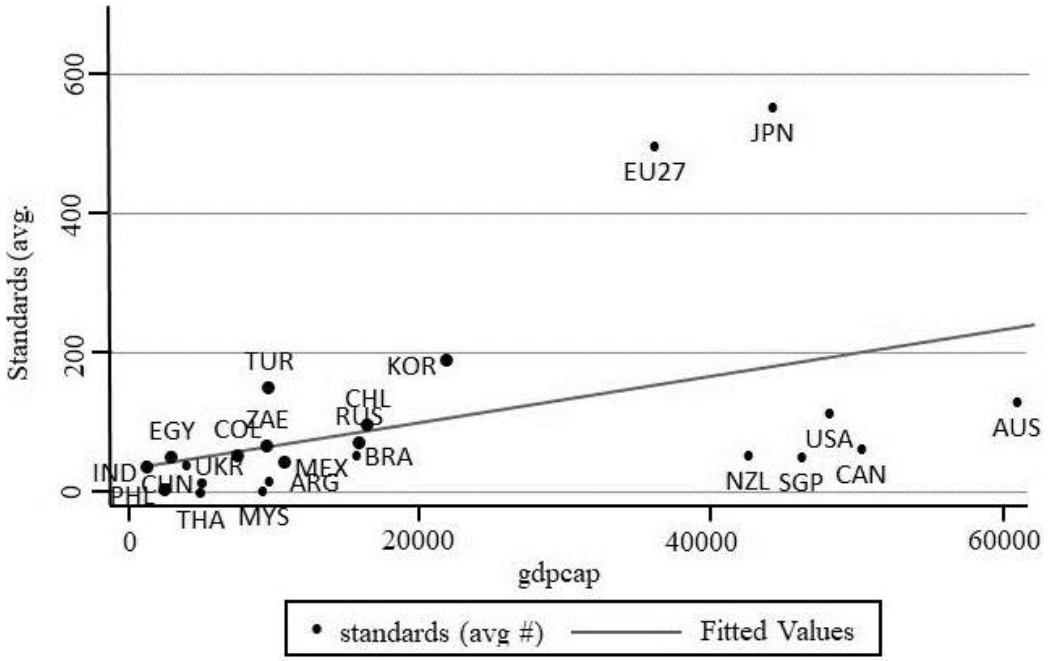
Standards of safety and health food and agricultural products have become a major problem in many countries. Food safety is the condition and effort required to prevent food from possible biological, chemical, and other contamination that may disrupt, harm, and endanger human health. These standards also ensure that food does and not conflict with religious, cultural and/or also social beliefs while ensuring that it is safe for consumption (UU No. 18/2012). Ensuring safety and healthy food is an important prerequisite in developed and developing countries (Othman 2014). The diversity of food safety standards can occur even in countries with similar economic growth rates, and each country may have different standards or interpret the same standards in different ways (USDA 2003). The diversity of these security standards is due to differences in technology, plants and pests, production processes, culture, geography and climate conditions (Buzby & Unnevehr 2003).

Developed countries generally have more stringent standards, especially SPS standards (Ferro et al. 2015). Developed countries report SPS notifications to WTO more than developing countries do. The higher GDP per capita of a country, then the average number of standards per product will increase. The high income per capita owned by residents in developed countries lets them pay more attention to issues related to quality and food security, as compared to developing countries that are limited to the problem of

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

food availability. Besides, SPS notification also requires scientific justification. This is following by advanced research and the development of science in developed countries.



Source: Ferro et al. (2015).

Figure 3. Relationship Between State Revenue per Number of Standards.

Table 2. Recapitulation of Non-Tariff Policy in ASEAN

Countries	**NTM Category**							
	CTPM	**EXP**	**INSP**	**OTH**	**PC**	**QC**	**SPS**	**TBT**
Brunei D		46	1		18	2	161	288
Cambodia		70	1		12	3	36	121
Indonesia	44	74	53	4	5	8	125	321
Lao PDR		82	14	1	48	26	38	82
Malaysia	24	72	5		12	9	260	331
Myanmar		35	2	1	13	5	75	41
Philippines	1	146	24	12	23	56	233	360
Singapore		49	2		35	1	127	300
Thailand	53	128	44	3	21	40	762	562
Viet Nam		57	5	11	7	7	121	122
Total	**122**	**759**	**151**	**32**	**194**	**157**	**1,938**	**2,528**

Source : ERIA-UNCTAD, processed

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

The differences of SPS measures not only occur between regions but also between countries within those regions (UNCTAD 2013). For example, this happened with countries in Southeast Asia (ASEAN) that also felt the impact of the diverse standards of food security that were applied. The recapitulation of non-tariff policy of Indonesia and ASEAN countries is presented in Table 2.

Research about the impact of food safety standards on exports has been widely practiced in several countries, including China (Chen et al. 2008; Wei et al. 2012; Dou et al. 2015), Pakistan (WTO 2003; Mustafa & Ahmad 2004; Masakure et al. 2009; Ali 2016), Turkey (Atici 2013), Chile (Melo et al. 2013). Such researches are generally undertaken to examine the impact of food safety standards from developed countries on exports that come from developing countries, where food safety standards established by developed countries tend to be more stringent than developing countries, thus hampering exports from developing countries (Otsuki et al. 2001; Mustafa & Ahmad 2004).

In addition to exports, some researchers also analyzed the impact of food safety standards on imports (Ferrier 2014; Peterson et al. 2015; Kareem et al. 2017). Similar to previous research, these three studies were conducted by examining the impact of food safety standards of developed countries as importing countries on exports originating from developing countries. Thus, the results of the study are not different from those previous researches, which show food safety standards from developed countries reduce imports from developing countries.

Studies on food safety standards generally use a specific SPS measure, the maximum residue limit (MRL) in pesticide for particular commodities, as done by Chen et al. (2008), Wei et al. (2012), Dou et al. (2015), Melo et al. (2014), and Otsuki et al. (2004). Other studies use the impact of a regulation established using dummy variables (Atici 2013; Harahap 2015).

Studies examining the overall impact of SPS on trade of food products are yet to be conducted. Dahar, Oktaviani, and Rindayati (2014) examine the impact of SPS and TBT policy on export of Indonesian horticulture products to ASEAN and three countries using an inventory approach. Based on the results, it is found that Indonesia's largest horticulture export is to Singapore where SPS and TBT policies do not apply. However, this contradicts the data in Table 2, wherein it is shown that Singapore has a non-tariff policy with a total of 514 notifications. because the non-tariff policy database used is not yet comprehensive.

Data on non-tariff policies tend not to be transparent, so information on NTM is difficult to collect (UNCTAD, 2013). In early 2016, the Economic Research Institute of ASEAN (ERIA) and UNCTAD launched a more comprehensive database of NTM, comprising various subsectors derived from various regulations on imported products. Devadason et al. (2017) suggest that pre-existing studies of such databases are deemed inaccurate to address the issue of the impact of NTM on trade, particularly in the ASEAN region.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

The differences in the impact of SPS policies on exporting countries are not found in previous studies. This is because most studies focus only on the aggregate impact of SPS policy on trade, and few have taken consider the difference in the impact of the policy on exporting countries. Bratt (2017) states that NTM policies of importing countries can have an asymmetric impact on exporting countries. The same NTM can affect different exporting countries differently, even when traded goods are of the same quality (Bratt, 2017). Several studies have shown that SPS policies on food and agricultural products have different effects among exporting countries (Anders & Caswell 2009; Bao & Qiu, 2012; Crivelli & Groschl 2016; Bratt 2017).

Anders and Caswell (2009) shown that larger seafood-exporting countries benefited from food security standards established by the United States in 1997, but smaller exporting countries tend to be disadvantaged by these same standards. Bou and Qiu (2012) also found that the impact of other non-tariff policies is TBT. From a sample of 105 countries, the authors classify the exporting into developed and developing countries and then regress them separately. Estimation results show that the TBT of developing countries has a significant impact on exports originating from other developing countries, but not on exports from developed countries. While TBT from developed countries has a significant impact both on exports from developed and developing countries, exports coming from developed countries are more seriously influenced by TBT from developed countries than TBT developing countries.

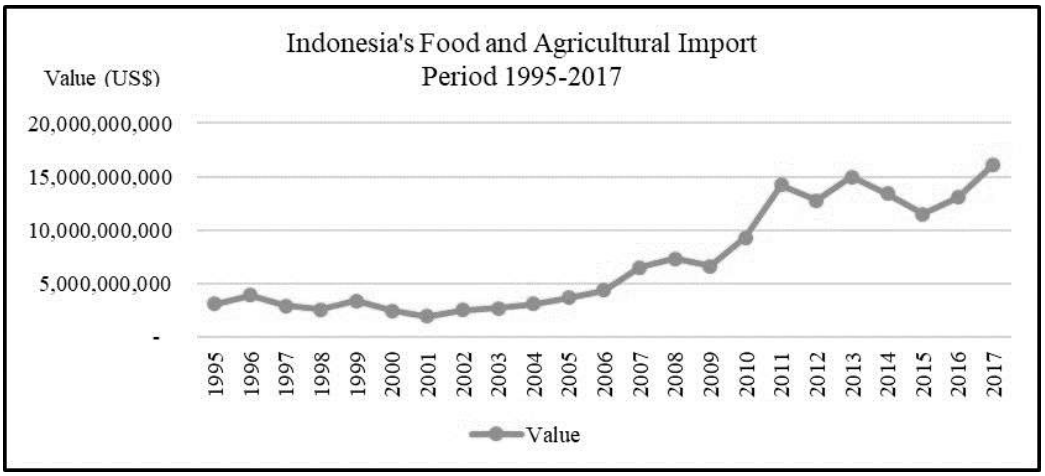
Crivelli and Groschl (2016) analyzed the impact of SPS policies on food product imports. Using a sample of 114 importing countries and 124 exporting countries. The authors found that SPS policies in aggregate had a negative impact on imports. The authors also found that NTM can have asymmetric effects because SPS standards provide information about safety products to consumers. So the SPS policy tends to increase exports coming from countries with tighter security standards, while exports from other countries tend to decline. Bratt (2017) shows that the impact of the same NTM on exporters can be quite different. NTM can have positive and negative effects on trade flows, although most positive effects do not differ statistically from zero. The impact of NTM on exporting countries is reduced for high-income countries.

Based on the above background, the question arises whether the SPS policy enacted by Indonesia has a heterogeneous impact on its more than 100 exporting countries, which both countries. Researches on the impact of SPS policies imposed in Indonesia on the import of whole food products using all samples of the author's knowledge has not been done. Therefore, it is important to examine the impact of SPS policies imposed in Indonesia on food imports as Indonesia still imports much to meet domestic food needs. In the period 1995 to 2017, Indonesian food imports tended to increase an average of 10.17 percent per year. Figure 4 describes the decline in import value of Indonesian food products from both countries began to occur in 1997 when Indonesia started issuing SPS policy.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

Exporting countries are grouped into developed and developing countries based on per capita income as key indicators (World Bank). The World Bank classifies countries in the world based on per capita income into four groups, low-income, lower-middle-income, high-middle-income, and high-income countries. The classification is issued by the World Bank every year in July. Developed countries are countries that have high per capita income while developing countries are countries with low-income to upper-middle-income per capita.



Source: UN Comtrade, processed

Figure 4. Import Value of Food and Agricultural Product Period 1995 – 2017.

Table 3. Number of SPS Policy Notification Indonesia

Period	SPS Notifications	Period	SPS Notifications
1997	3	2010	9
2003	2	2011	22
2005	2	2012	8
2006	4	2013	17
2007	4	2014	17
2008	9	2015	5
2009	23	Total	125

Source: ERIA-UNCTAD, processed

Indonesia's SPS policy on exports from developed and developing countries can have a different impact because developed countries have more SPS policy notifications than emerging countries, and according to previous studies developed countries already have stricter food safety standards than developing countries. Indonesian government seeks to improve the food safety standards of imported food products. This is evident from the number of SPS policy notifications that tend to increase in number.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

The remainder of this paper is organized as follows. Section 2 of this article discusses the theoretical basis of the impact of SPS policies on trade. Section 3 presents the specification of variables and data sources and research estimation methods. Section 4 provides an econometric analysis of the impact of SPS Indonesia's policy on the import of food and agricultural products. Section 5 discusses the conclusions of this study.

ANALYTICAL FRAMEWORK

Based on the theory, SPS as a measure of non-tariff policies has a diverse and not necessarily negative impact on trade (Bratt 2017; Crivelli & Groeschl 2016). Increasing production costs to meet more stringent food safety standards can reduce trade. However, information about food safety and product quality can increase consumer confidence in foreign products, thereby reducing transaction costs and encourage trade (Crivelli & Groeschl 2016). Brat (2017) illustrated the different impacts of NTM on bilateral trade using the demand and supply curves as presented in Figure 4.

Suppose there are two exporting countries L which represents low-income (developing) and H which represents high-income (developed). When there are no regulations or regulations set by the importing country are loose, country L has a lower cost function than H. However the opposite happened if the regulations set by the importing country are more stringent. For simplicity, the cost functions of the two quadratic exporting countries are as formulated by Marette and Beghin (2010), and it is assumed that both countries are price-takers. The profit function of both exporting countries is as follows:

$$\Pi_L = p * q - \lambda_L(c_L * q_L + \frac{1}{2} f_L q_L^2) \quad (1)$$

$$\Pi_H = p * q - \lambda_H(c_H * q_H + \frac{1}{2} f_H q_H^2) \quad (2)$$

c and f are cost variables, where $c_L < c_H$ and $f_L < f_H$. The NTM compliance fee stipulated by the importing country is expressed as lambda (λ), which serves to capture the presence or absence of NTM, where $\lambda_L = \lambda_H = 1$ states that there is no NTM. It is then assumed that the H state is more efficient in resolving the NTM problem compared to state L, thus $1 \leq \lambda_H \leq \lambda_L$. To obtain q maximizing profit function then the required condition (FONC) is

$$\frac{\partial \Pi_L}{q_L} = 0 \quad (3)$$

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

$$\frac{\partial \Pi_H}{q_H} = 0 \tag{4}$$

and the following is obtained:

$$q_L = \frac{p-\lambda_L c_L}{\lambda_L f_L} \tag{5}$$

$$q_L = \frac{p-\lambda_H c_H}{\lambda_H f_H} \tag{6}$$

It is then assumed that the importing country does not produce *q*, so the total supply of product *q* in the international market comes from the two exporting countries, $q = q_L + q_H$. The demand function is a linear function of the price *p*, $q = a - p$ where *a* constant denotes the maximum market size.

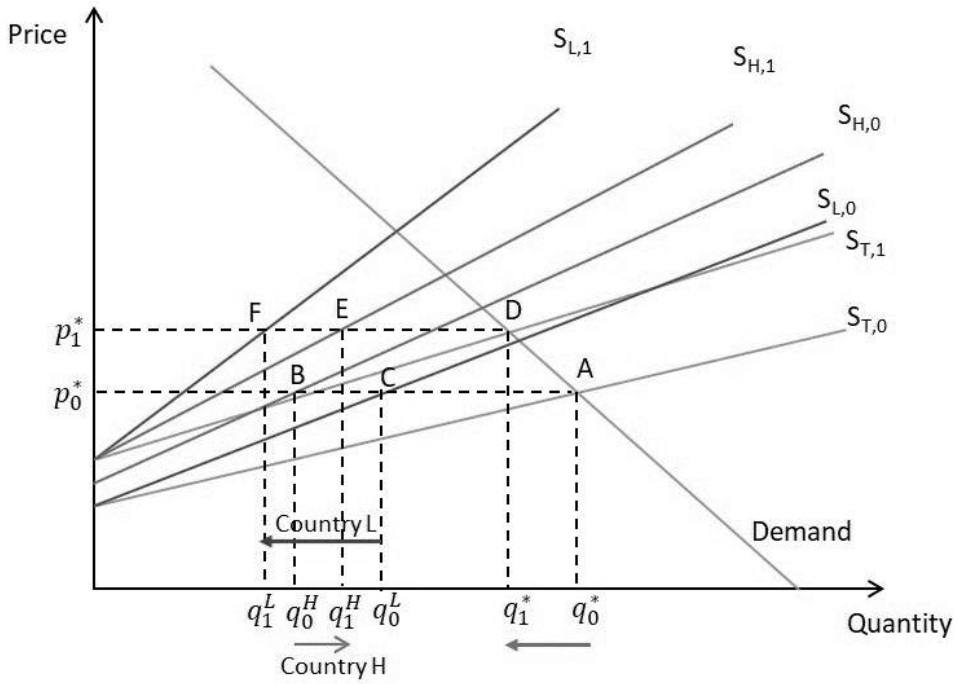
Figure 5 illustrates the impact of NTM policy on bilateral trade flows by showing how the supply curve shift and corresponding quantity and price balance change when the importing country enforces NTM. Beginning with the case of the absence of NTM, which is denoted by the subscript "0" in the figure, the market is moving at the point of equilibrium A, where the demand curve and the total supply curve intersect. Before the introduction of NTM by importing countries, since country L is more efficient than country H, then at the price of equilibrium L supplies more goods than country H. Furthermore because of the advantages it possesses country L enters the market earlier than does country H.

Introduction NTM by importing countries causes an increase in production costs to comply with the policy. Increased production costs cause a decrease in manufactured goods, so the total supply curve shifts left from $S_{T,0}$ to $S_{T,1}$. At the time of total fixed demand, the total decrease in supply causes the balance point to shift to point D where the equilibrium price rises from p_0 to p_1 and the equilibrium quantity decreases from q_0 to q_1.

Based on previous assumptions, the application of strict NTMs causes the role of two reverse exporting countries. Country H is more efficient in meeting standards than country L and is the dominant seller in the market; this symbolized by the "1" subscript in the image. Country H which is a representation of developed countries with high per capita income tending to already have strict NTM standards. So, when the importing country applies strict NTM policies, the compliance costs incurred are not too large. Country L is a representation of developing countries that have lower-middle-income per capita with NTM standards that tend to be laxer so that if the importing country applies NTM policy, the compliance costs to be paid by country L are much larger than those of H.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.



Source: Bratt (2017)

Figure 5. Impact of Non-Tariff Policy on Trade.

This happens because developed countries already have strict NTM standards. If the importing country applies more stringent NTM standards, the compliance costs incurred are not too large or even require no additional costs because the NTM standards implemented by developed countries are more stringent than those required by the importing country. While the compliance costs that must be incurred by developing countries tend to be larger because the NTM standards tend to be laxer, here is an increase in very high production costs, and this, in turn, causes a decrease in the output produced. Therefore, developed countries tend to benefit from the imposition of NTM policies by importing countries.

The reversal of market share illustrates that for an exporting country, NTM affects not only the cost of production in its own country but also the cost of production of other exporting countries. Country H is not only a major supplier in the importing country after NTM enforcement but the quantity exported increases as a result of NTM. While NTM has a negative impact on the total amount in the market and on the quantity supplied by the exporting country L. Thus, the distribution effect of NTM on exporting countries is different so that the result is opposite, there is a negative and positive impact. This difference in impact has not been found in studies conducted by Korinek et al. (2008), Hermianti (2015), and Harahap (2015), because they only see the impact of a standard in the aggregate level.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

METHOD

Research on the impact of the implementation of food safety standards on the import of food products will be conducted using a model built by Devadason et al. (2017); and Bao & Qiu (2012) with some adjustments. Empirical studies that have been conducted on the impact of food safety standards on trade flows generally use the gravity model as done by Chen et al. (2008), Dou et al. (2015), Ferro et al. (2015), Harahap (2015), Hermianti (2015), Peterson (2016), etc. The gravity model is widely used to examine the impact of food safety standards on bilateral trade. In the gravity model, bilateral trade flows are regressed on the degree of economies of scale of exporters and importers (GDP) and the distance between the two countries (Keichiro et al. 2015).

Specifically, the model to be used in this research is as follows:

$$\ln(IMPOR_{j,kt}) = \beta_0 + \beta_1 \ln(GDP_t) + \beta_2 \ln(GDPJ_{j,t}) + \beta_3 \ln(ECDIST_{j,t}) + \beta_4 TRF_{j,kt} + \beta_5 CR_{j,kt} + \varepsilon_{j,kt} \quad (7)$$

$IMPOR_{j,kt}$ is the value of Indonesian imports for agricultural and food products at the six-digit HS level for commodity groups HS-01 to HS-22 period of the year, t = 1995-2016. The import value in this study came from Indonesian trading partners for agricultural and food products. GDP_t and $GDPJ_{j,t}$ are the per capita income of Indonesia and exporting countries, respectively.

The Indonesian GDP per capita variable is the total value of Indonesian goods and services per capita production over a period of time. This variable is used as a proxy for import requests (Devadason et al. 2017). This variable describes the purchasing power of Indonesia to goods and services from exporting countries. The higher the GDP per capita of Indonesia, the more goods can be imported to increase the value of imports. $GDPJ_{j,t}$ is used as a proxy against supply (Devadason et al., 2017). This variable describes the market size of the exporting country, capturing the number of sellers of a product. The higher the growth of GDP per capita of the exporting country will be, the greater the number of products produced so that more products can be exported and increase the value of Indonesian imports of those products.

$ECDIST_{j,t}$ is the economic distance between the Indonesian capital and the capital of the exporting country. Distance is the main variable in the gravity equation. The distance variable in this study is the economic distance used by Nugroho (2016). The use of economic distance due to geographic distance between countries does not change over time or constant. The economics distance considers elements of a difference other than geographical distance, such as the cost or quality of natural resources, financial resources, human resources, infrastructure, information or knowledge. The economic distance used in this study is obtained through the following equation:

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

$$ECDIST_j = \frac{DIST_{Indonesia-\text{exporter}_j} \, x \, GDP_{exporter_j}}{\sum GDP_{exporter_j}} \quad (8)$$

The further the economic distance, the greater the cost of trade will be, to reduce the number of goods exported. The economic distance is closely related to transportation costs. Transportation costs will lead to a decrease in trade volume of both exports and imports (Salvatore 1997). $TRF_{j,kt}$ is the import tariff charged to the exporting country for the commodity group in the two-digit HS code from HS-01 to HS-22. Higher tariffs will lead to increased costs which further decrease exports. The tariff variable is expressed in terms of percent (%).

To analyze the impact of NTM on imports, Devadason et al. (2017) use a gravity model with an inventory approach. The inventory approach is done by calculating the frequency index and coverage ratio (CR) at the period adjusted to data availability. Inventory approach is the simplest disaggregate indicator in measuring the implementation of NTM in a country (UNCTAD 2013). Based on the definition of UNCTAD (2013), frequency index is the percentage of products subject to one or more NTM, while the CR captures the percentage of import values subject to one or more NTM.

Frequency index only captures the presence or absence of NTM, and summarizes the percentage of products subject to one or more NTM. The frequency Index does not reflect the import value of the products affected and thus cannot provide any indication of the importance of NTM for overall imports (Disdier et al. 2008; Deardoff & Stern 1997). Therefore the inventory approach used in this study is the CR that measures the percentage of trade that is subject to SPS. CR of SPS imposed by country *j* at time t is expressed by the following equation:

$$CR_{kt} = \frac{\sum D_{st} V_{st}}{\sum V_{st}} * 100 \quad (9)$$

wheres *s* is the product of the six-digit HS code, *k* is the product category in the two-digit HS code, Dst is the dummy variable for the product affected by SPS in year t (value 1 if there is SPS, and 0 for other conditions), and Vst is the import value of product *s* in year *t*. The value of CR is in the range of 0 – 100 percent. The smaller CR indicates the less coverage of the product affected by the policy, while the greater CR indicates the scope of the product affected by the wider policy.

Data on Indonesian SPS policies that were implemented from 1995 to 2016 were obtained from the ERIA-UNCTAD database. The SPS policy in Indonesia includes the Minister of Agriculture, the Minister of Maritime Affairs and Fisheries, the Minister of Health, the Minister of Trade and the Food and Drug Supervisory Agency (BPOM). Based on ERIA-UNCTAD database, the Indonesian SPS policy mostly regulates food

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

standards from the HS-01 code group to HS-22. From 959 imports of food and agricultural products, about 69.13% are regulated by at least one SPS policy.

Import value of Indonesian agricultural and food products with six-digit HS code is obtained from the trading database of UN Comtrade. Indonesia's GDP per capita and exporting countries based on a constant price with the base year of 2000 in US $ units are taken from the World Development Indicator World Bank. The distance between the Indonesian capital and the capital of exporting countries is taken from CEPII database. While the tariff data for products with six-digit HS code is obtained from World Integrated Trade Solution, World Bank.

The estimation method used in this research is panel data method. Panel data is a regression that combines time-series data and cross-section data (Ekananda, 2016). According to Ekananda (2012), the use of panel data has many advantages both statistically and economically theoretically. (1) Panel data can account individual heterogeneity that makes usable for testing and building more complex behavior models; (2) by increasing the number of observations causing the data to be more informative, more varied, decreased collinearity between variables and increased degrees of freedom so that the estimation results obtained are more efficient.

In this research, time-series data is the import value of Indonesian food products for the period of 1995 – 2016, and the HS-01 to HS-22 code groups as a cross-section. Then the data are grouped into several clusters (groups) based on the similarity of the product on the two-digit HS (HS02) and the similarity of the country code. Then the model is estimated using a fixed effect (FE) and random effect (RE) models. The Hausman test was performed to test between FE and RE models. If the null hypothesis is rejected then there is no systematic difference between the FE and RE models, so the FE model is better to use.

Estimates are done three times, on the condition of aggregated and disaggregated import data. Under disaggregate conditions, exporting countries are grouped into developed and developing countries following research conducted by Bao and Qiu (2012). The World Bank classifies developed and developing countries based on per capita income from a country as a leading indicator. The World Bank divides the countries of the world into four major groups: (1) low-income, (2) lower-middle-income, (3) upper-middle-income, and (4) high-income. In the above classification, groups numbered 1 to 3 are then called developing countries while group number 4 is called a developed country. The World Bank releases the classification data of the four income groups annually in June.

In Table 4, we present the descriptive statistics of the dependent and independent variables in this study for the aggregated conditions. The number of observations in this study was 6578 observations with 299 clusters. The average import value was 18.8 million US$, while the lowest import value of 3 US$ came from Italy in 2010 for

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

products at HS-22, and the highest import value in 2012 for HS-10 was 1.48 billion US$ from Australia.

The descriptive statistics of developed and developing countries were obtained from 4600 and 1978 observations, respectively. For developed countries, the average import value was about 15.6 million US$, where the lowest and highest import values were the same as the data on aggregate conditions because both of these values came from developed countries.

Table 4. Descriptive Statistics of Dependent and Independent Variables

Variable	Mean	Std. Dev.	Min	Max	Unit
IMPOR	18,800,000.00	80,900,000.00	3.00	1,480,000,000.00	US$
CR	24.76	39.98	0.00	100.00	%
GDP	2,777.00	595.75	2,071.55	3,974.06	US$
GDPJ	29,936.49	19,521.65	246.06	91,617.28	US$
ECDIST	2.63	2.46	0.01	10.78	Km
TRF	6.29	6.54	0.00	50.00	%

Table 5. Descriptive Statistics of Dependent and Independent Variables for Developed Country

Variable	Mean	Std. Dev.	Min	Max	Unit
IMPOR	15,600,000.00	81,200,000.00	3.00	1,480,000,000.00	US$
CR_Developed	25.53	40.34	0.00	100.00	%
GDP	2,780.76	597.23	2,071.55	3,974.06	US$
GDPJ	40,912.30	11,834.79	9,469.11	91,617.28	US$
ECDIST	3.67	2.23	0.25	10.78	Km
TRF	6.87	6.32	0.00	50.00	%

Table 6. Descriptive Statistics of Dependent and Independent Variables for Developing Country

Variable	Mean	Std. Dev.	Min	Max	Unit
IMPOR	26,400,000.00	79,800,000.00	4.00	947,000,000.00	US$
CR_Developing	22.98	39.07	0.00	100.00	%
GDP	2,768.27	592.35	2,071.55	3,974.06	US$
GDPJ	4,411.35	3,134.89	246.06	12,052.33	US$
ECDIST	0.21	0.37	0.01	2.13	Km
TRF	4.94	6.84	0.00	50.00	%

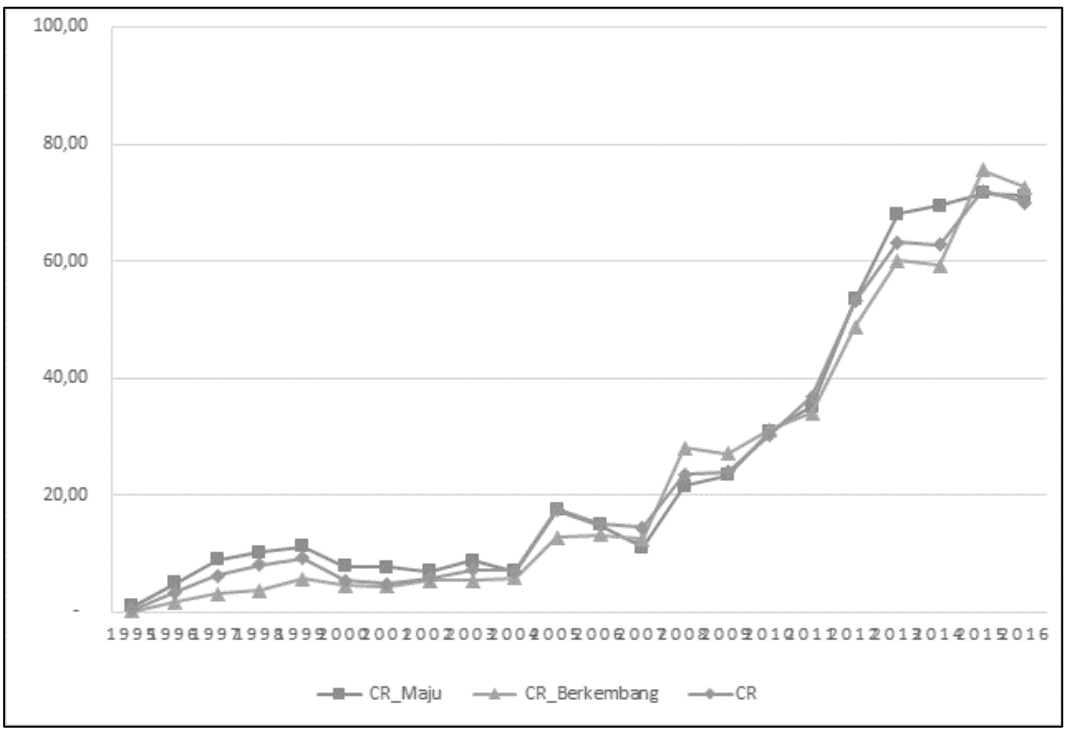
The average import value for developing countries is higher than the aggregate data and developed country data, which is 26.4 million US$, but the maximum import value is far below that of developed countries. This indicates that the variance in the value of Indonesian imports originating from developing countries tends to be smaller compared to developed countries.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

The highest CR average value is in the developed countries group at 25.53%, which means that food products from developed countries tend to be more regulated by the SPS policy. This is because SPS standards in developed countries tend to be tighter.

Under aggregate conditions, the average percentage of CR per year is 24.76%, whereas the average percentage per year for developed countries and developing countries is 25.53% and 22.98%, respectively. Thus, it can be stated that the coverage of imported food and agricultural products affected by Indonesia's SPS policy is around 22.98 to 25.53 percent. The following is the development of CR from the SPS Indonesia policy for the period 1995 – 2006.



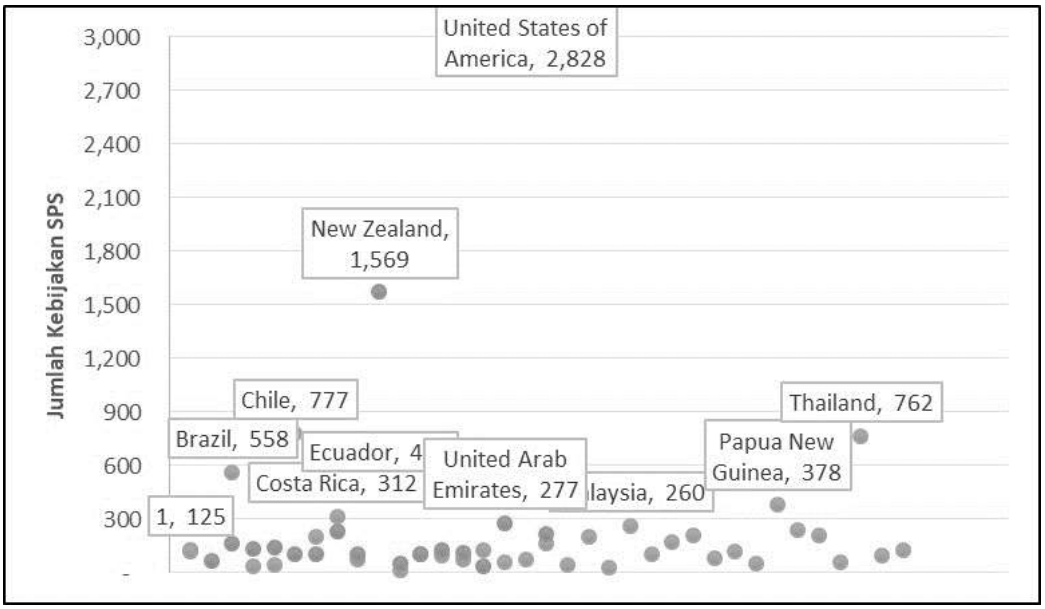
Source: UNCOMTRADE & ERIA UNCTAD, processed

Figure 6. Coverage Ratio of Indonesian SPS Policy.

When compared with other countries in the world, the number of SPS Indonesia policy notifications is far below developed countries, especially the United States and New Zealand. Based on Figure 6, among ASEAN member countries, the number of Indonesian SPS policies is still less than the Philippines, Malaysia, and Thailand. This means that the food safety standards implemented in Indonesia are very loose if compared to developed countries even when compared to ASEAN countries.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.



Source: UNCTAD, processed

Figure 7. Amount of SPS Policy in Countries in the World.

RESULTS AND DISCUSSION

Table 7 is the estimation result of the regression of the aggregate level. The result is done by RE model where all independent variables are significant in the model. The RE method is more appropriate to estimate the flow of trade between countries if the sample is taken randomly (Antonucci & Manzocchi 2006).

The coverage ratio (CR) of SPS Indonesia policy has a negative and significant impact on the import of food and agricultural product of about –0.0001 percent. This is in line with the theory that the NTM policy, in general, has a negative impact on imports. Indonesia's GDP per capita has a positive and significant impact on the significance level $\alpha = 1\%$, with an elasticity of 1.326 percent. Increased growth in Indonesia's GDP per capita shows an increase in the country's purchasing power, thereby increasing the growth of import value. GDP per capita of the exporting country also has a positive and significant impact on the model with an elasticity of 0.299 percent. The distance between Indonesia and the exporting country is negative and significant with an elasticity of –0.02 percent. Tariff (TRF) in this study is negative and significant following the research hypothesis at a significance level of $\alpha = 10\%$.

Based on Figure 8, the decline in the value of imports caused by the increase in the percentage of CR occurred in 1997, namely when Indonesia began to implement the SPS policy. A significant decline in import values also occurred in 2009 due to an increase in SPS Indonesia's policy notifications.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

The estimation result at the disaggregate level, where exporting country countries are grouped into developed and developing countries (Table 8) is done with the FE model because the FE method is more appropriate to estimate the trade flow if the countries have been set first (Egger 2005). CR from SPS Indonesia policy for imported food products from developed countries has a positive and significant impact on imports of about 0.003 percent, whereas the CR of the SPS Indonesia policy on developing countries has a negative impact around –0.0004 percent. This result is consistent with the theory that developed countries tend to benefit from the established standards because they have already adopted more stringent security standards than developing countries have. Besides, people in developed countries are willing to spend more to obtain food that is safe for consumption.

Table 7. Estimation of Aggregate Data

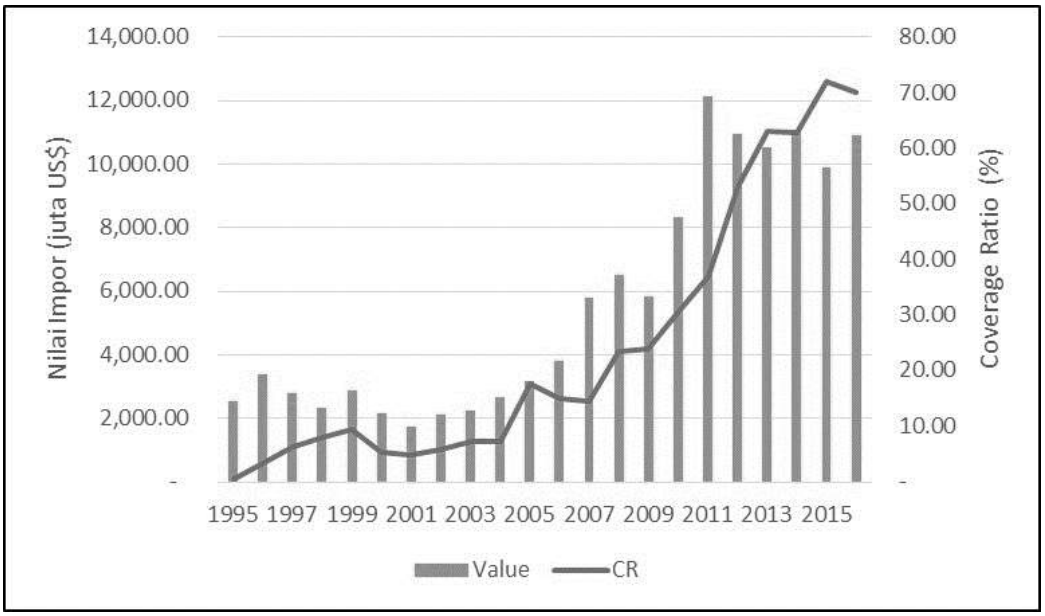
Variables	**lnIMPOR**
CR	– 0.0001***
	(0.00001)
lnGDP	1.326***
	(0.104)
lnGDPJ	0.299**
	(0.149)
lnECDIST	– 0.463***
	(0.114)
TRF	– 0.0204***
	(0.00328)
Constant	0.343
	(1.434)
Observations	6,578
R-squared	0.2292
Number of groups	299

*** α = 1%, ** α =5%, * α = 10%

Indonesia's per capita GDP has a positive and significant impact on both models of significance level α = 1%, with elasticities of 3.289% and 2.733%, respectively. Increased GDP growth per capita Indonesia shows increased purchasing power that increases the growth of import value. The difference in elasticity shows that with increasing GDP per capita, Indonesia's ability to buy food products from developed countries tends to be larger because the prices offered tend to be higher than the prices offered by developing countries. GDP per capita of the exporting country also has a positive and significant impact on the model. The distance and tariff variables also have a negative and significant impact on both models according to the theories that have been delivered.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.



Source: UNCOMTRADE and ERIA-UNCTAD, proccesed

Figure 8. Import Value and Coverage Ratio of Indonesian Food and Agriculture Products.

Table 8. Estimation Group of Developed and Developing Country

Variables	**(Developed) lnIMPOR**	**(Developing) lnIMPOR**
CR	0.0033***	– 0.0004***
	(0.0007)	(0.0001)
lnGDP	3.289***	2.733***
	(0.149)	(0.235)
lnGDPJ	– 1.313	0.253
	(0.254)	(0.218)
lnECDIST	– 0.508***	0.179
	(0.170)	(0.195)
TRF	– 0.0099***	– 0.0360***
	(0.0036)	(0.0054)
Constant	2.219	– 8.128***
	(2.193)	(2.471)
Observations	4,576	1,914
R-squared	0.2312	0.2932
Number of groups	208	87

*** α = 1%, ** α = 5%, * α = 10%

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

Table 9. Robust Examination on Developed Country Models

Variables	**(1) lnIMPOR**	**(2) lnIMPOR**	**(3) lnIMPOR**	**(4) lnIMPOR**	**(5) lnIMPOR**
CR_Developed	0.0134***	0.0035***	0.0034***	0.0036***	0.0033***
	(0.0005)	(0.0007)	(0.0007)	(0.0007)	(0.0007)
lnGDP		2.634***	3.136***	3.236***	3.289***
		(0.112)	(0.145)	(0.148)	(0.149)
lnGDPJ			1.151***	0.964***	1.313***
			(0.214)	(0.219)	(0.254)
lnECDIST				– 0.620***	– 0.508***
				(0.165)	(0.170)
TRF					– 0.0099***
					(0.0036)
Constant	13.49***	– 7.090***	1.124	– 1.023	2.219
	(0.0234)	(0.875)	(1.759)	(1.846)	(2.193)
Observations	4,576	4,576	4,576	4,576	4,576
Number of groups	208	208	208	208	208

*** α = 1%, ** α =5%, * α = 10%

Table 10. Robust Examination on Developing Country Models

Variables	**(1) lnIMPOR**	**(2) lnIMPOR**	**(3) lnIMPOR**	**(4) lnIMPOR**	**(5) lnIMPOR**
CR_Developing	0.0005***	– 0.0004***	– 0.0004***	– 0.0004***	– 0.0004***
	(0.0001)	(0.0001)	(0.0001)	(0.0001)	(0.0001)
lnGDP		3.784***	2.895***	2.922***	2.733***
		(0.149)	(0.234)	(0.236)	(0.235)
lnGDPJ			0.675***	0.807***	0.253
			(0.137)	(0.203)	(0.218)
lnECDIST				– 0.166	0.179
				(0.189)	(0.195)
TRF					– 0.0360***
					(0.0054)
Constant	14.88***	– 14.99***	– 13.40***	– 15.05***	– 8.128***
	(0.192)	(1.193)	(1.229)	(2.256)	(2.471)
Observations	1,914	1,914	1,914	1,914	1,914
Number of groups	87	87	87	87	87

*** α = 1%, ** α =5%, * α = 10%

To prove that the influence of Indonesia's SPS policy on food product imports is robust, five regression stages are carried out on each model, so the estimation results in the following Table 9 and 10 are obtained. Based on the estimation results, the relationship of food safety standards explained by the coverage ratio variable of the SPS policy (CR) in both models tends to be consistent both in signs and significance even though it is added to the control variable. Therefore, it can be said that the influence of Indonesia's SPS policy on food product imports is robust.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

CONCLUSION

Tariff liberalization aims to reduce barriers to international trade. However, the emergence of an agreement on SPS measures caused trade barriers shifting from tariffs to non-tariff barriers (NTM). The SPS policy generally regulates requirements regarding the import of food products. The WTO agreement on the adoption of SPS measures allows countries to adopt their regulations impacting the diversity of food safety standards established throughout the world.

Empirical studies regarding the impact of food safety standards on trade have been carried out. However, most were conducted to determine the impact of a specific measure of SPS policy on trade. Besides that, most studies only see the aggregate impact of food product exports from developing countries to developed countries.

In aggregate, CR from Indonesia's SPS policy has a negative and significant impact on imports of food and agricultural products. While the impact differs between exporting countries which can be developed or developing, developed countries tend to benefit from the enactment of SPS policies in Indonesia, which are shown with significant and positive impacts. On the other hand, CR for developing countries has a negative and significant impact.

The increase in the percentage of CR in imports of food and agricultural products from developed countries tends to increase the value of imports. This was seen especially in the period from 2007 to 2014, the increase in the average percentage of CR caused an increase in the value of imports. As for developing countries, an increase in the percentage of CR from Indonesia's SPS policy tends to cause a decline in the value of imported food and agricultural products from these countries. The percentage of CR for the three models did not differ significantly. In aggregate conditions, the average percentage of CR per year is 24.76%. On the other hand, in disaggregated conditions, the average annual percentage of CR is 25.53% and 22.98% respectively for developed and developing countries. Thus, it can be stated that the coverage of imported food and agricultural products affected by Indonesia's SPS policy is only around 25 percent of the total product.

Based on estimates from developing countries, Indonesia's SPS policy has a negative impact on imports of food and agricultural products. The decline in exports of food and agricultural products originating from developing countries can be an opportunity for domestic production to fill the domestic market. However, it should also be remembered that in the next few years these developing countries will be able to meet the standards set in Indonesia. Therefore, the Indonesian government is expected to encourage increased productivity and quality of products produced by domestic producers.

Imports of food products not only occur because of a lack of domestic supply but also due to market mechanisms. As the Indonesian economy continues to grow, so does its middle class. Therefore the demand for food will be higher, especially for quality food

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

products because the Indonesian people generally prefer imported products that are considered to have better quality, better taste, and more attractive packaging than domestic products.

Imported food products are considered superior to domestic products also because the SPS policy set by the government mostly applies only to imported products and not local products. Therefore, for local products to be more attractive to the public, the Indonesian government is expected to encourage an increase in the quality and quality of products produced by domestic producers to improve the competitiveness of domestic food products.

REFERENCES

Ali, S. (2016). Export Response to Sanitary and Phytosanitary Measures and Technical Barriers to Trade: Firm-level Evidence from a Developing Country. *CREDIT Research*, Paper No. 16/02.

Anders, S. & Caswell, J. (2009). Standards as Barriers Versus Standards as Catalysts: Assessing the Impact of HACCP Implementation on U.S. Seafood Imports. *Department of Resource Economics*, Working Paper Series No. 2007-7.

Antonucci, D. & Manzocchi, S. (2006). Does Turkey have a special trade relation with the EU? A gravity model approach. *Journal Economic System*, *30*, 157-169.

Atici, C. (2013). Food Safety Regulations and Export Responses of Developing Countries: The Case of Turkey's Fig and Hazelnut Exports. *FAO Commodity and Trade Policy Research*, Working Paper Series No. 39.

Bao, X. & Qiu, L. (2012). How Do Technical Barriers to Trade Influence Trade? *Review of International Economics*, *20*(4), 691–706.

Becker, G. S. (2006). Sanitary and Phytosanitary (SPS) Concern in Agricultural Trade. *CRS Report for WTO Congress*, Order Code RL33472.

Bouguettaya, A. & Viet, Q. (1998). Data clustering analysis in a multidimensional space. *Information Sciences*, *112*, 267-295.

Bratt, M. (2017). Estimating the bilateral impact of non-tariff measures (NTMs). *Review of International Economic*, 1-25.

Buzby, J. C. & Unnevehr, L. (2003). Introduction and overview. In: Buzby. J.C. (Ed.), *International Trade and Food Safety*, *Economic Theory and Case Studies*. United States Department of Agriculture (USDA) Economic Research Service, 1-9.

Chen, C., Yang, J. & Findlay, C. (2008). Measuring the Effect of Food Safety Standards on China's Agricultural Exports. *Review of World Economics/Weltwirtschaftliches Archiv*, *144*, 83-106.

Crivelli, P. & Gröschl, J. (2016). The Impact of Sanitary and Phytosanitary Measures on Market Entry and Trade Flows. *The World Economy*.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

Dahar, D., Oktaviani, R. & Rindayati, W. (2014). "*Analisis Pemberlakuan Non Tariff Measures (NTM) Pada Ekspor Hortikultura Indonesia ke Negara ASEAN* +3" [Analysis of the Application of Non-Tariff Measures (NTM) in Indonesia's Horticultural Exports to ASEAN Countries +3]. *Bina Ekonomi Majalah Ilmiah Fakultas Ekonomi Unpar, 18*.

Deardoff, A. & Stern, R. (1997). Measurement of Non-Tariff Barirers. *Organization for Economic Co-Operation and Development*.

Devadason, E., Chandran, V. & Kalijaran, K. (2017). Harmonization of Food Trade Standards and Regulations in ASEAN: The Case of Malaysia's Food Imports. *International Association of Agricultural Economists*, *49*, 97-109.

Disdier, A. C., Fontagné, L. & Mimouni, M. (2008). The Impact of Regulations on Agricultural Trade: Evidence from the SPS and TBTAgreements. *American Journal of Agricultural Economics*, *90*, 336-350.

Dou, L., Yanagishima, K., Li, X., Li, P. & Nakagawa, M. (2015). Food safety regulation and its implication on Chinese vegetable exports. *Food Policy*, *57*, 128-134.

Egger, P. (2005). Alternative Techniques for Estimation of Cross Section Gravity Models. *Review of International Economics*, *13*, 881-891.

Ekananda, M. (2012). *Analisis Ekonometrika Data Panel* [*Econometrics Analysis Panel Data*]. Jakarta: Mitra Wacana Media.

Ekananda, M. (2016). *Analisis Ekonometrika Data Panel Edisi 2: Teori Lengkap dan Pembahasan Menyeluruh bagi Penelitian Ekonomi, Bisnis, dan Sosial* [*Data Panel Econometrics Analysis Complete 2nd Edition: Theory and Thorough Discussion of Economic, Business and Social Research]*. Jakarta: Mitra Wacana Media.

Ekananda, M. (2018). Analysis of the Implementation of European Union Food Safety Standards (Ec) No.1881/2006 Towards The Export of Nutmeg, Pepper, Ginger Cinnamon and Coffee from Indonesia. *Advance Science Letters*, *24*, 5027-5032.

ERIA-UNCTAD. (2016). *Non-Tariff Measures in ASEAN*.

Ferrier, P. (2014). *The Effects of Phytosanitary Regulations on U.S. Imports of Fresh Fruits and Vegetables.* Washington DC: Economic Research Report No.168.

Ferro, E., Otsuki, T. & Wilson, J. (2015). The effect of product standards on agricultural exports. *Food Policy*, *50*, 68-79.

Gujarati, D. N. (2003). *Basic Econometric, Fourth Edition.* New York: McGraw-HiII.

Harahap, P. N. (2015). *Peran Implementasi Standar Keamanan Pangan Uni Eropa EC No1881/2006 pada Ekspor Pala, Lada, Jahe, Kayu Manis dan Kopi Indonesia* [*The Role of the Implementation of European Union Food Safety Standards EC No1881/2006 in the Export of Nutmeg, Pepper, Ginger, Cinnamon and Indonesian Coffee*]. Lontar UI.

Hejazi, M., Grant, J. & Peterson, E. (2016). Hidden Trade Costs? Maximum Residue Limits and US Exports to Trans_Atlantic and Trans-PAcific Trading Partners. *Agricultural & Applied Economics.* Boston.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

Hermianti. (2015). *Dampak Implementasi Regulasi Tentang Pengendalian Sistem Jaminan Mutu dan Keamanan Hasil Perikanan Terhadap Ekspor Perikanan Indonesia* [*Impact of Regulation Implementation on Quality Control and Safety of Fishery Product Safety Systems for Indonesian Fisheries Exports*]. Lontar UI.

Josling, T., Roberts, D. & Orden, D. (2004). *Food Regulation and Trade: Toward a Safe and Open Global System-An Overview and Synopsis*. Institute for International Economics, Washington DC.

Kareem, F. O., Martinez-Zarzoso, I. & Brümmer, B. (2017). Protecting Health or Protecting Imports? Evidence from EU Non-Tariff Measures. *International Review of Economics and Finance*. doi:10.1016/j.iref.2017.08.012.

Keiichiro, H., Otsuki, T. & Wilson, J. (2015). Food Safety Standards and International Trade: The Impact on Developing Countries' Export Performance. In A. Hammoudi, C. Grazia, Y. Surry, & J.-B. Traversae, *Food Safety, Market Organization Trade and Development*, 151-166. Switzerland: Springer.

Korinek, J., Melatos, M. & Rau, M. L. (2008). A Review of Methods for Quantifying the Trade Effects of Standards in the Agri-Food Sector. *OECD Trade Policy*, Papers No. 79.

Krugman, P., Obstfeld, M. & Melitz, M. (2012). *International Economics, Theory and Policy*. Ninth Edition. Boston: Pearson.

Marette, S. & Beghin, J. (2010). Are Standards Always Protectionist? *Review of International Economics, 18*, 179–192.

Masakure, O., Henson, S. & Cranfield, J. (2009). Standards and export performance in developing countries: Evidence from Pakistan. *The Journal of International Trade & Economic Development, 18*, 395-419.

Melo, O., Engler, A., Nahuehual, L., Cofre, G. & Barrena, J. (2013). Do Sanitary, Phytosanitary, and Quality-related Standards Affect International Trade? Evidence from Chilean Fruit Exports. *World Development, 54*, 350-359.

Memon, M. H., Baig, W. S. & Ali, M. (2008). *Causal Relationship Between Export And Agricultural GDP in Pakistan*. MPRA Paper No. 11845.

Mustafa, K. & Ahmad, S. (2004). Barriers against Agricultural Exports from Pakistan: The Role of WTO Sanitary and Phytosanitary Agreement. *The Pakistan Development Review, 42*, 487-510.

Nugroho, P. (2016). *Daya Saing dan Pengaruh Standar Keamanan Pangan Terhadap Ekspor Hortikultura Indonesia* [*Competitiveness and Effect of Food Safety Standards on Indonesia's Horticultural Exports*]. IPB Repository.

Orefice, G. (2016). Non-Tariff Measures, Specific Trade Concerns and Tariff Reduction. *The World Economy*.

Othman, N. M. (2014). Food Safety in Southeast Asia: Challenges Facing the Region. *Asian Journal of Agriculture and Development, 4*, 83-92.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

Otsuki, T., Wilson, J. & Sewadeh, M. (2001). What Price Precaution? European Harmonisation of aflatoxin regulations and African groundnut exports. *European Review of Agricultural Economics, 28,* 263-283.

Peterson, E., Grant, J., Robert, D. & Karov, V. (2013). Evaluating The Trade Rstrictiveness of Phytosanitary Measures on U.S. Fresh Fruit. *American Journal of Agricultural Economics*.

Roberts, D., Josling, T. & Orden, D. (1999). *An Economic Research Service Report, A Framework for Analyzing Technical Trade Barriers in Agricultural Market.* Washington DC: United State Department of Agriculture.

Ronen, E. (2016). Tariff and non-tariff measure: substitutes or complements. A cross-country analysis. *Bank i Kredyt, 48,* 45-72.

Salvatore, D. (1997). *International Economics.* New Jersey: Prentice Hall-Gale.

UNCTAD. (2013). *Non-Tariff Measures To Trade: Economic and Policy Issues for Developing Countries*. United Nations Publication.

Unnevehr, L. (2003). *Food Safety in Food Security and Food Trade: Overview.* Washington, DC: International Food Policy Research.

USDA. (2003). *International Trade and Food Safety, Economic Theory and Case Study.* Agricultural Economic Report No. 828.

Wei, G., Huang, J. & Yang, J. (2012). The impacts of food safety standards on China's tea exports. *China Economic Review, 23,* 253-264.

Wooldridge, J. M. (2002). *Econometric Analysis of Cross Section and Panel Data.* London, England: The MIT Press.

WTO. (2003). *Special Meeting on the SPS Committee on the Operation of Enquiry Points-Communication by Department of Plant Protection of Pakistan.*

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:36.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 7

INTERGENERATIONAL INCOME MOBILITY AMONG SONS AND DAUGHTERS IN INDONESIA

Restananda Nabilla Yusacc [*] ***and Dwini Handayani***
Departement of Economics, Universitas Indonesia, Depok, Indonesia

ABSTRACT

On the topic of intergenerational income mobility, limited studies are covering developing country and gender differences due to limitations in data, particularly for informal-employed individuals and women. Sons and daughters in a more traditional society like Indonesia are expected to fill certain roles, whether it is by their parents or society. Therefore, sons and daughters will possess different characteristics, both in childhood or adulthood. As a society advances, not only the difference in sons and daughters persisted, but also a difference among generations. This study aims to explain the condition of intergenerational income mobility in Indonesia and the difference between sons and daughters. Using data from Indonesia Family Life Survey 5, estimation is done through Ordinary Least Squared and Heckman Selection. This study found that Indonesia is in the intermediate level of intergenerational income mobility, and differences among sons and daughters existed when controlling for personal characteristics. A child's education gives greater benefit than the parent's education, an indication of equality of opportunity. For sons, marriage gives greater benefits as a means to increase their personal income because they are expected to provide for their families. For daughters, living in an urban area and being formally employed give greater benefits as a means to increase personal income because there are better opportunities.

Keywords: intergenerational income mobility, gender differences, Heckman selection

[*] Corresponding Author's E-mail: rnyusacc@gmail.com.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:47:46.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 7

INTERGENERATIONAL INCOME MOBILITY AMONG SONS AND DAUGHTERS IN INDONESIA

Restananda Nabilla Yusacc [*] ***and Dwini Handayani***
Departement of Economics, Universitas Indonesia, Depok, Indonesia

ABSTRACT

On the topic of intergenerational income mobility, limited studies are covering developing country and gender differences due to limitations in data, particularly for informal-employed individuals and women. Sons and daughters in a more traditional society like Indonesia are expected to fill certain roles, whether it is by their parents or society. Therefore, sons and daughters will possess different characteristics, both in childhood or adulthood. As a society advances, not only the difference in sons and daughters persisted, but also a difference among generations. This study aims to explain the condition of intergenerational income mobility in Indonesia and the difference between sons and daughters. Using data from Indonesia Family Life Survey 5, estimation is done through Ordinary Least Squared and Heckman Selection. This study found that Indonesia is in the intermediate level of intergenerational income mobility, and differences among sons and daughters existed when controlling for personal characteristics. A child's education gives greater benefit than the parent's education, an indication of equality of opportunity. For sons, marriage gives greater benefits as a means to increase their personal income because they are expected to provide for their families. For daughters, living in an urban area and being formally employed give greater benefits as a means to increase personal income because there are better opportunities.

Keywords: intergenerational income mobility, gender differences, Heckman selection

[*] Corresponding Author's E-mail: rnyusacc@gmail.com.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:00.

INTRODUCTION

The illustration of three different people with different heights being given either equal size of the box, or size of the box relative to their height to be able to see the same view, is probably one of the most famous depictions of what equality is. In an ideal world, someone's upbringing should not be an obstacle they have to overcome and with an equal amount of effort and motivation, everyone can have the opportunity to reach their dreams. But in reality, inequality persists and had been studied for decades. Those who are in the higher percentile of income and could suffice their needs, especially basic needs, generally have higher well-being than those with lower income. As Haughton & Shahidur (2009) explained further, lower well-being could be interpreted as signs of poverty. One of 17 major goals in Sustainable Development Goals (SDGs) 2030 is to eradicate poverty. Indonesia, as a member of the United Nations, is focused on attaining this goal. As expected from a developing country, Indonesia is still experiencing growth at an alarming rate. This increase is accompanied by reflection upon success on the national family planning program established in the late 1970s. The fertility rate and population growth are decreasing, whereas, in 2015, the fertility rate is 2.39, even lower than the world fertility rate. Population growth at 1.137% in 2016 is also one of the lowest in Indonesian history (Indonesia National Statistics Agency, 2016). Indonesia is experiencing what is called a demographic dividend or demographic bonus. Changing age structure could boost economic growth and family welfare. With a more working-age population and lower dependency ratio, this could create a spillover effect on total income per person (Lee & Mason, 2007). However, this gain is not always shared equally between generations, even within generations. In Taiwan, children and young adults received the highest benefit and the elderly received the lowest benefit. This generational difference is related to intergenerational income mobility.

Intergenerational income mobility measured the transmission between age group or called intergenerational earnings elasticity (IGE), particularly from a parent to his/her child, whether it is difficult or not to move up the ladder to a higher income class than their parents. However, in a country where income inequality persisted, the persistence level will be higher (Corak, 2013). Meaning that a child born into a rich family will be a rich adult and a child born into a poor family will be a poor adult. An example is the United States where there is an 'American Dream' phenomenon which turned out American Dream is not easily achieved by all individuals. It still depends largely on an individual's background, hurting more immigrants that has vulnerable characteristics. The relationship between a country's IGE and income inequality is shown in The 'Great Gatsby' Curve, introduced by Alan Krueger in 2012, which showed a linear relationship. In Indonesia, Gini ratio in 2017 is 0.391 while IGE needs to be further investigated.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:00.

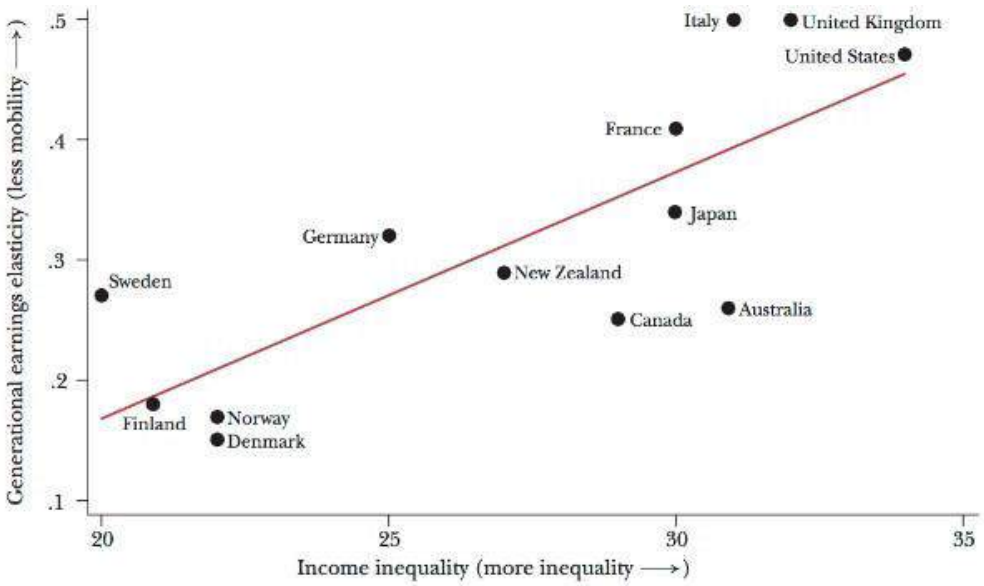


Figure 1. The 'Great Gatsby' Curve.

Income inequality is a major concern for social and economic justice – especially in welfare states such as Scandinavian countries. But from another perspective, the major concern could be equality of opportunity. In other words, unrelated to family and demographic background, every child should have the same opportunity to attain higher income. Income inequality in Indonesia is even wider between men and women, UNDP (2016) reported a gap in GNI per capita around 6000 USD. By international standards, Indonesian women's labor force participation is still low especially among married women (Cameron & Suarez, 2017). Ratio of female-to-male labor force participation rate fluctuated over the last decade, showing 62% in 2017 while average for lower middle-income countries is 65% (World Bank, 2017). In traditional Indonesian culture, tribes in Indonesia emphasize on a child's duty towards their parents (Frankenberg et al., 2002). With this paternalistic behavior and patriarchal society in Indonesian culture, son as the breadwinner for their family is expected to give more transfers in the future. This makes sons – in most cases if not all – gave higher return of parental investment in children in the future if seen from monetary value. Thus, parental investment in children differ between son and daughter. It is described that after marriage, women's role is to maintain the household and dedicate her time to her husband and children, whereas men are the head of household and are expected to be the main provider for the household (Lahiri-Dutt & Robinson, 2008). A common perspective, mostly in rural areas, a daughter's future could rely on their future spouse. Hence, parents are less inclined to invest more in daughter's education or financial security. The distinction between men and women in this study is important due to these realizations. However, parts of intergenerational

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:00.

income mobility studies on gender differences remain unstudied due to lack of proper data and low female labor force participation rate in some countries (Sirniö et al., 2013).

This study aims to look further on intergenerational income mobility in Indonesia, particularly on differences between gender. This study will look up the relationship between parents' income with son and daughter's income, whether it is direct relationship or indirect relationship.

ANALYTICAL FRAMEWORK

Parents are figures who give largest resources to their children, the most important one being genetic. Others are economic resources, human capital resources, social capital resources, culture and norms (D'Addio, 2007). This process of allocation of resources or transfer of resources from parents to children is intergenerational transmission. The more alike the condition of parents and children, the transmission process can be regarded as significant, where a child's accomplishment is related to their parents' background. Therefore, the starting point of every child may be different in line with their own parents' background. As children grow up, entering school age and later on labor market, this gap will be wider and more visible between child in every family (Bloome, 2014). From that statement, the relation of parents' socioeconomic status to children's socioeconomic status in adulthood is called intergenerational mobility (Causa and Johansson, 2009). This mobility could be: (1) upward mobility, which is when children have higher socioeconomic status than their parents; (2) immobility, which is when children's socioeconomic status are the same with their parents; (3) downward mobility, which is when children have lower socioeconomic status than their parents. Lillard and Kilburn (1995) explained that earnings regressed toward the mean over successive generation. The concept of intergenerational income mobility is further explored by social researchers such Becker and Tomes (1979, 1986). They presented a theory of inequality and intergenerational mobility under assumptions that each family maximizes a utility function spanning over several generations, which depends on consumption of parents and quantity and quality of children. That assumption holds under the assumption that parent have altruistic nature towards their children.

Roemer (2005) stressed the nature of circumstances and effort. Circumstances refer to an uncontrolled condition where effort could be controlled by an individual. Therefore, in an ideal and equal world, an individual's achievement should depend only on effort, not uncontrolled circumstances. Therefore, equality of opportunity means giving equal access to each and every individual to reach their best potential. This is a broader definition of equality of opportunity. A socioeconomic condition of a child when they are born should not define their achievement in adulthood (World Bank, 2006). Assuming the altruism nature of parents and investment in children will persist, no matter how

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:00.

complex the government intervention to level this, Roemer (2005) argued that parents would still influence their children through: 1) social connections that facilitate access to education and jobs; 2) family culture and investments that influence skills, beliefs, and motivation; 3) genetic transmission of ability. Thus, IGE coefficient is almost impossible to be zero. But he viewed zero as the ideal. In his own words, this is "a view that only a fraction of those who consider the issue would, upon reflection, endorse". Zero IGE requires complex and invasive intervention to family lives. Therefore, to know the ideal or preferred IGE it is essential to see comparison within and between countries.

There are number of studies regarding to intergenerational income mobility that distinguish between sons and daughters (Lillard and Kilburn, 1995; Chadwik and Solon, 2002; Lefranc et al., 2010, 2014; Hirvonen, 2008; Dang, 2015; Olivetti and Paserman, 2011). The reasoning behind this is due to previous works had always been focused on sons rather than daughters (Chadwik & Solon, 2002). This stems from unconscious sexism and since women's labor force participation rate is lower than men's, using women's earnings as a proxy for economic status might be unreliable. Previous studies which included daughter's role have excluded women with zero earnings without attention to their predicted income or to their husband's earnings/family earnings. Lillard & Kilburn (1995) included Becker's theory of assortative mating (1973, 1974) to provide a distinction between men and women in intergenerational income mobility. In marriage market model, both husband and wife will create joint output – market output and home production output. 'Matching' in order to maximize joint output created what is called as positive assortative mating. Thus, all outputs (joint output, market output and home production output) are highly correlated. The role of each gender is not specified by Becker & Tomes in terms of output production. In the case of Malaysia, an assumption where husband produce the majority of market output and wife produce the majority of home production is used. This also applies to Indonesia where gap between female and male labor force participation is still wide. This is the reason why Lillard & Kilburn chose observable market output as a proxy for joint household output. In the context of intergenerational income mobility, then father's income become the proxy to estimate the mobility and transmission to son's income.

Lefranc et al. (2014) explored intergenerational income mobility in Japan among son and daughter born between 1937 and 1975. A sustained image of Japan is fairly equal society with low income differentials and limited poverty. Conflicting situation arises when culture is taken into account. どりゅく は むくわれる (read: doryuku wa mukuwareru) translates to "effort pays", a popular belief in Japan when someone is rewarded because of their hard work. But Japan's educational system is very competitive and entering prestigious universities means more investment from the family. Parents often invest in "shadow education" (Stevenson and Baker, 1992). Therefore, family background also plays a role. Lefranc et al. used Social Stratification and Mobility (SSM) data between 1955 to 2005 using two-sample instrumental variables (TSIV) approach,

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:00.

where they estimate father's income based on several variables such as education and job characteristics. TSIV is used because the available dataset does not provide information on father's income. They also used Heckman Selection to reduce selection bias occurring from omitted sample of daughters that has no information on income. Different combinations of income measures are used: 1) child's own income on father's income; 2) child's own income on father's family income; 3) child's family income on father's family income. The result is intergenerational income elasticity (IGE) for both son and daughter do not differ very much, sitting at 0.35 which is an intermediate value. But the difference is while son's result is high using his own income, daughter's result is significantly higher when regressed using her family income. This shows different channel in intergenerational income mobility, despite over the last decades intergenerational mobility in Japan is stable. Lefranc et al. (2010) in previous study compared the condition of Japan to France, but only measuring the relationship between father and son due to limited data for women in Japan using the chosen data. The result is Japan has a higher mobility than France due to higher investment in education and difference in return on education, where going to a prestigious higher education has more return in Japan than in France.

A study adopting Chadwik and Solon (2002) model is Hirvonen (2008). The highlight of this study is the result comparison between Sweden and United States in intergenerational mobility and the role of assortative mating. The difference with Chadwik and Solon is instead of using individual income, Hirvonen used family income and income status as a broader measurement and quantile regression approach. The result indicates that IGE is lower than United States, but more or less the same for son and daughter which is around 0.2. Therefore, upward intergenerational income mobility is stronger in Sweden and the impact of family background on economic status is less strong in Sweden than United States. This supported the notion that equality of opportunity existed more in Swedish society. However, intergenerational mobility is higher in women than men suggesting that daughter's family earnings is more correlated to their family earnings. With quantile regression, higher IGE for both son and daughter is more persistent at the top of income distribution than the bottom. This is an indication of richer family tend to give bequests to their offspring, where wealth is a more important indicator than labor income for those in the higher quantiles. For the lower and middle-income class, higher mobility is found and in the perspective of equality of opportunity this points to the right direction.

A similar study with different approach is conducted by Olivetti and Paserman (2011) where they examine intergenerational income mobility and marriage in the United States between 1850 and 1930. With historical data, they used first name matching method between white male children aged 0-15 in the former census and matched it with white male adult aged 30-45 and calculate the average of their earnings with respect to their father's earnings in 1850. Between 10 to 15 percent of total variation in father's

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:00.

socioeconomic status can be explained by variation between children's names. Through this, they were able to distinguish ethnic names and identify immigrants. The result is father and son IGE increased consistently between 1850 and 1930, but at the beginning of sample period father and son in law IGE is higher and remained stable over time. As a result, when excluding the role of daughter in historical data – although historically equality is incomparable to today and data on women might be limited – the result might not able to capture the persistence of socioeconomic status between parent and children.

Dang (2015) explored intergenerational income mobility in Vietnam for both son and daughter using Vietnam Living Standards Survey (VLSS) for 1997-1998 and 2012 using Two Sample Two Stage Least Squares (TS2LS). The study used individual earnings as an indicator rather than family earnings to measure IGE and they measure the difference between co-residing children and all children. The result showed that Vietnam has intermediate level of intergenerational mobility, around the same position as Japan (Lefranc et al., 2014), Taiwan (Kan et al. 2015), and South Korea (Kim, 2013). The result varies between sub sample such as age groups, when older children tend to have higher IGE than younger children. This is in line with the pattern on IGE estimates based on previous studies where there is the existence of age effects. Haider and Solon (2006) in Dang (2015) mentioned that IGE estimates could possibly biased when children's income is measured at a young or old age. The bias then came into minimum point at the age of 40, in line with age earning profile. The data in this study contained more young people and might produce lower IGE estimates, by comparison with other countries with same condition as Vietnam.

Intergenerational income mobility had been studied and continued to be studied until now. Different measure and approaches is broadly used and there is no single consensus on which approach is best for studying this since the problem of imperfection in data and differences in every country's data that needs specific approach. As seen from previous studies above, study in developing countries are still limited and a comparison not only cross country but within country is an advantage. Therefore, this study aims to contribute to this growing bodies of literature.

METHODS

This study is using Indonesia Family Life Survey (IFLS) 5 which is published in 2014. This study will employ econometrics model using Ordinary Least Squared (OLS), following the standard IGE estimates and adding variables adjusting to the availability of IFLS data and considering method from previous studies such as Dang (2015) which shared the similarities due to both study is for son and daughters, and from developing countries. The model is following Mincerian Equation, as introduced by Jacob Mincer (1974) to observe determinants of income, mostly as a return on education. In this study,

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:00.

besides years of schooling, work experience and quadratic of work experience with age as the proxy, to observe the parent-child relation other variables is added as well. As for Heckman selection model, Inverse Mill's Ratio is added to minimize selection bias. The significance of Inverse Mill's Ratio, noted as λ, is taken into account whether it is needed to use Heckman Selection or not.

The sample of this study is individuals aged 25 to 54 whose status is a child, whether it is biological or non-biological. The rationale for the choice of this age range is based on an age range to minimize lifecycle bias suggestion from Haider and Solon (2006) in Dang (2015). In this age range, the median is 40 which is highest peak or the turning point on age earning profile (Taubman and Wales, 1974). As IFLS5 is considered as a data with younger population since the average age is 30, including those below 25 years of age increase the possibility of downward bias and lower the estimation (Hertz et al., 2007). Sample is then divided into age categories per 5 years and create 6 age groups. The data cleaning process is to omit those who is not listed as children and outside of 25 to 54 age group. After the data cleaning, the sample that is available is 16.868 individuals, with 8.707 sons and 8.161 daughters.

Model 1. Estimation for Parent's Income and Children's Income

$$lnincomecm = \alpha + \beta_1 lnincomefa + \beta_2 lnincomemo + \varepsilon$$

$$lnincomecf = \alpha + \beta_1 lnincomefa + \beta_2 lnincomemo + \varepsilon$$

Table 1. Variable Description

Variable	Variable	Description
Son's income	$lnincomecm$	Log income of sons, in Rupiah
Daughter's income	$lnincomecf$	Log income of daughters, in Rupiah
Father's income	$lnincomefa$	Log income of fathers, in Rupiah
Mother's income	$lnincomemo$	Log income of mothers, in Rupiah
Age	age	Age, in year
Son's Education	$childseduc_m$	Son's year of schooling, in year
Daughter's Education	$childsedu_f$	Daughter's year of schooling, in year
Father's Education	$fatherseduc$	Father's year of schooling, in year
Mother's Education	$motherseduc$	Mother's year of schooling, in year
Work Status	$work$	Dummy variable, with 1 = Formal Sector; 0 = Informal Sector
Marital Status	$marital$	Dummy variable, with 1 = Married; 0 = Not Married
Place of Residence	$urbanrural$	Dummy variable, with 1 = Live in urban area; 0 = Live in rural area

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:00.

Model 2. Estimation for Son

$$lnincomecm = \alpha + \beta_1 lnincomefa + \beta_2 lnincomemo + \beta_3 age + \beta_4 agesq + \beta_5 childseduc_m + \beta_6 fatherseduc + \beta_7 motherseduc + \beta_8 work + \beta_9 marital + \beta_{10} urbanrural + \varepsilon$$

Model 3. Estimation for Daughter

$$lnincomecf = \alpha + \beta_1 lnincomefa + \beta_2 lnincomemo + \beta_3 age + \beta_4 agesq + \beta_5 childseduc_f + \beta_6 fatherseduc + \beta_7 motherseduc + \beta_8 work + \beta_9 marital + \beta_{10} urbanrural + \varepsilon$$

In this model, as the independent variable is income, constant's lower bound is estimated to be equal or higher than zero. The dependent variable is parent's income, age, age-squared, residence in urban or rural area, education, father's education, mother's education, work status, and marital status. Whereas β_1 and β_2 is the IGE, the coefficient is expected to vary between 0 to 1, meaning that 0 when there is no relation between parent's income and children's income at all, but this case is never found in previous studies as parents are assumed to be altruistic thus give a form of investment in children. Taking out investment in children might also still result in IGE of more than 0 since children inherit genetics from their parents that can alter irreplaceable traits such as cognitive skills and health. On the opposite, if IGE is 1, then the transmission is high – more or less equally the same. Both age and squared age is used in this model due to the nature of life-cycle earnings. As in education, the coefficient is estimated to be lower as years of education goes up. But there is an exception for daughter's tertiary education, as Dang (2015) found a higher degree of persistence. Work status in this study is used to distinguish mainly for informal and formal workers. It is expected that formal workers would have higher job security and stability, so coefficient is estimated to be higher. As for marital status, it is expected that marriage contributes to productivity, therefore coefficient is estimated to be higher.

RESULTS AND DISCUSSION

The summary statistics of variables of this study is presented in table 2. Both of average parents' income is higher in daughter than son, and parents' education is higher for daughter, especially mother's education. While daughter's education is higher than son's, the standard deviation shows that son's education is more persistent among the

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:00.

population. As for age, since the sample already defined age of 25 to 54 there is not much difference between son's and daughter's age. For work status (both son and daughter) the mean is 0.33 and closer to [0 = informal] which means most are employed in informal sector. For marital status, both son and daughter are mostly married, shown in mean of 0.79 and 0.88 [1 = married.] For rural/urban, there is indication of oversampling to urban in IFLS as described by Witoelar, Strauss & Sikoki (2009) since the mean is more than 0.5, closer to [1 = urban]. Widely, the sample consisted of more individuals who worked in informal sector and living in urban area. A more detailed explanation on these variables is provided below and in appendix.

The sample of this study is individuals aged 25 to 54 by the time the interview was conducted, with status as a child whether it is biological or non-biological. The reasoning behind this age group is to minimize life-cycle bias (Haider & Solon 2006). Respondents are divided by sex; male or female, to distinguish between son and daughter. This study includes all respondents with information on income and/or work status, such as parents and/or children who is unpaid family worker with no income information: in this case, the income is predicted by utilizing Heckman Selection Model to include both uncensored and censored observation. To measure the intergenerational income mobility, the sample is divided into age group of 5 years, starting from 25 to 29 and ending in 50 to 54. This generate 6 age groups to be observed. The sample consisted of 16.868 individuals, which 8.707 are sons and 8.161 are daughters. However, those with information on income consisted only of 6.034 sons and 5.036 daughters, or 11.070 individuals. This means 5.798 individuals does not have income information and be predicted by Heckman Selection Model.

Table 2. Summary Statistics of Variables

	Son		**Daughter**	
Variables	**Mean**	**Std. Dev**	**Mean**	**Std. Dev**
Log of Income	16.31	1.88	15.78	1.96
Log of Father's Income	16.21	1.15	16.55	1.21
Log of Mother's Income	9.71	2.01	11.21	1.85
Child's Education	8.7	1.95	10.3	3.53
Father's Education	4.2	2.76	4.5	2.51
Mother's Education	3.7	3.12	5.1	4.09
Age	32.9	5.76	32.7	5.67
Age^2	1115.87	405.26	1104.05	399.12
Work Status	0.33	0.39	0.34	0.47
Marital Status	0.79	0.48	0.88	0.45
Rural - Urban	0.56	0.43	0.54	0.49
No. of Observations	8707		8161	

Source: IFLS5, Summarized by Author (2018)

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:00.

Table 3. Average Income Based on Age Group for Son and Daughter

	Son		Daughter	
Age Group	**Avg. Income**	**No. of Observation**	**Avg. Income**	**No. of Observation**
25-29	1,760,000	1885	1,540,000	1762
30-34	1,920,000	1699	1,780,000	1402
35-39	2,107,000	1021	1,910,000	976
40-44	2,205,400	781	2,123,000	531
45-49	2,256,000	453	2,212,000	211
50-54	2,304,100	225	2,287,000	154
Avg. Income (Weighted)	2,010,000	6034[1]	1,750,000	5036
Avg. Income (Log)	16.31		15.12	

Source: IFLS5, Summarized by Author (2018)

[1]The number of observation in this table is lower than number of sample since this table only include those with information on income.

The table 3 described the average income based on age group for both son and daughter. The difference between age group is following Mincer's Age Earning Profile (Mincer, 1974) where increase in income tend to decrease over time. In general, son earned higher salary than daughter in age 25 to 39 and the gap gradually decrease by the age of 40. Continuous full-time employment during pregnancy is rare (Moen, 1985). Therefore, women in age 40 is more likely to be on continuous full-time employment or on intermittent employment (half full-time and half part-time). The average income for son and daughter differs by Rp 2,600,000 or Rp 31,200,000 full year. Wicaksono, Amir & Nugroho (2017) summarize the statistics of IFLS5 for log per capita income, the result is 15.33 which still fits the range of average income for son of 16.31 and daughter of 15.12 in this study.

Based on the table below, upward intergenerational income mobility existed in Indonesia. The level of persistence or IGE rises as age group gets older; younger individual is relatively more mobile than older individual. In other words, as an individual is younger, their income level is less defined by their parent's income. However, as an individual gets older, their income level is more similar to their parent's than younger individual. The explanation for this difference could be for children's education (years of schooling), younger age group has higher education than older age group. Higher education could lead to better labor market outcome since it opened the door to enter higher-paying job especially in formal sector where an individual obtained a stable salary than in informal sector. Educational factors (higher educational attainment and equal educational distribution) is significant for equal income distribution (Gregorio and Lee, 2002). Along with government's policy such as 9 years of compulsory education, government's budget allocation for education, and aid or social expenditure for low-income students (Suharti, 2013), younger age group gain higher benefit from education, thus better market outcome.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:00.

Table 4. Level of Persistence to Father's Income

	Age Group						
	20-24#	**25-29**	**30-34**	**34-39**	**40-44**	**45-50**	**51-54**
All	0.1351**	0.2203**	0.2686**	0.2876**	0.3327*	0.3513*	0.3728*
Son	0.1575**	0.2461**	0.2512**	0.2627**	0.2958*	0.3201*	0.3526*
Daughter	0.1035**	0.1650**	0.2870**	0.3062**	0.3627*	0.3844*	0.4121*

Source: IFLS5, Summarized by Author (2018)

Table 5. Level of Persistence to Mother's Income

	Age Group						
	20-24#	**25-29**	**30-34**	**34-39**	**40-44**	**45-50**	**51-54**
All	0.1284**	0.1527**	0.2512**	0.3023**	0.3120*	0.3372*	0.3610*
Son	0.1023**	0.1532**	0.2017**	0.2312**	0.2409*	0.2191*	0.1928*
Daughter	0.1472**	0.1501**	0.2794**	0.3223**	0.3445*	0.3683*	0.4028*

Source: IFLS5, Summarized by Author (2018)

In the income matrix of parent's and child's income below, there is 'stickiness' – the tendency to stay in the income group they were born into. The pattern is different from sons where stickiness lies at the top, for daughter the stickiness lies at the bottom. Therefore, daughters who are born into poor families are more prone to being poor in adulthood.

The estimation result below is robustness check of father's & mother's income to children's income after adding other variables. Personal characteristics such as place of residence, their own education, marital status is added, along with other parental characteristics such as father's education and mother's education. The result shows that after adding variables, father's & mother's income is still significant to children's income.

Table 6. Income Matrix of Son and Parents

	Son's Income Quartile			
Father's Income Quartile	**Bottom**	**Second**	**Third**	**Top**
Bottom	38.12%	25.12%	22.76%	14.00%
Second	21.13%	23.51%	31.77%	23.59%
Third	16.52%	32.12%	26.25%	25.11%
Top	10.51%	15.80%	34.59%	39.10%
	Son's Income Quartile			
Mother's Income Quartile	**Bottom**	**Second**	**Third**	**Top**
Bottom	32.01%	31.33%	25.45%	11.21%
Second	25.41%	26.82%	28.34%	19.43%
Third	19.32%	23.90%	32.57%	24.21%
Top	10.02%	19.03%	34.23%	36.72%

Source: IFLS5, Summarized by Author (2018)

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:00.

Table 7. Income Matrix of Daughter and Parents

	Daughter's Income Quartile			
Father's Income Quartile	**Bottom**	**Second**	**Third**	**Top**
Bottom	36.66%	31.74%	20.35%	11.25%
Second	25.32%	26.17%	28.23%	20.28%
Third	15.51%	33.97%	29.43%	21.09%
Top	9.89%	18.74%	37.23%	34.14%
	Daughter's Income Quartile			
Mother's Income Quartile	**Bottom**	**Second**	**Third**	**Top**
Bottom	40.13%	26.32%	24.43%	9.12%
Second	23.53%	28.25%	35.34%	12.88%
Third	18.23%	29.65%	32.17%	19.95%
Top	11.23%	20.32%	31.43%	37.02%

Source: IFLS5, Summarized by Author (2018)

Table 8. Dependent Variable: Son/Daughter's Income (in Log Rupiah)

	Heckman Selection		**OLS**	
Variables	**Son**	**Daughter**	**Son**	**Daughter**
Father's Income (Log)	**0.34873****	**0.29103****	**0.31219****	**0.25362****
	(0.029153)	(0.039553)	(0.032783)	(0.04738)
Age	**0.056243****	**0.05724****	**0.07403****	**0.06875****
	(0.005073)	(0.00664)	(0.00399)	(0.00369)
Age^2	**-0.0014****	**-0.00091****	**-0.0012****	**-0.00072****
	(0.00053)	(0.00011)	(0.00021)	(0.00013)
Marital Status	**0.53438***	**0.30386***	**0.47298***	**0.26232***
	(0.137679)	(0.135645)	(0.2102)	(0.10281)
Education	**0.09618****	**0.158574****	**0.11075****	**0.19728****
	(0.01009)	(0.014010)	(0.02945)	(0.03473)
Father's Education	**0.010619****	**0.0194256****	**0.03225****	**0.03267****
	(0.0065297)	(0.0088687)	(0.002254)	(0.06271)
Mother's Education	**0.045204****	**0.062454****	**0.04492****	**0.07389****
	(0.006396)	(0.0085151)	(0.00625)	(0.018128)
Urban-Rural	**0.23497****	**0.40623****	**0.134281****	**0.26878****
	(0.0451388)	(0.0623349)	(0.02322)	(0.0232)
Work Status	**0.39419***	**0.45362***	**0.238717***	**0.290308***
	(0.15055)	(0.18433)	(0.075914)	(0.053239)
Constant	16.69935	14.99348	19.92382	17.2372
	(0.1788223)	(0.2743247)	(0.34783)	(0.23872)
No. of Observation	8707	8161	6034	5036
R^2	0.4799		0.3923	
Inverse Mill's Ratio	1.2238		1.7954	
	(0.5717)		(0.2388)	

Source: IFLS5, Summarized by Author (2018)

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:00.

Son's and daughter's level of persistence is greater to father than mother. Thus, income pattern of son and daughter is more similar to father than mother. Income, as a labor market outcome, is determined by several factors such as sex, education, occupation, and place of residence (Miles, 1997). The higher level of persistence to meaning higher possibility of similarity to several of those factors. Highest persistence is found in Heckman Selection rather than OLS result. It is likely that the result indicates negative sample selection, as explained in Lefranc et al. (2014) where women with most income potential are less likely to participate in the labor market and report their own income. After treating sample selection, IGE rises. The lowest persistence is found in son and daughter in OLS result. The range for son's level of persistence is 0.20 – 0.34, whereas daughter's level of persistence is in the range of 0.25 – 0.36. However, this does not necessarily mean son's mobility is greater than daughter's mobility. Regarding to father's income, daughters appear to have higher mobility than son. While in mother's income son appear to have higher mobility than daughter. The degree of IGE is on intermediate level based on Miles & Corak (2013), in the same range as Vietnam (Dang, 2015) and Japan (Lefranc et al. 2014).

While father's income provides higher degree of similarity to children's income, the opposite goes for education. It is mother's education that is more significant to increase income in both sons and daughters. Mother is traditionally the primary caregiver of the family and spend more time shaping the value and characteristics of children. Educated mothers are more likely to engage in important household decision making (Hallman, 2003) and prioritize family needs such as investment in children's needs that could lead to better future outcomes. In spite of that, education seemed to give greater benefit for daughter than for son whether it is their own education or parent's education. The highest benefit is seen in OLS result of daughter's own education, with 19% increase in income as year of schooling increase. For age effects, despite not much difference between both son and daughter, when considering the age-squared daughters seemed to have flatter age earning profile compared to son while son have steeper age earning profile. In other words, son in more likely to receive faster return in human capital investment (i.e., education) while daughters are slower.

Unlike education, marital status seemed to give greater benefit to sons than for daughters. Marriage result in increase of productivity in specialized sector of production – in this case labor market production for working son – and typically male give source of income to their family. Son who is married has greater deal of responsibility to give income to their family and opt for stability. Gains from marriage is also likely to increase with increase in education (Tiefenthaler, 1997). Education provide opportunities for job security and stable income, while marriage could also be a means of exchange and sharing in knowledge through close level of association and motivation that could increase productivity. The gain could be higher when spouse is also well-educated. The

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:00.

relationship between marital status and education in terms of income mobility cannot be neglected.

Place of residence give greater benefits for son and daughter who live in urban area, as expected due to differences in standard of living and access to facilities. Nevertheless, the benefit is greater for daughters than it is for sons, even higher when using Heckman Selection; the increase in income if daughters reside in urban area is 40% as opposed to those in rural area. As Suryahadi et al. (2018) point out, on transition matrix of employment status based on IFLS, the highest level of persistence is for individuals who worked in rural agriculture for both men and women. 89% of workers who are employed in rural agriculture in 2007 stay in rural area, whether it is agriculture or non-agriculture in 2014. Although an option to migrate to urban area appeals to some since it provides a gateway to better income opportunities, in practice it required higher level of education or qualification and for agricultural, mechanization.

The same result as above still holds where greater benefits are seen in daughters than sons in terms of work status. Daughters who are in formal employment will see 45.3% increase in income using Heckman Selection and 29% in OLS result. The gap between the result, which is 16.3%, could translate to even larger gap between formal employment and daughters who are in informal employment with no income, or unpaid family workers. Daughters is also more likely to shift to non-labor market activities, such as housekeeping. As for sectoral, those who are employed in rural agriculture, which 39% are self-employed and 37% are family workers, have less probability to move to other sectors, especially urban-located sectors (Suryahadi et al., 2018). Those who started off with low-income in rural industry and rural services sector has higher probability to move to urban industry and urban services. In contrast, those started off as low-income in rural agriculture is less likely to move to another sector. This could be an indication of more difficulty and costly for workers in agriculture sector to change jobs.

In relation with Indonesian household characteristics where men and women are distinctive by its role in household, majority of men are head of household and working in labor market while women are the primary caregiver and a homemaker. The result of this study is that when looking at personal income, married men seemed to have higher income due to the responsibility they had as the breadwinner in the household. On the other hand, women who are in formal employment and residing in urban area have higher income than their counterparts. Since this study is looking at personal income and not household income, women who are homemaker and residing in rural area is indeed have lower income since they rely on their husband for monetary income. The result of this study is in line with traditional expectation of gender role in Indonesian household.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:00.

All in all, the estimation result indicates that the difference among sons and daughters is that several factors would give greater benefit for daughters rather than for sons. Those who would receive greatest benefit from a change of characteristics is the most vulnerable group, given there are no change in current condition. Daughters who are not married, uneducated, living in rural area, employed in informal sector or specifically rural sector, is more likely to stay in the same income group as their parents. However, if the variable is changed to family income rather than personal income, there is a possibility the result would change since family income would be higher. The difference would be even higher if initial income of daughter is lower than her spouse. A further look into this would be beneficial to observe the role of marriage into intergenerational income mobility.

CONCLUSION

This study has examined the condition of intergenerational income mobility in Indonesia and its differences among sons and daughters. The empirical analysis of intergenerational income mobility with personal income as a proxy using IFLS 5 is further investigated through analysis of parent and child income relation between age group and income group. Afterwards robustness check is done in attempt to explain the mechanism and see changes by adding other variables. Gender differences, or sons and daughters' differences, has not been widely studied in studies of income mobility due to lack of proper data and low rate of female labor force participation rate (Sirniö et al., 2013). Therefore, in this study it attempted to reduce sample selection bias by using Heckman Selection. Comparison is then done with the result of OLS estimates.

Taking all into consideration, the condition of intergenerational income mobility in Indonesia based on ranking in Miles and Corak (2013) is in intermediate level, which is in the range of 0.20 to 0.34. As a comparison, most Scandinavian countries are in less than 0.2 while US and UK is higher than 0.4. Indonesian rank is similar with Vietnam (Dang, 2015) and Japan (Lefranc et al., 2014). However, the breakdown of age group, income group, and gender differences is important to look at. From the transition matrix, it can be inferred that the tendency to stay in the income group children were born into is stronger in bottom and top income group. The tendency is stronger for sons than daughters. Since men are expected to work, parent's expectation is higher than especially for those in the higher income and make sure their offspring would receive sufficient investment to have better future outcome. This is not the case for those in bottom income group since there is less availability for investment in children. Therefore, children in bottom income group is in what some might call 'poverty trap'. Within children itself, there exist upward intergenerational income mobility when looking at different age group, younger age group has relatively higher mobility than older age group. In certain

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:00.

age group, daughters have relatively higher mobility than son. The same goes for son where mobility significantly increase in certain age if looking at the persistence with mother's income.

After adding personal and parental characteristics into the equation, father's and mother's income still holds importance in determining children's income, especially father's income. As for education, children's education itself is more important to increase in income than any of the parent's education. This is an indication that children's own effort and hard work is also a key in determining outcome regardless of background, but this is not confirmed since measurement for effort and hard work is unavailable. Mother's education seemed to give greater benefit than father's education. Educated mothers has better understanding and knowledge and will transfer to children through caregiving. Marriage seemed to give greater benefit to sons than daughters. On the other hand, place of residence, work status, also education seemed to give greater benefit to daughters than sons.

Based on the characteristics, those who would receive highest benefit once there is a change in the characteristics is daughters who are uneducated, not married, live in rural area, and employed in informal sector, especially agriculture. Those who would receive lowest benefit are typically in higher initial condition, which is sons who are educated, married, live in urban area, and employed in formal sector, especially services sector. Taking into account that educated mothers has a spillover effect of also better educated family especially children, focusing on the development of daughters who have vulnerable characteristics, such as higher female labor force participation rate and education, would be like as the saying goes *'killing two birds with one stone'*. It increased their chance to have much better income and in the future when they choose to be mothers, it benefits their children's future as well and greater chance of upward intergenerational income mobility for future generations.

REFERENCES

Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis, with special reference to education*. University of Chicago Press.

Becker, G. S. (1973). A theory of marriage: Part I. *Journal of Political economy*, *81*(4), 813-846.

Becker, G. S. & Tomes, N. (1979). An Equilibrium Theory of the Distribution of Income and Intergenerational Mobility. *Journal of Political Economy*.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:00.

Becker, G. S. & Tomes, N. (1986). Human capital and the rise and fall of families. *Journal of labor economics*, *4*(3, Part 2), S1-S39.

Bjorklund, A. & Jantti, M. (2007). Intergenerational income mobility and the role of family background. *Handbook of Economic Inequality*, 1–66.

Black, S. E. & Devereux, P. J. (2010). Recent developments in intergenerational mobility. *NBER Working Paper No. 15889*, 1–91. https://doi.org/10.1016/S0169-7218(11)02414-2.

Blanden, J. (2013). Cross-country rankings in intergenerational mobility: A comparison of approaches from economics and sociology. *Journal of Economic Surveys*, *27*(1), 38–73.

Bloome, D. (2014). Income inequality and intergenerational income mobility in the United States. *Social Forces*, *93*(3), 1047-1080.

Cameron, S. & Suarez, D. C. (2017). *Women's Economic Participation in Indonesia*. Australia Indonesia Partnership on Economic Governance.

Causa, O., Dantan, S. & Johansson, Å. (2009). "Intergenerational Social Mobility in European OECD Countries". *OECD Economics Department Working Papers* No. 709, OECD Publishing.

Chetty, R., Friedman, J. N., Saez, E., Turner, N. & Yagan, D. (2017). *Mobility report cards: The role of colleges in intergenerational mobility* (No. w23618). National Bureau of Economic Research.

Corak, M. & Heisz, A. (1999). The intergenerational earnings and income mobility of Canadian men: Evidence from longitudinal income tax data. *Journal of Human Resources*, 504-533.

Corak, M. (2006). Do Poor Children Become Poor Adults? Lessons from a Cross-Country Comparison of Generational Earnings Mobility. *Research on Economic Inequality*, *13*(1993), 143–188.

Corak, M. (2013). Income inequality, equality of opportunity, and intergenerational mobility. *Journal of Economic Perspectives*, *27*(3), 79-102.

Dang, T. (2015). Intergenerational mobility of earnings and income among sons and daughters in Vietnam. *SSRN Electronic Journal*, (May).

D'Addio, A. C. (2007). Intergenerational transmission of disadvantage: mobility or immobility across generations? *OECD Social, Employment, and Migration Working Papers*, (52), 0_1.

Downey, D. B. (1995). When bigger is not better: Family size, parental resources, and children's educational performance. *American sociological review*, 746-761.

Ermisch et al. (2017). *Intergenerational Mobility and Marital Sorting.* Wiley on behalf of the Royal Economic Society Stable.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:00.

Fields, G. S., Cichello, P. L., Freije, S., Menéndez, M. & Newhouse, D. (2003). For Richer or for Poorer? Evidence from Indonesia, South Africa, Spain, and Venezuela. *The Journal of Economic Inequality*, *1*(1), 67–99.

Frankenberg, E., Lillard, L. & Willis, R. J. (2002). Patterns of intergenerational transfers in Southeast Asia. *Journal of Marriage and Family*, *64*(3), 627-641.

Freeman, R. B. (1979). *The effect of demographic factors on age-earnings profiles.*

Ghez, G. & Becker, G. S. (1975). *The allocation of time and goods over the life cycle.* NBER Books.

Gregorio, J. D. & Lee, J. W. (2002). Education and income inequality: new evidence from cross-country data. *Review of income and wealth*, *48*(3), 395-416.

Gujarati, D. N. (2004). *Basic econometrics*. Tata McGraw-Hill Education.

Haider, S. & Solon, G. (2006). Life-cycle variation in the association between current and lifetime earnings. *American Economic Review*, *96*(4), 1308-1320.

Hallman, K. (2003). *Household Decisions, Gender, and Development*. *International Food Policy Research Intstitute*.

Heckman, J. J. (1977). *Sample selection bias as a specification error (with an application to the estimation of labor supply functions).*

Haughton, J. & Shahidur, R. K. (2009). *Handbook on Poverty + Inequality.* The World Bank, *53*(9), 1689–1699.

Hertz, T., Jayasundera, T., Piraino, P., Selcuk, S., Smith, N. & Verashchagina, A. (2007). The inheritance of educational inequality: International comparisons and fifty-year trends. *The BE Journal of Economic Analysis & Policy*, *7*(2).

Hirvonen, L. H. (2008). Intergenerational Earnings Mobility Among Daughters and Sons: Evidence from Sweden and a Comparison with the United States. *American Journal of Economics and Sociology*, *67*(5), 777–826.

Huang, Y. (2017). *Intergenerational economic mobility in contemporary Australia: Is Australia still the land of the "fair go"?*

Jacobsen, J. P. & Levin, L. M. (1995). Effects of intermittent labor force attachment on women's earnings. *Monthly Lab. Rev.*, *118*, 14.

Khunkarnrai, M. S. (2013). *Age-Earnings and Age-Productivity Profiles of Self-Employed Workers in Thailand* (Doctoral dissertation, Thammasat University).

Korenman, S. & Neumark, D. (1991). Does marriage really make men more productive?. *Journal of Human Resources*, 282-307.

Lahiri-Dutt, K. & Robinson, K. (2008). 'Period Problems' at the Coalface. *Feminist Review*, *89*(1), 102-121.

Lazear, E. P. & Moore, R. L. (1984). Incentives, productivity, and labor contracts. *The Quarterly Journal of Economics*, *99*(2), 275-296.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:00.

Lefranc, A., Ojima, F. & Yoshida, T. (2010). The intergenerational transmission of income and education: A comparison of Japan and France. In *Quality and Inequality of Education* (pp. 229-253). Springer, Dordrecht.

Lefranc, A., Ojima, F. & Yoshida, T. (2014). *Intergenerational earnings mobility in Japan among sons and daughters: Levels and trends*. *Journal of Population Economics* (Vol. 27).

Lillard, L. A. & Kilburn, R. M. (1995). *Intergenerational earnings links: sons and daughters.*

Mason, A. & Lee, R. (2007). Transfers, capital, and consumption over the demographic transition. *Population aging, intergenerational transfers and the macroeconomy*, 128-162.

Mayer, S. E. & Lopoo, L. M. (2004). *What do trends in the intergenerational economic mobility of sons and daughters in the United States mean?* Chapter, 5, 90-121.

Mazumder, B. (2016). Fortunate Sons: New Estimates of Intergenerational Mobility in the United States Using Social Security Earnings Data. *The Review of Economics and Statistics*, Vol. 87, No. 2 (May 2005), pp. 235-255 Published, *87*(2), 235–255.

Miles, D. (1997). A household level study of the determinants of incomes and consumption. *The Economic Journal*, 1-25.

Mincer, J. (1974). *Schooling, Experience, and Earnings. Human Behavior & Social Institutions* No. 2.

Moen, P. (1985). *Continuities and discontinuities in women's labor force activity.*

Olivetti, C. & Paserman, M. D. (2012). In the Name of the Father: Marriage and Intergenerational Mobility in the United States, 1850-1930. *NBER Working Paper*, (March).

Pakpahan, Y. M., Suryadarma, D. & Suryahadi, A. (2009). Destined for destitution: intergenerational poverty persistence in Indonesia. *Smeru Research Institute Working Paper*, (134), 1–14.

Pattinasarany, (2012). *Mobilitas sosial di Indonesia*, FISIP UI, 2012. [*Social mobility in Indonesia*]

Roemer, J. E. (2005). Economic of Opportunity. In *New Palgrave Dictionary 2nd Edition.*

Schultz, T. W. (1961). Investment in human capital. *The American economic review*, *51*(1), 1-17.

Sirniö, O., Martikainen, P. & Kauppinen, T. M. (2013). Intergenerational determinants of income level in Finland. *Social forces*, *92*(2), 463-490.

Solon, G. (1992). Intergenerational income mobility in the United States. *The American Economic Review*, 393-408.

Solon, G. (1999). Intergenerational mobility in the labor market. In *Handbook of labor economics* (Vol. *3*, pp. 1761-1800). Elsevier.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:00.

Solon, G. (2002). A Benchmark Measure of Intergenerational Mobility. *Journal of Economic Perspectives*, *16*(3), 59–66.

Solon, G. (2004). A model of intergenerational mobility variation over time and place. *Generational income mobility in North America and Europe*, 38-47.

Suharti, S. (2013). *Trends in Education in Indonesia*. Institute of Southeast Asian Studies (ISEAS).

Suryahadi, A., Marshan, J. & Indrio, V. T. (2018). *Structural Transformation and the Release of Labor from Agriculture.*

Suska, S. & Kingdom, U. (2016). *Income Mobility in Indonesia in Pre and Post Monetary Crisis 1998 and the Determinants Income mobility in Indonesia in pre and post monetary crisis 1998 and the determinants.*

Tan, P. L. & Gibson, J. (2010). The impacts of temporary emigration of lower-skilled females on sending households in Indonesia. In *Sixth Australasian Development Economics Conference*.

Taubman, P. J. & Wales, T. J. (1973). Higher education, mental ability, and screening. *Journal of Political Economy*, *81*(1), 28-55.

Tiefenthaler, J. (1997). The productivity gains of marriage: Effects of spousal education on own productivity across market sectors in Brazil. *Economic Development and Cultural Change*, *45*(3), 633-650.

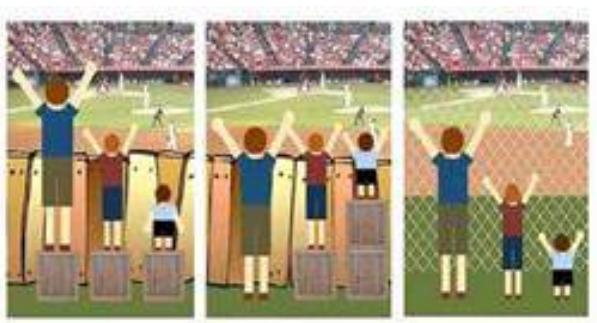
Wicaksono, E., Amir, H. & Nugroho, A. (2017). *The sources of income inequality in Indonesia: A regression-based inequality decomposition* (No. 667). ADBI Working Paper Series.

Witoelar, F., Strauss, J. & Sikoki, B. (2009). *Socioeconomic success and health in later life: Evidence from the Indonesia Family Life Survey.*

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

APPENDIX

Appendix 1. Described Picture in Introduction



Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:00.

Appendix 2. Further Explanation on Variables

Variables	Dummy Variables	Notes
Work Status	0 = informal workers 1 = formal workers	**Informal workers:** • Self-employed • Self-employed with unpaid family workers/temporary workers • Casual worker in agriculture • Casual worker not in agriculture **Formal workers:** • Self-employed with paid workers • Government workers • Private workers
Marital Status	0 = not married 1 = married	**Not married:** • Never married • Divorced • Separated • Widow / Widower • Cohabitation **Married:** • Married, formal (KUA or Civil Registration) • Married, formal according to religious law • Married, formal according to adat law

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:00.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 8

DO SMARTER SPOUSES MAKE YOU HEALTHIER?

Syta Kurnia Putri* *and Dwini Handayani*
Department of Economic, Universitas Indonesia, Depok, Indonesia

ABSTRACT

Socioeconomic conditions are important to the degree of health achieved by an individual. Education as one dimension of socioeconomic status is closely related to health. It provides knowledge that helps an individual understand and overcome health risks. However, the degree of one's health is affected by the individual's behavior and is influenced by the environment and social context in which one lives—one being the marriage partner. Using data from The National Socioeconomic Survey 2017 (SUSENAS 2017) in Indonesia, this study examines the influence of a couple's educational attainment on partner health status. The results of an ordered logit model show that one spouse's education affects the health status of both husband and wife. A highly educated spouse increases a person's chances of having a better health status than marrying a less-educated partner. Overall, the results indicate the importance of educational spillover on a partner's health status.

Keywords: education, spouse's education, marriage, self-rated health

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

* Corresponding Author's E-mail: sytaputri@gmail.com.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:11.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 8

DO SMARTER SPOUSES MAKE YOU HEALTHIER?

Syta Kurnia Putri* *and Dwini Handayani*
Department of Economic, Universitas Indonesia, Depok, Indonesia

ABSTRACT

Socioeconomic conditions are important to the degree of health achieved by an individual. Education as one dimension of socioeconomic status is closely related to health. It provides knowledge that helps an individual understand and overcome health risks. However, the degree of one's health is affected by the individual's behavior and is influenced by the environment and social context in which one lives—one being the marriage partner. Using data from The National Socioeconomic Survey 2017 (SUSENAS 2017) in Indonesia, this study examines the influence of a couple's educational attainment on partner health status. The results of an ordered logit model show that one spouse's education affects the health status of both husband and wife. A highly educated spouse increases a person's chances of having a better health status than marrying a less-educated partner. Overall, the results indicate the importance of educational spillover on a partner's health status.

Keywords: education, spouse's education, marriage, self-rated health

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

* Corresponding Author's E-mail: sytaputri@gmail.com.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

INTRODUCTION

Education and Health

Education is a dimension of socioeconomic status that affects health and is known to be closely related to health through direct (raising awareness of health) and indirect (access to safer jobs and higher income) mechanisms (Fuhrer et al., 2002). People with low education tend to be less healthy and have a poorer lifestyle than highly educated people (Cavelaars et al., 2000). Highly educated people learn to have better access to information and facilities, specifically related to healthy lifestyle. According to Torssander and Erikson (2009), education gives a person the knowledge to understand the health risks being faced and how to overcome them.

A theoretical framework proposed by Grossman (1972b) shows that the level of education affects one's health behavior. The quality of health owned by an individual improves with higher levels of education. However, one's health is not only influenced by the individual's own behavior but also by the environmental and social contexts in which the individual lives (House, 2002; Rice, Carr-Hill, Dixon & Sutton, 2000). Previous research found that social relationships, particularly personal relationships such as marriage, have a significant effect on health (Umberson & Montez, 2010). Individuals who have a partner tend to be healthier and live longer than single people (Craddock, 2015; Wood, Goesling, & Avellar, 2007).

Becker (1973) stated that health is a commodity to be generated through marriage and plays a role in enhancing partner utility, where the quality of the commodities produced by a household is partly formed by the level of education. Therefore, the level of health in a household depends heavily on the level of education and is significantly influenced by the partner's education (Egeland et al., 2002). Education in the context of marriage is known to affect one's own and partner's health because it is a resource that can be utilized for oneself and can be allocated to others (Monden et al., 2003). Couples in a household influence each other's lifestyle, especially in relation to health (Umberson, Crosnoe, & Reczek, 2010). In particular, the wife can influence her partner to adopt a healthier lifestyle (de Montigny et al., 2016).

Why Indonesia?

Indonesia is a country with a good development in education achievements, shown by an increase in the average length of school years of 3.3 years in 1990 to 7.9 years in 2015 (UNDP, 2016). Specifically for the female population, the educational achievements of Indonesian women have shown improvement over the past 10 years.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

Data from the Central Statistics Agency (BPS) shows that in 2007 the population of women who were able to graduate from high school (SMA) was only 11.9 percent, then increased to 19.2 percent in 2016. Women who managed to obtain a Diploma/Bachelor degree also increased by a percentage of 4.9 percent in 2007 to 7.92 percent in 2016. The increasing education of women shows the increasing role of women in the household, especially related to health. So that the education spillover effect is not only contributed by husbands in the household but also women as wives.

Moreover, at a ranking of 124th globally with respect to life expectancy, Indonesia is well below Singapore and Malaysia. In Indonesia, life expectancy in 2017 was 67.3 years for men and 71.4 years for women. Noncommunicable diseases were the leading causes of death in Indonesia. Lifestyle as a cause contributed to 73% of the deaths in Indonesia in 2016 (WHO, 2018). The increasing magnitude of death from noncommunicable diseases is expected to be reduced by improving the health of men and women through the consideration of their partner's influence. Lillard and Waite (1995) found that men tend to adapt to a healthier lifestyle when married, whereas women have better financial access. Therefore, marriage can reduce the risk of morbidity and mortality for both.

Several studies on education and health exist, but studies on the influence of partners on one's health do not widely exist, especially in Asia. Previous research has been conducted in China (Li et al., 2011) and Bangladesh (Hurt, Ronsmans, & Saha, 2004) with different results. This study attempts to analyze the effect of education on health in the context of married couples in Indonesia by scrutinizing educational spillover effects between couples either directly on the health status of the husband/wife or through intermediate variables. In addition, the effect of educational assortative mating as a variable reflecting the partners' combined education on the health status of spouses was estimated. Marriage is a perfect situation in which to witness the effect of educational spillover between couples on each other's health (Brown, Hummer, & Hayward, 2014; Jacobson, 2000).

LITERATURE REVIEW

Grossman (1972a) developed a theory-related health behavior framework. Health is an important commodity because health levels can affect worker productivity and contribute to economic matters. Health is considered a durable item that acts as part of human capital. Health is also a consumable item that affects individual utility and is an investment because it determines the time available for engaging in activities. In the model proposed by Grossman (1972a), health is determined by an individual's level of education. Education is a strong determinant of health because it determines the opportunities that individuals gain throughout their lives, underpinning ways of thinking and determining how they interact with their environment.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

However, the level of one's health is not only determined by the quality of one's own resources but also by the allocation of resources in social relations among individuals. Grossman (1976) found that a husband's health status is better as the wife's educational level increases. Marriage is a social relationship experienced by most adults, and households can be utilized as an approach to observing the inherent social context of the individual (Bartley et al. 2004; Hughes & Waite, 2002). The household approach is important because married couples interact frequently, and the exchange of resources likely occurs when the interaction between the two individuals is frequent. In addition, the tendency is for couples to pool and exchange both material and nonmaterial resources owned by each through the level of education that they achieve to improve each other's well-being (Brown et al., 2014; Jacobson, 2000; Monden et al., 2003). Therefore, the presence of educational spillovers between partners is allowed to affect the health conditions of both the husband and the wife (Brown et al., 2014).

Becker (1981) argued that marriage might increase economic and social benefits. Through marriage, household income grows, and particularly through the economies of scale to be gained, marriage improves welfare. Increased economic prosperity improves health through the ease of access to better health facilities and reduced stress levels (Chang & Lauderdale, 2009; Glied & Lleras-Muney, 2008; Wood et al., 2007). In addition, the role of the spouse is also important in supporting the household's healthy lifestyle (de Montigny et al., 2016). Thus, along with better education and knowledge, the tendency of women to adopt a healthy lifestyle for themselves and their partners also increases (Umberson, 1992).

Willemsen, Vink, and Boomsma (2003) found another mechanism that influences a couple's level of health, namely, the similarity of the characteristics between the partners, such as educational achievement—known as educational assortative mating. Educational assortative mating is the tendency to marry a partner who has the same level of education. Kalmijn (1998) defined assortative mating as the tendency of a person to choose a partner who is equal in terms of social characteristics, including race, ethnicity, caste, religion, family, work, or socioeconomic status. In his theory, Becker (1973) stated that positive matching (educational homogamy) occurs when the education of the husbands and the wives is complementary and mutually reinforces one another. When their education represents substitutes (negative matching), then couples balance each other's educational abilities.

The tendency of someone to marry a partner who has the same level of education, also known as an educational homogamy, describes the health conditions of couples in the household (Monden, 2007). Meyley, Stimpson, and Peek (2007) explained that the existence of assortative mating allows for a match in the health output between the partners. The resource allocation hypothesis shows that sharing the environment, financial conditions, and social networks can be interpreted as sharing the health risks between the partners.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

The influence of education on a partner's health status is indicated by a study conducted in Sweden (Egeland et al. 2002). This study showed that the tendency of husbands to have poor health status and to die from coronary health disease (CHD) declined when they have a highly educated wife, after controlling for the husband's age and education. In a study on cancer patient respondents in Norway, the ability of patients to survive in highly educated couples was found to be greater relative to patients with less-educated partners (Sysea & Lyngstad, 2017). Meanwhile, research conducted by Hurt, Ronsmans, and Saha (2004) in Bangladesh found that the husband's level of education and occupation did not affect the wife's survival. Although the effects of women's education are particularly significant, husbands with educated wives encounter lower mortality rates. Other findings also suggest that the wife's educational level has a strong influence on reducing the risk of partner mortality relative to the husband's educational level (Jaffe et al., 2005, 2006; Torssander & Erikson, 2009; Skalická & Kunst, 2008).

In contrast, Wilson (2002) found that the husband's education positively affects the partners' health status. In contrast, the wife's higher educational level actually worsens her partner's health status. Li et al. (2011) also found that a more educated husband benefits the wife's self-rated health (SRH) status, whereas no associations were found between the husband's health status and his partner's educational level after controlling for the presence of chronic conditions, lifestyle factors (smoking, physical activity, and weight), and social support. Research conducted by Brown et al. (2014) in the United States showed a link between partner education and health status as measured by SRH. Marrying a highly educated partner reduces a person's tendency to report poor health status by being controlled by the individual's own educational level and other factors, such as race, citizenship, age, and income. In addition, this study also found that a husband's education is more influential on the wife's SRH.

In addition, through research in the Netherlands, Monden (2007) mentioned that educational homogamy leads to a greater accumulation of health problems for couples with low educational attainment than for those who are highly educated. Research conducted by Brown et al. (2014) in the United States showed that a hypergamy education status of couples increases the individual's SRH. In addition, the study also showed that maximum health conditions are achieved when both couples are highly educated. The existence of the educational spillover effect between couples very possibly affects their health condition.

Previous studies also found that, in addition to education, health is influenced by several other factors. Age is known as a determinant of the health status of individuals (Benoit & Shumka, 2009). Based on research conducted by Hosseinpoor et al. (2012) in 57 countries using World Health Survey 2002–2004 data, health status was found to also be related to employment status in both men and women. In addition, considering the employment status of the couple is known to provide a broader view when measuring

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

health status. Research conducted by Martikaen (1995) in Finland showed that the work positions of individuals and partners affect health status. Partners also have a strong influence on the health of individuals through risky lifestyles, one being smoking. Research conducted by Takagi et al. (2014) showed that wives who had previously or never smoked were associated with husbands' cessation of smoking. Conversely for wives, partners who do not smoke influence their wives to stop only if they are highly educated. Another factor that is closely related to one's health is economic status, measured through both the perceptions of economic status (de Montigny et al., 2016) and individual income (Spasojević, 2010; Sysea & Lyngstad, 2017).

METHODOLOGY

Data

This study intends to find out influence of partners education on one's health. To answer this research question, this study used data from the Indonesia Social and Economic Survey (Susenas) 2017. Susenas is a cross-sectional survey containing information on the socioeconomic status of the individual and the household. The questionnaire was divided into two parts: Susenas Kor and Susenas Module. Information on health, employment status, and educational status was obtained for each household member from Susenas Kor, whereas data on consumption were collected for households listed in Susenas Module.

The husband and the wife represent the unit analysis of this study. Household selection is performed for households consisting of only a couple, namely, the head of the household and his or her spouse (wife/husband). Selecting households consisting of only one couple is chosen because in the next analysis, a household with a husband and a wife who can be paired with each other is used. Furthermore, couples who become the unit of analysis are those who have not or have never attended school or are no longer in school. The lower limit is chosen to ensure that almost everyone has finished his or her educational attainment (Cutler & Lleras-Muney, 2006; Monden et al., 2003). In total, 228,749 households meeting the aforementioned criteria were identified.

Measures

Health status is the dependent variable in this study. Measured through SRH, this variable is formed from the following three questions in Susenas Kor:

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

(a) Did you have any health complaints in the past month?
(b) Did they result in disruptions in work, school, or daily activities?
(c) Is the health disorder suffered seriously?

Adapted from previous research by Farida (2014), this study categorizes health status at the following three levels.

1. The healthy condition is when respondents report no health complaints, that is, for the questionnaire, when the respondent answers "no" or code "5" to the question on the health complaints experienced (Susenas Kor Block IX, details 902).
2. A minor illness is when respondents have a health complaint or have a health complaint that disrupts their daily activities, that is, when respondents answer "yes" or code "1" for questions about health complaints and answer "yes" (code "1") or "no" (code "5") for questions about whether health complaints interfere with daily activities (Susenas Kor Block IX questionnaire, details 902 and 903).
3. A severe illness is experiencing health complaints and severe health problems, when respondents provide "yes" or "1" answers to questions about health complaints and when severe health problems are experienced in the questionnaire (Susenas Kor Block IX, details 902, 903 and 905).

In this study, SRH was applied to portray health status because it proved to be a valid and reliable measure to describe an individual's health status and has been applied in previous studies (Ahnquist, Wamala, & Lindstrom, 2012; Brown et al., 2014; Burström & Fredlund, 2001; Huijts, Monden, & Kraaykamp, 2009; Huijts, 2011; Idler & Benyamini, 1997; Li et al., 2011; Wilson, 2002).

In this study, the main independent variable is the highest level of education attained by couples in a household. This variable is obtained through the question of the highest diploma completed by the respondent. Level of education is divided into five categories: (1) no education, (2) elementary school, (3) junior high school, (4) senior high school, and (5) college and higher. This study includes other variables as control variables in the model. To evaluate the possible association between assortative mating and a husband's health status, as recommended by several studies (Willemsen, Vink, & Boomsma, 2002; Li et al., 2011), this research applied educational attainment as the measure for assortative mating. Educational assortative mating is divided into five categories (Osiewalska, 2017):

1. Both partner's educational attainment is primary school (no school and elementary school)

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

2. Both partner's educational attainment is secondary school (junior and senior high school)
3. Both partner's educational attainment is tertiary school (college and higher)
4. A husband with higher educational attainment than the wife (hypergamy)
5. A wife with higher educational attainment than the husband (hypogamy)

Other variables included in this study are age, employment status, health insurance ownership, smoking behavior, economic status (proxy expenditure), and residence.

Data Analysis

This study uses an ordered logit model to estimate the relationship between a spouse's educational level and a partner's health status. The estimation was used to examine the relationship between the wife's educational attainment and the husband's health status, and vice versa. The ordered logit model was chosen because the dependent variables are defined on an ordinal scale. Thus, the marginal effect $P\ (y = j|x)P\ (y = j|x)$ is applied for the interpretation of the ordered logit estimation.

Although the feasibility of a causal relationship exists between education and health (Grossman, 1976), this study is only concerned with the effect of education on health. Previous studies that suggested a causal relationship between health and education focused on the importance of past health conditions to determine the length of schooling that can be achieved (Spasojević, 2010). This study focuses on health conditions during the data collection. Moreover, Amin et al. (2015) stated that most theories argue that the positive effect of education on health dominates the research findings. Furthermore, the possibilities of an endogeneity problem on smoking behavior and ownership of health insurance, which are thought to be influenced by educational level and economic status, were not studied. The overall analysis in this study is conducted using Stata 13.

RESULTS AND DISCUSSION

Descriptive Statistic

The cross-tabulation results between a husband's health status and his own educational level indicate that the percentage of husbands with a healthy status increases along with the education attained. These results indicate that the educational attainment of an individual affects the health status attached to him, where education as one of the health determinants provides the knowledge to understand the health risks encountered

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

and how to overcome them (Torssander & Erikson, 2010). Moreover, the spouse's level of education indicates that the percentage of husbands with a healthy status is higher as her educational attainment increases.

Table 2 indicates that a spouse's educational attainment also affects the wife's health status, where the percentage of being healthier increases for well-educated husbands. The result shows that a wife's chance of experiencing a severe illness is 4.51% when her spouse had not attended or graduated from school, whereas the wife's opportunity to experience a severe illness is only 2.64% when her spouse is a college graduate.

Table 1. Descriptive analysis of husband's health status

Educational attainment	**Health status**			**Total**	
	Healthy	**Minor illness**	**Severe illness**	**%**	**N**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Husband's educational attainment					
No school	60.83	32.62	6.55	100	45,057
Elementary school	67.84	27.52	4.64	100	69,794
Junior high school	70.90	25.28	3.83	100	37,531
Senior high school	73.16	23.67	3.17	100	57,410
College and above	73.70	23.32	2.98	100	18,957
Wife's educational attainment					
No school	61.08	32.20	6.72	100	48,964
Elementary school	67.43	27.95	4.62	100	73,511
Junior high school	71.76	24.71	3.53	100	40,622
Senior high school	73.80	23.16	3.04	100	47,045
College and above	75.19	22.35	2.46	100	18,607
Total					228,749

Source: Susenas 2017

Table 2. Descriptive analysis of wife's health status

Educational attainment	**Health status**			**Total**	
	Healthy	**Minor illness**	**Severe illness**	**%**	**N**
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Wife's educational attainment					
No school	62.89	32.25	4.86	100	48,964
Elementary school	68.69	27.79	3.52	100	73,511
Junior high school	72.10	25.09	2.80	100	40,622
Senior high school	73.99	23.56	2.45	100	47,045
College and above	74.74	23.01	2.26	100	18,607
Husband's educational attainment					
No school	63.32	32.17	4.51	100	45,057
Elementary school	68.64	27.77	3.60	100	69,794
Junior high school	71.42	25.49	3.09	100	37,531
Senior high school	73.23	24.19	2.58	100	57,410
College and above	73.89	23.47	2.64	100	18,957
Total					228,749

Source: Susenas 2017

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

Ordered Logit Model

The estimation results in model 1a presented in Table 3 show that, when controlled by own characteristics, the chance that a husband is healthy decreases to approximately 10.82 percentage points when the husband had never attended school and decreases by 7.7 percentage points when the husband had graduated from elementary school. The chance of having a healthy status was reduced by 6.6 percentage points when the husband had graduated from junior high school. Finally, the chance that the husband is healthy is reduced by 3.4 percentage points when he had graduated from senior high school. The results for model 2a also indicate that the effect of the spouse's educational attainment on the husband's health status increases in line with the increasing education of the wife.

Table 3. Result of ordered logit model with dy/dx (healthy) for husband

Independent variables	**Husband's health status**		
	Model 1a	**Model 2a**	**Model 3a**
	Healthy	**Healthy**	**Healthy**
	dy/dx(1)	**dy/dx(1)**	**dy/dx(1)**
(1)	**(2)**	**(3)**	**(4)**
Husband's educational attainment			
No school	- 0.1082***		- 0.0773***
Elementary school	- 0.0770***		- 0.0519***
Junior high school	- 0.0663***		- 0.0468***
Senior high school	- 0.0340***		- 0.0232***
College and above (reference)			
Husband's age	- 0.0047***		- 0.0045***
Husband's employment status			
Not working	- 0.2021***		- 0.2047***
Working on informal sector	- 0.0031		0.0011
Working on formal sector (reference)			
Health insurance			
No	0.0142***		0.0145***
Yes (reference)			
Husband's smoking behavior			
Current smoker	0.0155***		0.0166***
Former smoker	- 0.0948***		- 0.0931***
Never smoking (reference)			
Wife's age		- 0.0062***	- 0.00001
Wife's educational attainment			
No school		- 0.1046***	- 0.0612***
Elementary school		- 0.0812***	- 0.0543***
Junior high school		- 0.0655***	- 0.0428***
Senior high school		- 0.0362***	- 0.0275***
College and above (reference)			
Wife's employment status			
Not working		0.0200***	0.0232***
Working on informal sector		0.0036	- 0.0014
Working on formal sector (reference)			

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

Independent variables	**Husband's health status**		
	Model 1a		**Model 1a**
	Healthy		**Healthy**
	dy/dx(1)		**dy/dx(1)**
(1)	**(2)**	**(3)**	**(4)**
Wife's smoking behavior			
Current smoker		- 0.0212**	- 0.0221***
Former smoker		- 0.0531***	- 0.0238
Never smoking (reference)			
Residence			
Rural	- 0.0070***	0.0055***	- 0.0026
Urban (reference)			
Economic status			
Low	0.0321***	0.0277***	0.0367***
Middle	0.0102***	0.0111***	0.0134***
High (reference)			

*** = p < 0.01, ** = p < 0.05, * = p < 0.1

Source: Susenas 2017

Table 4. Result of ordered logit model with dy/dx (healthy) for wife

Independent variables	**Wife's health status**		
	Model 1b	**Model 2b**	**Model 3b**
	Healthy	**Healthy**	**Healthy**
	dy/dx(1)	**dy/dx(1)**	**dy/dx(1)**
(1)	**(2)**	**(3)**	**(4)**
Wife's educational attainment			
No school	- 0.0995***		- 0.0592***
Elementary school	- 0.0748***		- 0.0434***
Junior high school	- 0.0613***		- 0.0374***
Senior high school	- 0.0291***		- 0.0162***
College and above (reference)			
Wife's age	- 0.0053***		- 0.0041***
Wife's employment status			
Not working	- 0.0060***		- 0.0062**
Working on informal sector	0.0051		0.0062*
Working on formal sector (reference)			
Health insurance			
No	0.0226***		0.0244***
Yes (reference)			
Wife's smoking behavior			
Current smoker	- 0.0222**		- 0.0163*
Former smoker	- 0.0948***		- 0.0790***
Never smoking (reference)			
Husband's age		- 0.0052***	- 0.0014***
Husband's educational attainment			
No school		- 0.0903***	- 0.0598***
Elementary school		- 0.0661***	- 0.0464***
Junior high school		- 0.0554***	- 0.0409***
Senior high school		- 0.0282***	- 0.0226***
College and above (reference)			
Husband's employment status			
Not working		0.0001	0.0032
Working on informal sector		0.0025	0.0006
Working on formal sector (reference)			

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

Table 4. (Continued)

Independent variables	**Wife's health status**		
	Model 1b		**Model 1b**
	Healthy		**Healthy**
	dy/dx(1)		**dy/dx(1)**
(1)	**(2)**	**(3)**	**(4)**
Husband's smoking behavior			
Current smoker		- 0.0267***	- 0.0259***
Former smoker		- 0.0479***	- 0.0469***
Never smoking (reference)			
Residence			
Rural	0.0086***	0.0117***	0.0124***
Urban (reference)			
Economic status			
Low	0.0480***	0.0548***	0.0563***
Middle	0.0158***	0.0221***	0.0224***
High (reference)			

*** = p < 0.01, ** = p < 0.05, * = p < 0.1

Source: Susenas 2017

Furthermore, controlled by all independent variables in the analysis, the partner's educational level continued to show a significant effect on the husband's health status (model 3a). In Table 3, the marginal effect between the spouse's educational level and the husband's own educational level shows the corresponding value, where a higher spouse educational level and husband's own educational level indicate a higher probability that the husband reports good SRH. Parallel with the husband's health status estimation, the result in model 3b (Table 4) indicates that the wife's chance of having a good health status is greater, in line with the increased level of the husband's educational attainment. The probability that the wife is healthy declines by 5.98 percentage points when marrying a partner with no schooling and by 4.64 percentage points when the husband's educational attainment is only elementary school. Subsequently, the chance of being healthy is reduced by only about 2.26 percentage points when the spouse has graduated high school. Meanwhile, when controlled by own characteristics (model 1b) or by the spouse's characteristics (model 2b), the influence of the wife's education and the spouse's education on the wife's health status has an almost equal marginal effect.

The estimation results indicate that marriage to an educated partner tends to reduce the chances of reporting poor SRH (minor illness and severe illness), whereas marriage to a less-educated partner increases the chances when controlling for the level of individual education and other independent variables. Education is known to affect health by increasing health knowledge and behavior. This condition occurred because formal education improves cognitive abilities in general, such as the ability to acquire memory, process information, make decisions, and think critically, especially about issues related to health problems (Baker et al., 2011). Moreover, education owned by couples affects the environmental conditions in which they share material and social resources, enabling

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

them to be capable of forming a healthy lifestyle for both husband and wife (Kilpi et al., 2018).

Associated with this theory, the theoretical framework presented by Braveman et al. (2011) indicates that education affects health through health knowledge and a healthy lifestyle. In connection with the results of this study, Naviandi (2016) conducted research in Indonesia using 2013 Riskesdas data and found that women's education was negatively related to obesity, where the tendency of women to experience obesity decreased along with a higher education. Delisle (2006) also mentioned that obesity itself is strongly related to lifestyle and poor food consumption patterns (Naviandi, 2016). Moreover, research in Indonesia that revealed the determinants of heart disease as a noncommunicable disease reported that the prevalence of this disease increases when a person has a low education; consumes sweet food, caffeinated drinks, and less fruits and vegetables; and does not engage in physical activity (Delima, Mihardja & Siswoyo, 2009).

In terms of women as wives (Table 4), the health benefits gained from a highly educated husband may occur because of the tendency of well-educated men to be better at providing social support and making better health-related decisions (Kilpi et al., 2018). In addition, the resources available to improve welfare are greater with a highly educated partner. The advantage of having more resources is not limited to income maximization but also affects the achievable living environment and job market (Monden, 2003). Staying with a less-educated partner may more strongly affect an unhealthy lifestyle relative to staying with a highly educated partner because a less-educated partner is more strongly associated with a poor lifestyle (Cavelaars et al., 2000).

This study also indicates that a wife's educational attainment shows the same effect on a husband's health status when compared with his educational level. A possible mechanism is that, traditionally, the wife has a greater responsibility for the household chores than the husband, especially with respect to the family's health behavior (Cornelius et al., 2016; Torssander & Erikson, 2009; Umberson, 1992). The impact of educational attainment of the husband and the wife on the partner's health might be related to household equality in Indonesia. A study conducted by Rammohan and Johar (2009) indicated that women's autonomy in Indonesia is generally higher than in most Southeast Asian countries. Both the wife's and the husband's educational attainment have a positive effect on the autonomy of married women in Indonesia. The findings also indicate that the influence of a husband's education on women's autonomy in households is greater than the effect of women's education. This condition shows that the ability of Indonesian women to make decisions about themselves or close family members in the household was determined by their educational outcomes. A study by Samarakoon and Parinduri (2015) in Indonesia found that education had no effect on women's ability to make decisions in the household except related to savings. However, education

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

influences women's decisions regarding reproductive health, such as the choice of contraception (Beegle et al., 2001).

Meanwhile, research conducted by Utomo (2012) indicated that, even if educated, working, and contributing to the household economy, women in Indonesia still carry out the role of a housewife. The neo-traditional norm in Indonesia still puts men as the breadwinner in the household. Therefore, in Indonesia, the tendency of women to adopt a healthy lifestyle for themselves and their partners in line with their increasing education and knowledge (Umberson, 1992) affects their role in improving their husbands' health status.

The effect of the spouse's employment status on the husband's health is interesting to observe. As Table 3 indicates, a wife who does not work elevates the husband's health status by 2.3 percentage points. Bartley et al. (2004) stated that working women, especially those with a good occupation, have less time to do housework and provide social support to their spouses. Tangled with the allocation of time theory (Becker, 1965), our result indicates the possibility of women's time importance on household production, especially when producing health outputs. A study conducted by Lubna (2017) in Indonesia showed that full-time working mothers tend to reduce the time that they allocate to taking care of the household, especially by consuming food away from the home. The opposite results are shown when estimating the wife's health status: no significant relationship was found between the husband's employment status and the wife's health status (Table 4). Although previous research found that the husband's work has a direct influence on women's health (Skalická & Kunst, 2008) through psychosocial pathways, namely, high social status, wives are better at dealing with stress in the household and improving the balance between home and work by hiring domestic help or childcare (Bartley et al., 2004).

An inverse finding was also discovered regarding health behavior. When a husband smokes, his chances of being healthy increase by 1.66% relative to never having smoked. Meanwhile, if the husband has ever smoked, the chance that he has a healthy status declines by 9.31%. Previous research also showed that the tendency for a person to get sick increases when smoking (Wilson, 2002; Li et al., 2011). This increase occurs because a person tends to stop smoking when experiencing health problems (Pisinger et al., 2011), and when still healthy, the smoking behavior continues. In this study, the use of SRH may also influence the results of the analysis given that the health status being measured is the health condition according to the respondent's opinion rather than a doctor's diagnosis.

For both husband and wife, being in a low-income household increases their chances of being healthy relative to being in a more affluent household (high economic status), in contrast to previous studies that indicated a positive relationship between economic status and individual health conditions (Brown et al., 2014; Hosseinpoor et al., 2012). However, this result may occur because wealthy people tend to have unhealthy eating habits that

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

worsen health conditions (Grossman, 1972b). In addition, a study by Naviandi (2016) in Indonesia also supported this statement, where respondents with a high socioeconomic status have a higher risk of obesity than those with a low socioeconomic status. This finding is also supported by previous research conducted in Indonesia (Yogyakarta, Kuta, and Jakarta) that noted that high family income is related to obesity through fast-food consumption and lack of physical activity (Collins, Pakiz, & Rock, 2008).

Involving educational assortative mating when estimating health status indicates that the lowest possibilities of being healthy occur when both husband and wife have a low education. In concordance with previous results that proved that attaining the best SRH is possible when both husband and wife are highly educated (Brown et al., 2014; Kilpi et al., 2018). Rammohan and Johar (2009) found that the influence of a husband's education on a wife's autonomy in the household is stronger than the influence of her own educational attainment when a highly educated woman marries a highly educated man than when a woman has greater control in making household decisions. Thus, the educational homogamy of a less-educated couple causes health problems of both the husband and the wife to accumulate (Monden, 2007). Still, we must keep in mind that an individual with a less-educated partner tends to report poor SRH relative to someone with a highly educated partner. Monden (2003) explained that the accumulation of the social support and health behavior of the highly educated partner made this possible.

Table 5. Result of ordered logit model with dy/dx (healthy) and standard error (SE)

Independent variables	**Husband's health status**		**Wife's health status**	
	Healthy		**Healthy**	
	dy/dx(1) (SE)		**dy/dx(1) (SE)**	
(1)	**(2)**		**(3)**	
Educational Assortative Mating				
Low	- 0.0941***	(- 0.0050)	- 0.0766***	(0.0050)
Middle	- 0.0455***	(0.0049)	- 0.0339***	(0.0049)
Hypergamy	- 0.0616***	(0.0051)	- 0.0515***	(0.0052)
Hypogamy	- 0.0614***	(0.0052)	- 0.0502***	(0.0052)
High (ref.)				

*** = p < 0.01, ** = p < 0.05, * = p < 0.1

Estimation included all control variables as mentioned in the Model 3a and Model 3b

Source: Susenas 2017

The outcome refers to the lack of a difference between a hypergamy and a hypogamy couple related to their possibilities for elevating the husband's SRH. A sociological theory on class analysis states that a highly educated person is more able to influence his or her partner through his or her own information and opinions (Monden, 2007). Thus, both adults involved in a hypergamy or hypogamy status contribute to a partner's improved health status relative to when both are poorly educated. Furthermore, the effect of educational heterogamy (negative matching) on a husband's health status potentially referred to the substitution effect, namely, a theory expressed by Becker (1973) for which

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

a husband and a wife with different educational attainments compensate for each other's characteristics.

Meanwhile, a wife's SRH is slightly more preferable when educational heterogamy in a household is classified as hypogamy. This outcome indicates that a wife's higher educational attainment is of greater benefit to women. A previous study conducted in Nepal indicated that a wife's increasing educational attainment is positively connected to her ability to make health-related decisions (Acharya et al., 2010). The research conducted by Esteve et al. (2016) indicated that a hypogamy, not a hypergamy, tendency exists in Europe, where achievable higher education by women is thought to be the cause of this situation, in which women are "marrying down." The results also indicate that wives who are more educated than husbands are more likely to be the main breadwinners in the family. In addition, the smaller educational gap between husband and wife is related to gender equality in decision making in the household.

The smaller educational gap between husband and wife—related to gender equality in decision making in the household—also exists in Indonesia. Utomo (2014) concluded that the tendency to decrease "marrying up" reduces the gap in the age and educational levels between husband and wife, such that Indonesian women are more empowered and increase the gender equality in the household.

CONCLUSION

Based on the results of the study, it is concluded that being married to a highly educated partner increases the chances of someone having a better SRH than when married to a less-educated partner. Then, the analysis involving an educational assortative mating variable indicates that the best health conditions are achieved by husband and wife when both are highly educated, whereas educational homogamy in a less-educated partner reduces the SRH of both the husband and the wife. When couples have different educational levels (educational heterogamy), the wife benefits more if her educational level is higher than her husband's (hypogamy). These findings indicate that the presence of educational spillover between couples in Indonesia can maximize the health status of both husband and wife.

Furthermore, health is not only determined by own educational level but also by a spouse's educational attainment. These results show that considering how social relationships, especially marriages, can expand the potential resources to improve individual health is important. Therefore, improving individuals' health by observing the influence of their partners as a trend to improve public health in Indonesia is substantial. Then, women's increasing education and its significant role in improving their partners' health created a glimmer of hope that, in the future, more educated women can contribute significantly to improve household health in Indonesia.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

ACKNOWLEDGMENTS

We gratefully acknowledge financial support from Hibah Pitta 2018.

REFERENCES

Acharya, D. R., Bell, J. S., Simkhada, P., Van Teijlingen, E. R. & Regmi, P. R. (2010). Women's autonomy in household decision-making: a demographic study in Nepal. *Reproductive Health*, *7*, 15. http://dx.doi.org/10.1186/1742-4755-7-15. PubMed: 20630107.

Ahnquist, J., Wamala, S. P. & Lindstrom, M. (2012). Social determinants of health–a question of social or economic capital? Interaction effects of socioeconomic factors on health outcomes. *Social Science and Medicine*, *74*, 930-939. http://dx.doi.org/10.1016/j.socscimed.2011.11.026.

Amin, V., Behrman, J. R. & Kohler, H. P. (2015). Schooling has smaller or insignificant effects on adult health in the US than suggested by cross-sectional associations: new estimates using relatively large samples of identical twins. *Social Science and Medicine*, *127*, 181-189. http://dx.doi.org/10.1016/j.socscimed.2014.07.065. PubMed: 25110343.

Baker, D. P., Leon, J., Smith Greenaway, E. G., Collins, J. & Movit, M. (2011). The education effect on population health: a reassessment. *Population and Development Review*, *37*, 307-332. http://dx.doi.org/10.1111/j.1728-4457.2011.00412.x. PubMed: 21984851.

Bartley, M., Martikainen, P., Shipley, M. & Marmot, M. (2004). Gender differences in the relationship of partner's social class to behavioural risk factors and social support in the Whitehall II study. *Social Science and Medicine*, *59*, 1925-1936. http://dx.doi.org/10.1016/j.socscimed.2004.03.002.

Becker, G. S. (1965). A theory of the allocation of time. *The Economic Journal*, *75*, 493-517. http://dx.doi.org/10.2307/2228949.

Becker, G. S. (1973). A theory of marriage: Part I. *Journal of Political Economy*, *81*, 813-846. http://dx.doi.org/10.1086/260084.

Becker, G. S. (1981). *A treatise on the family*. Oxford, England: Oxford University Press.

Beegle, K., Frankenberg, E. & Thomas, D. (2001). Bargaining power within couples and use of prenatal and delivery care in Indonesia. *Studies in Family Planning*, *32*, 130-146. http://dx.doi.org/10.1111/j.1728-4465.2001.00130.x. PubMed: 11449862.

Benoit, C. & Shumka, L. (2009). Gendering the health determinants framework: why girls' and women's health matters. *Network*. Vancouver, BC: Women's Health Research.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

Braveman, P., Egerter, S. & Williams, D. R. (2011). The social determinants of health: coming of age. *Annual Review of Public Health*, *32*, 381-398. http://dx.doi.org/10.1146/annurev-publhealth-031210-101218. PubMed: 21091195.

Brown, D. C., Hummer, R. A. & Hayward, M. D. (2014). The importance of spousal education for the self-rated health of married adults in the United States. *Population Research and Policy Review*, *33*, 127-151. http://dx.doi.org/10.1007/s11113-013-9305-6. PubMed: 24511172.

Burström, B. & Fredlund, P. (2001). Self rated health: is it as good a predictor of subsequent mortality among adults in lower as well as in higher social classes? *Journal of Epidemiology and Community Health*, *55*, 836-840. http://dx.doi.org/10.1136/jech.55.11.836.

Cavelaars, A. E., Kunst, A. E., Geurts, J. J., Crialesi, R., Grötvedt, L., Helmert, U. & Mackenbach, J. P. (2000). Educational differences in smoking: international comparison. *BMJ*, *320*, 1102–1107. http://dx.doi.org/10.1136/bmj.320.7242.1102. PubMed: 10775217.

Chang, V. W. & Lauderdale, D. S. (2009). Fundamental cause theory, technological innovation, and health disparities: the case of cholesterol in the era of statins. *Journal of Health and Social Behavior*, *50*, 245-260. http://dx.doi.org/10.1177/002214650905000301. PubMed: 19711804.

Collins, A. E., Pakiz, B. & Rock, C. L. (2008). Factors associated with obesity in Indonesian adolescents. *International Journal of Pediatric Obesity*, *3*, 58-64. http://dx.doi.org/10.1080/17477160701520132.

Cornelius, T., Desrosiers, A. & Kershaw, T. (2016). Spread of health behaviors in young couples: how relationship power shapes relational influence. *Social Science and Medicine*, *165*, 46-55. http://dx.doi.org/10.1016/j.socscimed.2016.07.030.

Craddock, E., vanDellen, M. R., Novak, S. A. & Ranby, K. W. (2015). Influence in relationships: A meta-analysis on health-related social control. *Basic and Applied Social Psychology*, *37*, 118–130. http://dx.doi.org/10.1080/01973533.2015.1011271.

Cutler, D. M. & Lleras-Muney, A. (2006). *Education and health: evaluating theories and evidence*, (No. w12352). National bureau of economic research.

de Montigny, F., Meunier, S., Cloutier, L., Tremblay, G., Coulombe, S., Auger, N. & Dion, H. (2016). Spousal positive social control and men's health behaviors and self-efficacy: the influence of age and relationship satisfaction. *Journal of Social and Personal Relationships*, 1-18.

Delima, D., Mihardja, L. & Siswoyo, H. (2009). "Prevalensi dan faktor determinan penyakit jantung di Indonesia" [Prevalence and determinants of heart disease in Indonesia]. *Buletin Penelitian Kesehatan*, *37*. [*Health Research Bulletin*]

Duflo, E. (2012). Women empowerment and economic development. *Journal of Economic Literature*, *50*, 1051-1079. http://dx.doi.org/10.1257/jel.50.4.1051.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

Egeland, G. M., Tverdal, A., Meyer, H. E. & Selmer, R. (2002). A man's heart and a wife's education: a 12-year coronary heart disease mortality follow-up in Norwegian men. *International Journal of Epidemiology*, *31*, 799-805. http://dx.doi.org/ 10.1093/ije/31.4.799. PubMed: 12177024.

Esteve, A., Schwartz, C. R., Van Bavel, J., Permanyer, I., Klesment, M. & Garcia, J. (2016). The end of hypergamy: global trends and implications. *Population and Development Review*, *42*, 615-625. http://dx.doi.org/10.1111/padr.12012. PubMed: 28490820.

Farida, R. (2014). "*Studi tentang pengaruh status peran ganda terhadap kesehatan perempuan menikah di Indonesia (analisis data Susenas 2012)"*[Effect of dual role status on the health of married women in Indonesia (2012 Susenas data analysis)]. Thesis of Population and Labor Studies. Depok: Postgraduate Program, Universitas Indonesia.

Fuhrer, R., Shipley, M. J., Chastang, J. F., Schmaus, A., Niedhammer, I., Stansfeld, S. A. & Marmot, M. G. (2002). Socioeconomic position, health, and possible explanations: a tale of two cohorts. *American Journal of Public Health*, *92*, 1290-1294. http://dx.doi.org/10.2105/AJPH.92.8.1290. PubMed: 12144986.

Glied, S. & Lleras-Muney, A. (2008). Technological innovation and inequality in health. *Demography*, *45*, 741-761. http://dx.doi.org/10.1353/dem.0.0017. PubMed: 1893 9670.

Goesling, B. (2007). The rising significance of education for health? *Social Forces*, *85*, 1621-1644. http://dx.doi.org/10.1353/sof.2007.0068.

Grossman, M. (1972a). On the concept of health capital and the demand for health. *Journal of Political Economy*, *80*, 223-255. http://dx.doi.org/10.1086/259880.

Grossman, M. (1972b). *The demand for health: a theoretical and empirical investigation*. New York: Columbia University Press for the National Bureau of Economic Research.

Grossman, M. (1976). The correlation between health and schooling. In *Household production and consumption*. *National Bureau for Economic Research*, (pp. 147-224).

Hosseinpoor, A. R., Stewart Williams, J., Amin, A., Araujo de Carvalho, I., Beard, J., Boerma, T., Kowal, P., Naidoo, N., Chatterji, S. & Chatterji, S. (2012). Social determinants of self-reported health in women and men: understanding the role of gender in population health. *PLOS ONE*, *7*, e34799. http://dx.doi.org/10.1371/journal.pone.0034799. PubMed: 22514667.

House, J. S. (2002). Understanding social factors and inequalities in health: 20th century progress and 21st century prospects. *Journal of Health and Social Behavior*, *43*, 125-142. http://dx.doi.org/10.2307/3090192. PubMed: 12096695.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

Hughes, M. E. & Waite, L. J. (2002). Health in household context: living arrangements and health in late middle age. *Journal of Health and Social Behavior, 43*, 1–21. http://dx.doi.org/10.2307/3090242. PubMed: 11949193.

Huijts, T. (2011). *Social ties and health in Europe. Individual associations, cross-national variations, and contextual explanations.* Nijmegen: Radboud University Nijmegen.

Huijts, T., Monden, C. W. S. & Kraaykamp, G. (2010). Education, educational heterogamy, and self-assessed health in Europe: a multilevel study of spousal effects in 29 European countries. *European Sociological Review, 26*, 261-276. http://dx.doi.org/10.1093/esr/jcp019.

Hurt, L. S., Ronsmans, C. & Saha, S. (2004). Effects of education and other socioeconomic factors on middle age mortality in rural Bangladesh. *Journal of Epidemiology and Community Health, 58*, 315-320. http://dx.doi.org/10.1136/jech.2003.007351.

Idler, E. L. & Benyamini, Y. (1997). Self-rated health and mortality: a review of twenty-seven community studies. *Journal of Health and Social Behavior, 38*, 21-37. http://dx.doi.org/10.2307/2955359. PubMed: 9097506.

International Labour Organization. (2010). *Ekonomi informal Indonesia: ukuran, komposisi dan evolusi*. Jakarta: International Labour Organization.

Jacobson, L. (2000). The family as producer of health: an extended Grossman model. *Journal of Health Economics, 19*, 611-637. http://dx.doi.org/10.1016/S0167-6296(99)00041-7. PubMed: 11184796.

Jaffe, D. H., Eisenbach, Z., Neumark, Y. D. & Manor, O. (2005). Does one's own and one's spouse's education affect overall and cause-specific mortality in the elderly? *International Journal of Epidemiology, 34*, 1409-1416. http://dx.doi.org/ 10.1093/ije/dyi185. PubMed: 16144860.

Jaffe, D. H., Eisenbach, Z., Neumark, Y. D. & Manor, O. (2006). Effects of husbands' and wives' education on each other's mortality. *Social Science and Medicine, 62*, 2014-2023. http://dx.doi.org/10.1016/j.socscimed.2005.08.030. PubMed: 16199120.

Kalmijn, M. (1998). Intermarriage and homogamy: cause, patterns, trends. *Annual Review of Sociology, 24*, 395-421. http://dx.doi.org/10.1146/annurev.soc.24.1.395.

Kilpi, F., Martikainen, P., Konttinen, H., Silventoinen, K., Torssander, J. & Kawachi, I. (2018). The spillover influence of partner's education on myocardial infarction incidence and survival. *Epidemiology, 29*, 237-245. http://dx.doi.org/10.1097/EDE.0000000000000785. PubMed: 29135570.

Li, Y., Fu, H., Zhao, F., Luo, J. & Kawachi, I. (2013). Influence of spousal education on partner's self-rated health: cross-sectional study among 1382 married couples in Shanghai, China. *Asia-Pacific Journal of Public Health, 25*, 398-408. http://dx.doi.org/10.1177/1010539511420417. PubMed: 22087039.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

Lillard, L. A. & Waite, L. J. (1995). 'Til death do us part: marital disruption and mortality. *American Journal of Sociology, 100,* 1131-1156. http://dx.doi.org/10.1086/230634.

Lubna. (2017). "*Pengaruh status bekerja ibu terhadap konsumsi makanan jadi di Indonesia"* [Effect of working mom on the consumption of processed food in Indonesia]. Thesis of Population and Labor Studies. Depok: Postgraduate Program, Universitas Indonesia.

Meyler, D., Stimpson, J. P. & Peek, M. K. (2007). Health concordance within couples: a systematic review. *Social Science and Medicine, 64,* 2297-2310. http://dx.doi.org/10.1016/j.socscimed.2007.02.007. PubMed: 17374552.

Monden, C. (2007). Partners in health? Exploring resemblance in health between partners in married and cohabiting couples. *Sociology of Health and Illness, 29,* 391-411. http://dx.doi.org/10.1111/j.1467-9566.2007.01003.x.

Monden, C. W., Van Lenthe, F., De Graaf, N. D. & Kraaykamp, G. (2003). Partner's and own education: does who you live with matter for self-assessed health, smoking and excessive alcohol consumption? *Social Science and Medicine, 57,* 1901-1912. http://dx.doi.org/10.1016/S0277-9536(03)00055-8. PubMed: 14499514.

Monden, C. W. S. (2003). *Education, inequality and health: the impact of partners and the life course*. (Doctoral Dissertation, [Sl: sn]).

Naviandi, U. (2016). *Hubungan living arrangement dan status kawin dengan Obesitas pada wanita usia produktif di Indonesia (analisis data Riskesdas 2013)* [*Relationship between living arrangements and marital status with obesity in women of childbearing age in Indonesia (2013 Riskesdas data analysis)*]. Thesis of Population and Labor Studies. Depok: Postgraduate Program, Universitas Indonesia.

Osiewalska, B. (2017). Childlessness and fertility by couples' educational gender (in) equality in Austria, Bulgaria, and France. *Demographic Research, 37,* 325-362. http://dx.doi.org/10.4054/DemRes.2017.37.12.

Pisinger, C., Aadahl, M., Toft, U. & Jørgensen, T. (2011). Motives to quit smoking and reasons to relapse differ by socioeconomic status. *Preventive Medicine, 52,* 48-52. http://dx.doi.org/10.1016/j.ypmed.2010.10.007. PubMed: 21047525.

Rammohan, A. & Johar, M. (2009). The determinants of married women's autonomy in Indonesia. *Feminist Economics, 15,* 31-55. http://dx.doi.org/10.1080/ 1354570 0903153989.

Rice, N., Carr-Hill, R., Dixon, P. & Sutton, M. (1998). The influence of households on drinking behaviour: A multilevel analysis. *Social Science and Medicine, 46,* 971–979. http://dx.doi.org/10.1016/S0277-9536(97)10017-X. PubMed: 9579749.

Samarakoon, S. & Parinduri, R. A. (2015). Does education empower women? Evidence from Indonesia. *World Development, 66,* 428-442. http://dx.doi.org/10.1016/j.worlddev.2014.09.002.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

Singh, G. K. & Siahpush, M. (2014). Widening rural–urban disparities in life expectancy, US, 1969–2009. *American Journal of Preventive Medicine*, *46*, e19-e29. http://dx.doi.org/10.1016/j.amepre.2013.10.017. PubMed: 24439358.

Skalická, V. & Kunst, A. E. (2008). Effects of spouses' socioeconomic characteristics on mortality among men and women in a Norwegian longitudinal study. *Social Science and Medicine*, *66*, 2035-2047. http://dx.doi.org/10.1016/j.socscimed.2008.01.020.

Sørheim, I. C., Johannessen, A., Gulsvik, A., Bakke, P. S., Silverman, E. K. & DeMeo, D. L. (2010). Gender differences in COPD: are women more susceptible to smoking effects than men? *Thorax*, *65*, 480-485. http://dx.doi.org/10.1136/thx.2009.122002. PubMed: 20522842.

Spasojević, J. (2010). Effects of education on adult health in Sweden: results from a natural experiment. In *Current issues in health economics*. Emerald Group Publishing Limited, (pp. 179-199). Chapter 9.

Syse, A. & Lyngstad, T. H. (2017). In Sickness and in Health: the role of marital partners in cancer survival. *SSM - Population Health*, *3*, 99-110. http://dx.doi.org/10.1016/j.ssmph.2016.12.007. PubMed: 29349208.

Torssander, J. & Erikson, R. (2009). Marital partner and mortality: the effects of the social positions of both spouses. *Journal of Epidemiology and Community Health*, *63*, 992-998. http://dx.doi.org/10.1136/jech.2009.089623. PubMed: 19808710.

Torssander, J. & Erikson, R. (2010). Stratification and mortality—A comparison of education, class, status, and income. *European Sociological Review*, *26*, 465-474. http://dx.doi.org/10.1093/esr/jcp034.

Umberson, D. (1992). Gender, marital status and the social control of health behavior. *Social Science and Medicine*, *34*, 907-917. http://dx.doi.org/10.1016/0277-9536(92)90259-S. PubMed: 1604380.

Umberson, D., Crosnoe, R. & Reczek, C. (2010). Social relationships and health behaviors across the Life Course. *Annual Review of Sociology*, *36*, 139–157. http://dx.doi.org/10.1146/annurev-soc-070308-120011. PubMed: 21921974.

Umberson, D. & Montez, J. K. (2010). Social relationships and health: a flashpoint for health policy. *Journal of Health and Social Behavior*, *51*, (Suppl.), S54–S66. http://dx.doi.org/10.1177/0022146510383501. PubMed: 20943583.

Utomo, A. J. (2012). Women as secondary earners. *Asian Population Studies*, *8*, 65-85. http://dx.doi.org/10.1080/17441730.2012.646841.

Utomo, A. J. (2014). Marrying up? Trends in age and education gaps among married couples in Indonesia. *Journal of Family Issues*, *35*, 1683-1706. http://dx.doi.org/10.1177/0192513X14538023.

Willemsen, G., Vink, J. M. & Boomsma, D. I. (2003). Assortative mating may explain spouses' risk of same disease. *BMJ*, *326*, 396. http://dx.doi.org/10.1136/bmj.326.7385.396/a. PubMed: 12586682.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

Wilson, S. E. (2002). The health capital of families: an investigation of the inter-spousal correlation in health status. *Social Science and Medicine*, *55*, 1157-1172. http://dx.doi.org/10.1016/S0277-9536(01)00253-2. PubMed: 12365528.

Wood, R. G., Goesling, B. & Avellar, S. (2007). *The effects of marriage on health: A synthesis of recent research evidence.* Retrieved from Worldbank.org/ data. *Princeton, NJ:* Mathematica Policy Research, Inc.

World Health Organization. (2016). *Global health estimates 2015: deaths by cause, age, sex, by country and by region*. Geneva: World Health Organization, (pp. 2000-2015).

Xu, X., Weiss, S. T., Rijcken, B. & Schouten, J. P. (1994). Smoking, changes in smoking habits, and rate of decline in FEV1: new insight into gender differences. *European Respiratory Journal*, *7*, 1056-1061. PubMed: 7925873.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:22.

SECTION 2: MANAGEMENT STRATEGY AND HUMAN RESOURCE

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:34.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:48:34.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 9

IMPACT OF FAMILY OWNERSHIP AND POLITICAL CONNECTIONS ON EARNINGS MANAGEMENT STRATEGIES

Nirma Amalia and Sylvia Veronica Siregar*
Department of Accounting, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This study examines the impact of family ownership and political connections on earnings management strategies (accrual earning management vs real earning management). The study period is from 2012 to 2015 using 1451 firm-years. Our results show family ownership tends to choose accrual earnings management and companies with political connections also tend to use accrual earnings management than real earnings management.

Keywords: family ownership, political connection, accrual earnings management, real earnings management

INTRODUCTION

A company was established to increase the prosperity of the owners both shareholders and companies owned by a family. The ownership of the company by the

* Corresponding Author's E-mail: sylvia.veronica@ui.ac.id.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:49:34.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 9

IMPACT OF FAMILY OWNERSHIP AND POLITICAL CONNECTIONS ON EARNINGS MANAGEMENT STRATEGIES

Nirma Amalia and Sylvia Veronica Siregar*
Department of Accounting, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This study examines the impact of family ownership and political connections on earnings management strategies (accrual earning management vs real earning management). The study period is from 2012 to 2015 using 1451 firm-years. Our results show family ownership tends to choose accrual earnings management and companies with political connections also tend to use accrual earnings management than real earnings management.

Keywords: family ownership, political connection, accrual earnings management, real earnings management

INTRODUCTION

A company was established to increase the prosperity of the owners both shareholders and companies owned by a family. The ownership of the company by the

* Corresponding Author's E-mail: sylvia.veronica@ui.ac.id.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:49:43.

family can be seen clearly that the company is controlled by the family and is motivated so that assets do not fall to other parties. In the business world, corporate structures with family ownership have a stake in a country's economy. In Japan, multinational family companies have a strong influence on the country's economy, such as Toyota Motor Corporation, Panasonic, Kikkoman Corp, and Epson (Chen et al., 2015). The Fur Mittelstandsforschung Institute (IFM) suggests that 95% of companies in Germany are owned by families and contribute around 41.5% of state income, and 57.3% of workers (Achleitner et al. 2014).

According to a survey conducted by PwC (2014), about 60% of listed companies in Southeast Asia are family owned and consider leadership inheritance one of their priorities. Furthermore, more than 95% of businesses in Indonesia are family ownership. Family firms in Indonesia contribute about 25% of the Gross Domestic Product (GDP). The abovementioned facts indicate that a family-owned company constitutes a major share in a country's economy.

In addition to the structure of family ownership, political relations have a very important role in several countries. Companies in Malaysia are dominated by companies that have political relations (Al-dhamari et al., 2015). Narayanaswamy (2013) suggested that companies that have political relations in India are engaged in strategic industries such as manufacturing, energy, transportation, telecommunications and mining. In China, political relations help private companies maximize profits when private companies are discriminated against by the government (Li et al., 2007).

In Indonesia, political connections began gaining importance during the reign of President Soeharto. An impact of this phenomenon was the granting of import licences to companies that have political connections (Mobarak and Purbasari, 2006; Nurhayati, 2012) while during the reign of President Joko Widodo, the state-owned company commissioner was appointed from political parties and from among activists and volunteer teams (Kompas, 2015). The government needs to consider the competence of the directors or commissioners in a state-owned company because the government is interested in making such companies contribute positively to the country (Pranoto and Widagdo, 2016).

Companies are said to have political connections if the shareholders or top managers are government officials and have close relationships with political parties as well as their politicians (Faccio, 2006; Bram et al., 2015). Political connections positively affect the allocation of capital and the business profits of firms, thereby offering them competitive advantages over companies that have no political connections (Fisman, 2001; Bram et al., 2015). However, a disadvantage of such connections is that companies use their proximity to the government to obtain preferential treatment, which reduces both the possibility of tax audits and also tax sanctions (Li et al., 2007). Family ownership and having political connections are both particularly risky to the pressures, and interfere with the reported earnings quality. The earnings quality can be gauged when a company

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:49:43.

undertaken earnings management. There are two types of earnings management: accrual and real earnings management. Accrual is an adjustment of assumptions and using estimates in an accounting system, which does not affect the cash flow (Bozzolan et al., 2015). Accrual earnings management consists of two parts, which are discretionary (accruals referring to the deliberate and deliberate adjustments made by the manager) and a nondiscretionary (accrued that incur due to normal business operation) accruals. Real earnings management refers to the game of profit figures derived from normal business activities related to operational activities (Nurhayati, 2012). Furthermore, Thomas and Zhang (2002) provide examples of real earnings management such as manager overproduction reduces the COGS (cost of goods sold), pending the expenditures of R&D costs (research and development) as well as other capital expenditure.

Chaney et al. (2011) suggested that companies having political connections are under higher public scrutiny than are companies without any such connections. Consequently, the benefits gained from having political connections need to be hidden, especially if the company is big. Conversely, if a company that has political connections is identified by the media, then the political parties undertaking profit management practices for the personal benefit of the company may withdraw the benefits of such political connections (Faccio, 2006), such as undermining the integrity, reputation of the company, reputation of the connected politicians and possible external interventions (Faccio, 2006; Ramanna and Roychowdhury, 2010; Bram et al., 2015).

Political connections can provide an opportunity for companies to practice profit-based accrual earnings management. Kim and Zhang (2013) argued that such companies will receive protection and easy access from the government, such as the risk of low tax audits. Consequently, these companies would conduct earnings management more aggressively, resulting in non-transparency.

Indonesia Corruption Watch (ICW) (2016) reported 482 corruption cases in Indonesia in 2016, with 1,101 corruption suspects and state losses of 1.47 trillion. Furthermore, ICW (2015) reported that 52.3% of the members of the legislative are entrepreneurs. Thus, the fact that corruption is rampant among the political connections in Indonesia cannot be ignored, especially related to the financial reporting concerning the interests of many parties.

This study refers to the research by Achleitner et al. (2014) and Chen et al. (2015) regarding the selection of earnings management strategies of family companies in Germany and Japan, as well as Braam et al. (2015) regarding the selection of corporate earnings management strategies that have political relations in several countries. Achleitner et al. (2014) suggest that earnings management of real and accrual-based activities have a negative relationship with family companies in Germany, and non-family companies in Germany use real earnings management more than family firms. However, despite having a negative relationship, companies with family ownership in Germany tend to do accrual earnings management by reporting lower profits. The results

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:49:43.

of Achleitner et al. (2014) show that family companies in Germany tend to care about the long-term value of the company and report lower profits in order to reduce pressure from shareholders on higher dividend distribution. This strategy is expected to help companies maintain future investments and help family business businesses survive in the long-term. The Achleitner et al. (2014) reinforced by research conducted by Chen et al. (2015), companies with family ownership in Japan tend to use accrual-based earnings management by reporting lower profits. Family companies in Japan tend to be more concerned with investor reputation and the cost of managing accrual earnings is lower than using real activity earnings management.

Research by Braam et al. (2015) also provide evidence that political relations provide a significant role in the selection of earnings management strategies and companies that have political relations tend to use earnings management in the form of real activities that are difficult to detect compared to companies that have no political relations. This is because companies that have political relations are under higher public scrutiny than companies that do not have a political relationship (Chaney et al., 2011).

To the best of our knowledge, there are no studies examining the trade-off between accrual and real earning management by considering both family ownership and political connections. Considering Indonesia has high level of family ownership and also well known for its political connections, it is interesting to study about the effect of family ownership and political connections on earnings management strategies.

The remainder of the paper is organised as follows. The next section reviews the related literature, followed by sections on the research method, data analysis, and the conclusion.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

LITERATURE REVIEW

Agency Theory

The agency theory emerges when there is a separation between the owner and manager of a company. Jensen and Meckling (1976) explain that agency relations occur when there is a contract underlying the principal of the company delegating authority to another party through an agent. As agents, managers are responsible for undertaking the company's activities as optimally as possible, and are compensated in return. There are two differences of interest in a company, both the company owner (principal) and the manager (agent) trying to reach the desired level of prosperity. Agency issues may include misuse of funds or company assets, overmanaging of facilities by managers, retention of profits into subsequent accounting periods and other frauds that may reduce profits (Arifin, 2003).

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:49:43.

Managers have more information than the owner of a company, a situation that could lead to information asymmetry. Scott (2015) divides information asymmetry into two types:

1. Adverse Selection. This type of information asymmetry occurs prior to the occurrence of a transaction, that is, the manager has all the information that is unknown to the owner of the company or investor. The manager hides and biases information about the company's condition, which may cause the capital market to malfunction as well because the information provided by the manager is either less or less transparent.
2. Moral Hazard. In contrast to Adverse Selection, Moral Hazard occurs after a transaction, that is, the activities undertaken by the manager of a company are not fully known by the shareholders and creditors. Managers can act beyond the knowledge of shareholders, where they may violate the contract and not maximizing the principal's wealth.

According to Ali et al. (2007), agency problems in a company occur because of the following two reasons: (1) the separation between the owner and manager of a company, that is, the company manager does not act in accordance with the company owner (type 1); and (2) conflicts between the controlling and minority shareholders (type 2). As majority of firms in Indonesia is family-controlled firms, then agency conflict type 2 is the most common one. The owner of the family, as the controlling shareholder, tends to maintain his or her dominance within the company through its management and also the limitation of the good coorprorate governanve practice (Claessens et al., 2000). The limitation of the good coorprorate governanve practices is contrary to the principle of corporate governance for equal treatment of other shareholders. This conflict of interest thus led to expropriation by the family shareholders, with inadequate corporate governance practices (Faccio et al., 2001).

Ownership Structure

Ownership structure describes the composition of share ownership and explains the shareholders' commitment to safeguard the company. According to Hastuti (2005), the ownership structure is divided into three: (1) ownership spreads—the company will offer big rewards to the management compared to the concentrated companies; (2) concentrated ownership—the ownership of the company will be divided into two—the controlling and minority shareholders; and (3) ownership in an State Owned Enterprises/SOE—the owner is represented by a designated official to avoid directly controlling the company. Ownership structure can influence the way a company functions

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:49:43.

and ultimately affects the financial statements because of the control (Wiryadi and Sebrina, 2013).

Family Ownership

Generally, family ownership refers to a company established or controlled by people who have blood or marital relationships and with family members owning the majority share. Achleitner (2014) explains that a company is considered a family company if one member of the family holds the board of directors or if the family members have about 25% of the voting rights. Razzaque et al. (2016) explain that a company is considered a family company if one or more of the directors are family members and own a 10% shareholding. Chen et al. (2015) classify family enterprises into three types, as follows: (1) Companies with more than 10% shareholding are owned by the founding family and the CEO is a family member; (2) Companies with more than 10% shareholding are owned by the founding family, but the CEO is not a member of the family; and (3) Share ownership is less than 10%, CEO of the founding family.

Anderson and Reeb (2003) stated that family firms perform better than other nonfamily companies, both in terms of profitability and the market. This is consistent with Muttakin et al. (2015) who state that family companies in Bangladesh perform better than nonfamily firms do. This is because family firms in Bangladesh are focused on the long term and are strongly motivated to ensure being inherited by the next generation. However, Barth et al. (2005) found that family firms had lower productivity compared to nonfamily firms. Family firms may use resources freely (DeAngelo and DeAngelo, 2000) and the high transactions with related parties could be detrimental to the minority shareholders (Faccio et al., 2001).

Political Connections

A company is said to have political relations if one of the shareholders owns at least 10% of the company's shares or one of the top managers (CEO, president director, director, secretary) is a member of parliament, minister or has a close relationship with a political party (Faccio, 2006). Johnson and Mitton (2003) suggest that the close relationship in question is: (1) Top executives or major shareholders have friendly relations with the government (president, prime minister, minister or member of parliament). (2) Connections with government officials who have served in the previous period. (3) Top executives or shareholders are directly involved in the world of politics. Political relations can provide benefits for companies that can increase the value of the company. Faccio (2006) explains that the value of a company will also increase if

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:49:43.

political relations become an indicator in determining investment. According to Leuz and Oberholzer-Gee (2006), political relations can provide benefits to companies that companies can have easier access to debt financing, low taxes, and strong market forces. The company will still exist in the capital market because it is considered to have a low cost of debt and budget constraints, and has less competition and market pressure compared to companies that do not have political connections.

Political connections are prevalent in countries with high levels of corruption. According to the Report of the World Anti-Corruption Agency (Transparency International), in 2016 Indonesia ranked 90th among 176 countries. Donald Fariz in VOA Indonesia (2017), the coordinator of the Corruption Division of ICW said that corruption by local house of representatives (*Dewan Perwakilan Daerah/*DPRD) and regional heads usually done through fictitious project tenders, extortion mark-ups, and tax evasion. This resulted in political connections having their own shortcomings. Fan et al. (2004) reported the results of the research that CEOs with political connections had a lower performance of about 37% compared with firms with no political connections, when measured by their stock return three years after the IPO/initial public offering. This is consistent with the research conducted by Wong and Hooy (2018) that companies having political connections from family members have poor performance.

An important characteristic of companies in Indonesia is that most are family firms. Claessens et al. (2002) suggest that about nine countries (including Indonesia) in East Asia have primarily family companies. Family-owned companies have low agency conflicts due to the close relationship between the management and the owners of the company (Chen et al., 2015). Anderson and Reeb (2003) argue that the controlling shareholders will choose individuals related to them to fill the top management positions, because family wealth is closely related to the well-being of the company. However, Fan and Wong (2002) found that family firms with majority ownership rights have low informativeness earnings. In addition, decision making has the potential to harm minority shareholders in various ways, such as corporate earnings management. Family-owned companies tend to use accrual earnings management as opposed to real activity management (Achleintner et al., 2014). Management of real activity earnings does not cause the company's normal activity to be optimal. Real earnings management can increase profits, but cannot help increase the value of the company in the long term (Febriana, 2013). Family-owned companies tend to maintain their value and reputation to sustain future investments and help family firms survive in the long term. Chen et al. (2015) argue that family-owned firms are more concerned about investors and managing earnings with lower accruals than using real earnings management.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:49:43.

Earnings Management

Earnings management can reduce the credibility of financial statements and add bias to them. It is a management intervention of an external financial reporting process with the aim of making profit for personal gain (Schipper, 1989). Rosenzweig and Fischer (1994) define earnings management as an action performed by the management to increase or decrease earnings in the current period without affecting the increase or decrease in corporate profitability in the long term. Healy and Wahlen (1999) argue that earnings management occurs when managers use their judgement to prepare financial statements that could mislead stakeholders regarding firm performance.

The following are two perspectives on why managers undertake earnings management: (1) Information perspective—earnings management is a management policy that will expect income from the company's cash flow in the future. Efforts to influence information are exercised by using the freedom to choose or change accounting methods and procedures. (2) Opportunistic perspective—earnings management is the behaviour of managers to deceive investors and maximise their welfare because they have more information than others (Sulistyanto, 2008).

Accrual Earnings Management

Accrual is an adjustment of the assumptions and estimates in an accounting system, which do not affect the cash flow (Bozzolan et al., 2015). Accrual-based management is an earnings management strategy that does not require physical cash flows impact, so that accrual earnings management do not have any direct impact on cash received or paid by the company. Essentially, accruals are important for generating legitimate corporate financial statements, but the accruals used by management in financial statements are accruals that have been engineered to influence shareholder decisions (Anggraini and Trisnawati, 2008). Accrual consists of two types: discretionary (accruals referring to the deliberate judgments made by managers) and nondiscretionary (accruals occur normally in business operations) accruals. Discretionary accruals are usually used to measure earnings management because it can represent management efforts to achieve specific profit number.

Real Earnings Management

Roychowdhury (2006) defines real earnings management as an action performed by the management deviating from normal business activities with the motivation to mislead some stakeholders that the company's operating activities have been carried out normally. Real earnings activity management is undertaken in three ways, as follows:

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:49:43.

1. Sales manipulation
   Management undertakes this to temporarily increase sales in one period by offering massively discounted rates or providing credit on easier terms.
2. Excessive production
   Management makes a policy by producing large quantities of products with production objectives undertaken by firms which resulted in the firm's fixed costs are spread to more production units.
3. Decrease in discretionary expense
   Management lowers discretionary expenses such as R&D expenses, sales and advertising and general and administrative expenses to increase the current earnings.

METHODS

The purpose of this study is to examine the influence of family firms and political relations on the selection of corporate earnings management strategies as the dependent variable. The research model used refers to Bram et al. (2015) but this research does not include some irrelevant control variables because the following control variables are related to country-level variables such as the freedom of press index, a country's corruption index, Gross Domestic Product (GDP), and inflation. In this study, using 2 research models, the difference between the two is that testing model 1 is used to see the trade-off between accrual earnings management and real activity earnings management. This model also explains the company carries out the practice of accrual earnings management and earnings management in real activities in a substitute or complementary manner. While testing model 2 there are additional moderation variables. This is to see the selection of the company's earnings management strategy (accrual earnings management or real activity earnings management). The following models in this study are as follows:

$$REM_PROX = \beta_0 + \beta_1 AM + \beta_2 Connect + \beta_3 Fam + \beta_4 Lev + \beta_5 ROA + \beta_6 MKTB + \beta_7 Size + e_{it}$$

$$REM_PROX = \beta_0 + \beta_1 AM + \beta_2 Connect + \beta_3 Fam + \beta_4 AM\ x\ Connect + \beta_5 AM\ x\ Fam + \beta_6 Lev + \beta_7 ROA + \beta_8 MKTB + \beta_9 Size + e_{it}$$

The dependent variable in this study is real earnings management, and the independent variables are accrual earnings management (where β_1 represents the trade-

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:49:43.

off between accrual and real earnings management). According to Roychowdhury (2006) earnings management based on real activities is a management action that deviates from the normal activities of the company with the main goal of achieving profit targets. In this study, real activity earnings management is measured in three ways namely abnormal cash flow, abnormal production costs and abnormal discretionary costs.

1. *Abnormal Cash Flow from Operation (Abn_CFO).* The abnormal activity cash flow is obtained from the difference in the cash flow of the actual operating activities scaled by the total assets of the previous year reduced by the cash flows of normal activities.
2. *Abnormal Production (Abn_PROD).* Abnormal production costs are obtained from the difference in actual production costs scaled by the total assets of the previous year less the production costs of normal activities.
3. *Abnormal Discretionary Expenses (Abn_DiscExp).* Abnormal discretionary expenses are obtained from the difference between the actual discretionary expenses with the total assets of the previous year reduced by normal discretionary expenses.

The independent variable of accrual earnings management uses the model of Kothari et al. (2005) as the basis for measuring discretionary accruals. According to Suyono (2017) Kothari et al. (2005) incorporating Return on Asset (ROA) elements will minimize specification errors, so as to be able to accurately measure accrual earnings management. Discretionary accruals with the approach of Kothari et al. (2005) with these steps:

$$Total\ Accrual_t = Laba_t - CFO_t$$

Regress the following equation to get the coefficient values β0, β1, β2, and β3 which are processed in cross section per industry per year.

$$\frac{TAC_{it}}{TA_{it-1}} = \beta_0 \frac{1}{TA_{it-1}} + \beta_1 \left(\frac{\Delta Sales_{it-\Delta Rec_{it}}}{TA_{it-1}}\right) + \beta_2 \frac{PPE_{it}}{TA_{it-1}} + \beta_3[ROA_{it}] + \in_{it}$$

Calculates the discretionary non-accrual value by entering the coefficients of β0, β1, β2, and β3 into the following equation.

$$NDA_{it} = \beta_0 \frac{1}{TA_{it-1}} + \beta_1 \left(\frac{\Delta Sales_{it-\Delta Rec_{it}}}{TA_{it-1}}\right) + \beta_2 \frac{PPE_{it}}{TA_{it-1}} + \beta_3[ROA_{it}] + \in_{it}$$

Calculate discretionary accruals from the residual value of discretionary accruals using the following formula:

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:49:43.

$$DCA_t = TAC_t - NDA_t$$

Political connection (1 if the company has a political connection, which states that at least the members of the board of directors or the board of commissioners are serving or have served as state officials and have contributed in politics, and 0 otherwise) and family ownership (percentage of family ownership). The control variables in this study are leverage, return on assets ratio, market to book ratio, and firm size.

Political connection is the independent variable based on Faccio's (2006) definition that one of the leaders of a company, shareholder, or top management is a member of the government, serving as high state officials, high members of parliament, ministers or regional heads, members of political parties or have a close relationship with political party officials. This definition is supported by Braam et al. (2015) who categoryze political connection as follows: one of the shareholders owns at least 10% of the voting rights directly or indirectly, and the chairman or member of the board of directors or chairman or member of the board of commissioners is serving the parliament, party members and heads of government or has occupied positions of government related to politics such as army retired officers.

This study defines family ownership using the definition of Arifin (2003), that is, all individuals and companies whose holdings are listed (ownership > 5% must be recorded), not public, state, financial and public (individuals whose ownership is not mandatory).

These research also have control variables (1) Leverage, Leverage is the ratio of the company's total debt to the total assets of the company (Ghosh and Tang, 2015), (2) Market to Book Ratio, Market to book ratio is one way to find out whether a company is undervalued or overvalued. The lower the value (undervalued) market to book ratio, the better the market value of the company, the company's prospects can be said to be good and will continue to grow. (3) Return on Assets (ROA) is a ratio to see how efficiently a company utilizes its assets in generating profits during an accounting period. The Return on Assets (ROA) level will be different for each company industry. The greater the value of ROA of a company will have a positive effect on real activity earnings management or $\beta_7 > 0$. Companies with positive ROA values will tend to use real activity earnings management where earnings management is relatively more costly compared to accrual earnings management. So that large companies do not hesitate to use real activity earnings management

This study uses a sample of public companies (except financial services industry) that have complete financial statements from the 2012 to 2015. Financial services companies are not included because they are bound by various special rules such as the feasibility test and compliance to banking management; therefore, such companies cannot be equated with other types of public companies. In addition, this study examines the annual reports of each company from 2012 to 2015 to identify the firm's political connections

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:49:43.

and family ownership through shareholder structure data and the board of directors. Based on the sample selection procedure, this study uses 1,451 observations for four years from 2012 to 2015.

Data Analysis

In this study using a sample of company research that completely issued financial statements from 2012-2015. In this study using all types of companies except in the field of financial services. This is because companies engaged in finance are surrounded by various special rules such as due diligence and compliance with banking management, so they cannot be compared to other types of public companies. In addition, this study requires the annual report of each company from 2012 to 2015 to identify the political relations of the company and family ownership of the company through data on the structure of shareholders and the board of directors. This study uses an unbalanced data model with a total of 4 years of observation from 2012 - 2015 totaling 1,451 companies.

Descriptive statistics are methods related to the collection, summarization, presentations of data in a more informative form. Descriptive statistics are used to analyze and present quantitative data in order to describe the characteristics of the data in a study. Statistics descriptive is presented in Table 1 and 2. The first variable of real earnings management has an average, that is -0.2091 and the standard deviation is 0.3924, this shows that the range of value of earnings management of real activities in companies in Indonesia becomes a fairly large sample. This is supported by the range of real estate earnings management values ranging from a minimum value of -2.9265 and a maximum of 2.8324. saThe fairly large range of values shows that the value of earnings management of real activities in Indonesian companies is quite varied.

For the first independent variable, accrual earnings management model (calculated using Kothari et al., 2005), has an average of -0.0699. This average value is higher than the value of real earnings management. The average value shows that accrual earnings management is higher in companies in Indonesia. The standard deviation of the accrual earnings management value is 0.3877 and shows a very high range. This is supported by having a minimum of - 2.1927 and a maximum of 8.33632.

The second independent variable is political connection, which has an average of 0.4700 and a standard deviation of 0.4993. This value shows that political connections are quite high in Indonesia. Table 2 shows that among the total 1451 observations, 710 (48.9%) had political connections. This is not much different from the research conducted by Braam et al. (2015), according to which in a study from 1997 to 2001, 138 companies in Indonesia (63.9%) among the study sample comprising 216 companies, have political connections. In addition, this study found that political relations in companies in

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:49:43.

Indonesia change every year, this is very possible because the company's ownership of data changes every year.

Table 1. Descriptive Statistics

Variable	Mean	Median	Maximum	Minimum	Std. Dev.	Obsv
REM_PROXY	- 0,2091	- 0,1494	2,8324	- 2,9265	0,3924	1451
AM	- 0,0699	- 0,0383	8,3632	- 2,1927	0,3877	1451
CONNECT	0,4700	0,0000	1,0000	0,0000	0,4993	1451
FAM	0,5973	0,6349	0,9904	0,0000	0,2899	1451
LEV	0,2383	0,2201	1,3858	0,0000	0,1886	1451
ROA	0,0502	0,0320	11,4670	-0,8294	0,3235	1451
MKTB	19,6720	1,5863	8847,77	0,0143	273,879	1451
SIZE (IDR MILLION)	7.503.998	2.055.155	245.435.000	1,0000	17.632.084	1451

REM_PROXY = Real Earnings Management, AM = Accrual Management model by Kothari et al. (2005), *CONNECT* = Political Connection, FAM = Family Firm, LEV = *leverage*, ROA = *Return on asset*, MKTB = *Market to book ratio*, *SIZE* = Family Size.

Table 2. Political Connection

Year	Political Connection Proportion	
	Yes	No
2012	176	187
2013	176	187
2014	180	183
2015	178	184
Total Observations	710	741

The third independent variable is family ownership. The size of the family ownership is measured by the percentage of ownership owned by the family in the company, from a total sample of 1451 having an average of 0.5973 and a median value of 0.6349. This high value indicates that most companies listed on the Indonesia Stock Exchange during 2012–2015 are family owned.

For Market to Book (MKTB) control variables. MKTB has an average value of 19.6720 with a standard deviation of 273,879. A positive average value indicates that the sample company has a greater market value than the book value, with a fairly high variation of 0.0143 minimum values and 8847.77 maximum values. The control variable or Size in this study has an average of Rp. 7.503,997,652,613 with a very large maximum value of Rp. 245,435,000,000,000 held by PT. Astra International Tbk. in 2014.

The average values of earnings management in both real activities and accrual earnings management are equally negative. This shows that earnings management in Indonesia aims to decrease with decreasing income. Thus, the average value of accrual earnings management is higher than that of real activity, which indicates that accrual

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:49:43.

earnings management is more common in Indonesia compared to real earnings management.

Regression result of model 1 in Table 3 is used to see the trade-off between accrual and real earnings management. This model shows that in average the company undertakes the practices of accrual and real earnings management in complementarily, as shown by positive coefficient of AM.

To test the hypotheses regarding the effect of family ownership and political connection on the trade-off between accrual and real earnings management, the regression result is presented in Table 4. The first hypothesis stated that family-owned companies tend to use accrual earnings management compared to management of real activity earnings. The test results shown in Table 4 show a positive relationship between accrual earnings management and family ownership. This is indicated by the AM_FAM coefficient, which has a positive coefficient of 0.009082 with a significance of 0.0248. This indicates that family-owned companies are more encouraging toward using accrual earnings management. This is consistent with previous studies conducted by Achleitner et al. (2014), who stated that family-owned companies in Germany chose to use accrual earnings management, and Chen et al. (2015) who suggested that family ownership in Japan tends to use accrual-based earnings management. These results thus indicate that family-owned companies in Indonesia tend to choose accrual earnings management. Therefore, H1 is not rejected.

Table 3. Regression Results – Earnings Management Strategies

$REM_PROX = \beta_0 + \beta_1 AM + \beta_2 Connect + \beta_3 Fam + \beta_4 Lev + \beta_5 ROA + \beta_6 MKTB + \beta_7 Size + e_{it}$

Variable	Predicted Sign	Coeff.	t-Stat	p-value
AM	+/-	0.064877	3.385264	0.00035***
CONNECT	+	0.001960	0.019714	0,49215
FAM	-	- 0.230550	- 1.648.754	0,04975**
LEV	-	0.244464	2.632.157	0,0043***
ROA	+	0.013095	0.545182	0,29285
MKTB	+	- 0.0000727	- 2.685745	0,00365***
SIZE	+	0.016541	0.958761	0,16895
CONSTANT		- 0.324633	- 1.442.867	0,07465
Obs.		1,451		
Prob (F-statistic)		0.000000		
Adj. R square		0.649343		

REM_PROX = Real Earnings Management, AM = Accrual Earnings Management model by Kothari et al. (2005), CONNECT = Political Connection, FAM = Family Firm, LEV = leverage, ROA = Return on asset, MKTB = Market to book ratio, SIZE = Family Size.

** Significant level 5%

*** Significant level 10%

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:49:43.

Table 4. Regression Results – The Impact of Family Ownership and Political Connection on Earnings Management Strategies

$$REM_PROX = \beta_0 + \beta_1 AM + \beta_2 Connect + \beta_3 Fam + \beta_4 AM\ x\ Connect + \beta_5 AM\ x\ Fam + \beta_6 Lev + \beta_7 ROA + \beta_8 MKTB + \beta_9 Size + e_{it}$$

Variable	Predicted Sign	Coeff.	t-Stat	p-value
AM	+/-	- 0.058910	- 3.001996	0.00135***
CONNECT	+	0.006392	0.070983	0.4717
FAM	-	- 0.158790	- 1.252846	0.10525
LEV	-	0.183711	2.181510	0.0147**
ROA	+	- 0.010613	- 0.469511	0.3194
MKTB	+	- 0.00734	- 2.993073	0.0014***
SIZE	+	0.003613	0.230906	0.4087
AM_CONNECT	+	0.253946	1.499112	0.0000***
AM_FAM	-	0.009082	1.965713	0.0248**
CONSTANT		- 0.205071	- 1.005670	0.1574
Obs.		1,451		
Prob (F-statistic)		0.000000		
Adj. R square		0.712408		

REM_PROX = Real Earnings Management, AM = Accrual Earnings Management model by Kothari et al. (2005), CONNECT = Political Connection, FAM = Family Firm, LEV = leverage, ROA = Return on asset, MKTB = Market to book ratio, SIZE = Family Size.

** Significant level 5%

*** Significant level 10%

According to Chen et al. (2015), one of the reasons why family-owned companies prefer accrual earnings management is that the founder of a family-owned company is more concerned with the reputation of the products and services offered, as well as the value of the company to ensure sustenance by being passed on to other family members. Families are expected to have lower agency costs because shareholders and the company management have more common goals. Meanwhile, according to Achleitner et al. (2014), family ownership tends to increase accrual earnings management because it does not have a direct impact on cash flow, while earnings management in real activities will influence the company's performance in the long term.

Achleitner et al. (2014) suggested that the phenomenon of family ownership tends to use accrual earnings management because of the majority ownership by family members. Family members have the incentive and seizure ability of noncontrolling shareholders where one of the takeovers is to manage income opportunistically with accrual earnings management. The reasons why family-owned companies tend to use accrual earnings management practices are as follows: (1) High supervision of the owner of the company against company policy; and (2) Low demand for earnings quality. These are due to weak investor protection laws. A concentrated ownership structure will benefit certain parties, especially family members, in making centralised policies so that important information

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:49:43.

of the company can be hidden from the public. Based on this, centralised corporate ownership tends to have low earnings quality through accrual earnings management (Fan and Wong, 2002).

The second hypothesis in this study states that companies that have political connections prefer earnings management strategies based on real earnings to accrual earnings management. Based on the results of regression results in Table 2, the AM_CONNECT regression coefficient is 0.253946 with a significance of 0.0000. This indicates a positive relationship between accrual earnings management and political connections to real activity earnings management. This is not in accordance with the second hypothesis, and hence, H2 is rejected. This result indicates that companies with political connections in Indonesia tend to choose to use accrual earnings management. This is in accordance with the research conducted by Nurhayati (2012), who stated that companies with political connections use accrual earnings management and generate financial statements with low discretionary accruals.

The choice of accrual earnings management practices in companies that have political connections in Indonesia is influenced by external factors such as investor protection. The negative influence on the practice of earnings management of real activities can be caused by the protection of investors in Indonesia, which is still relatively weak (Claessens et al., 2002). The weakness of investor protection in Indonesia is associated with lower detection risk of earnings management practices; consequently, companies will tend to choose accrual earnings management rather than real earning management, consistent with findings of Enomoto et al. (2015). In addition to investor protection, which is still relatively weak in Indonesia, public oversight of a company's political connections is also still relatively weak. This is in accordance with the facts issued by the ICW that 52.3% of DPR members are entrepreneurs and that during 2016 corruption cases in Indonesia reached 482 cases with 1,101 suspects at a loss of around 1.47 trillion. Ideally, according to Chaney et al. (2011), companies with political connections are under a higher public scrutiny, which allows companies to use the practice of earnings management of real activities that are difficult to detect.

CONCLUSION

This study aims to find empirical evidence of the impact of family ownership and political connections of a company on the selection of corporate earnings management. The types of earnings management studied in this research are accrual and real earnings management. The study was conducted using public companies listed on the Indonesia Stock Exchange during 2012–2015 with a total sample of 1,451 companies.

The results indicate that family-owned companies tend to use accrual earnings management. This indicates that family ownership in Indonesia tends to preserve a

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:49:43.

company's reputation because if companies use real earnings management causing normal company activity to not be optimal and cannot increase the value of the company in the long term. Companies with political connections also tend to use accrual earnings management. The selection of accrual earnings management practices in Indonesia is because investor protection is still relatively weak. This weakness is associated with lower detection risk than earnings management practices so that companies will tend to choose accrual earnings management rather than real earnings management.

There are several limitations of this study. First, identification of family ownership categories is solely based on the percentage of share ownership listed in the annual financial report, and did not track until ultimate ownership. Further research is expected to use other source of data to identify ultimate owners to better identify family. Second, the identification of political relations was based on the board of commissioners and the board of directors who have served or are retired from the Indonesian Armed Forces (TNI), members of political parties, holding important positions in the ministry, and members of the house of representative. The criteria of political connections could be expanded by adding connections of shareholder kinship, board of directors and board of commissioners with members of political parties and with the government. Third, this study uses only one discretionary accrual-based earnings management model, which is Kothari et al. (2005). There is possibility that this model is not totally accurate in measuring discretionary accruals. Future research could use other models of accrual earnings management and then compare the results to have more robust results.

This study has several important implications. The empirical evidence shows that family ownership and political relations in Indonesia influence the selection of corporate earnings management so that this study have important implication to investors to consider family ownership and political relations in public companies to assess company's earnings management which will provide additional information for their investment decision making. The findings in this research can also provide additional information to capital market regulator that there are different earnings management practices between companies with different level of family ownership and political relations, which will aid the regulator in doing its monitoring function.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

REFERENCES

Achleitner, A. K., Günther, N., Kaserer, C. & Siciliano, G. (2014). Real Earning Management and Accrual-based Earning Management in Family Firms. *Journal European Accounting Review*, Vol. *23*(3), pp. 431-461.

Al-dhamari, R. & Ku Ismail, K. N. I. (2015). Cash holdings, Political connections, and Earnings Quality: Some evidence from Malaysia. *International Journal of Managerial Finance*, Vol. *11*, No. 2, pp. 215-231.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:49:43.

Ali, A., Chen, T. Y. & Radhakrishman, S. (2007). Corporate Disclosure by Family Firm. *Journal of Accounting and Economics*, Vol. *44*, pp. 238 - 286.

Anderson, R. C. & Reeb, D. M. (2003). Founding-family ownership and firm performance: evidence from the S&P 500. *The Journal of Finance*, Vol. *58*, No. 3, pp. 1301-1328.

Arifin, Z. (2003). *Masalah Agensi dan Mekanisme Kontrol pada Perusahaan dengan Struktur Kepemilikan Terkonsentrasi yang Dikontrol Keluarga: Bukti dari Perusahaan Publik Indonesia* [*Agency Issues and Control Mechanisms in Companies with Concentrated Ownership Structures Controlled by Families: Evidence from Indonesian Public Companies*]. Unpublished Dissertation, Universitas Indonesia.

Barth, E., Gulbrandsen, T. & Schønea, P. (2005). Family Ownership and Productivity: The Role of Owner-Management. *Journal of Corporate Finance*, Vol. *11*, No. 1-2, pp. 107-127.

Bozzolan, S., Fabrizi, M., Mallin, C. A. & Michelon, G. (2015). Corporate Social Responsibility and Earnings Quality: International Evidence. *The International Journal of Accounting*, Vol. *50*, No. 4, pp. 361-396.

Braam, G., Nandy, M., Weitzel, U. & Lodh, S. (2015). Accrual-based and Real Earnings Management and Political Connections. *The International Journal of Accounting*, Vol. *50*, pp. 111-141.

Chaney, P., Faccio, M. & Parsley, D. (2011). The Quality of Accounting Information in Political Connection. *Journal Accounting Economy*, Vol. *51*, pp. 58-76.

Chen, T. Y., Gu, Z., Kubota, K. & Takehara, H. (2015). Accrual-Based and Real Activities Based Earnings Management Behaviour of Family Firms in Japan. *The Japanese Accounting Review*, Vol. *5*, pp. 21-47.

Claessens, S., Djankov, S. & Lang, L. H. P. (2000). The Separation of Ownership and Control in East Asia Corporations. *Journal of Financial Economics*, Vol. *58*, No. 1-2, pp. 81-112.

Claessens, S., Djankov, S., Fan, J. P. & Lang, L. H. (2002). Disentangling the Incentive and Entrenchment Effects of Large Shareholdings. *The Journal of Finance*, Vol. *57*, No. 6, pp. 2741-2771.

DeAngelo, H. & DeAngelo, L. (2000). Controlling Stockholders and The Disciplinary Role of Corporate Payout Policy: A study of the Times Mirror Company. *Journal of Financial Economics*, Vol. *56*, No. 2, pp. 153-207.

Enomoto, M., Kimura, F. & Yamaguchi, T. (2015). Accrual-based and Real Earnings Management: An international Comparison for Investor Protection. *Journal of Contemporary Accounting & Economics*, Vol. *11*, No. 3, pp. 183-198.

Faccio, M., Lang, L. H. & Young, L. (2001). Dividends and Expropriation. *American Economic Review*, Vol. *91*, No. 1, pp. 54-78.

Faccio, M., Masulis, R. W. & McConnell, J. J. (2006). Political Connections and Corporate Bailouts. *The Journal of Finance*, Vol. *61*, No. 6, pp. 2579-2635.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:49:43.

Fisman, R. (2001). Estimating the Value of Political Connections. *American Economic Review*, Vol. *91*, No. 4, pp. 1095-1102.

Ghosh, A. A. & Tang, C. Y. (2015). Assessing Financial Reporting Quality of Family Firms: The Auditors' Perspective. *Journal of Accounting and Economics*, Vol. *60*, No. 1, pp. 95-116.

Habib, A., Muhammad, A. H. & Jiang, H. (2017). Political connections, related party transactions, and auditor 4 choice: Evidence from Indonesia. *Journal of Contemporary Accounting & Economics*, Vol. *13*, No. 1, pp. 1-19.

Hastuti, T. D. (2005). Hubungan antara good corporate governance dan struktur kepemilikan dengan kinerja keuangan (studi kasus pada perusahaan yang listing di Bursa Efek Jakarta) [The Association Between Good Corporate Governance and Ownership Structure with Financial Performance: Case Study of Listed Companies in Jakarta Stock Exchange). *Proceedings of National Symposium on Accounting, 8*, pp. 238-247.

ICW. (2016). *Annual Report 2016 Indonesia Corruption Watch*

Jensen, M. C. & Meckling, W. H. (1976). Theory of the firm: Managerial Behavior, Agency Costs and Ownership Structure. *Journal of Financial Economics*, Vol. *3*, No. 4, pp. 305-360.

Johnson, S. & Mitton, T. (2003). Cronyism and Capital Controls: Evidence from Malaysia. *Journal of Financial Economics*, Vol. *67*, No. 2, pp. 351-382.

Kim, C. & Zhang, L. (2016). Corporate Political Connections and Tax Aggressiveness. *Contemporary Accounting Research*, Vol. *33*, No. 1, pp. 78-114.

Kothari, S. P., Leone, A. J. & Wasley, C. E. (2005). Performance Matched Discretionary Accrual Measures. *Journal of Accounting and Economic*, Vol. *29*, pp. 163 - 197.

Kompas. (2015). *Politisi dan relawan Jokowi menjadi komisaris* [*Jokowi Politicians and Volunteers becomes commissioner*].

Kothari, S. P., Leone, A. J. & Wasley, C. E. (2005). Performance Matched Discretionary AccrualMmeasures. *Journal of Accounting and Economics*, Vol. *39*, No. 1, pp. 163-197.

Leuz, C. & Oberholzer-Gee, F. (2006). Political Connection, Global Financing, and Corporate Transparency: Evidence from Indonesia. *Journal of Financial Economics*, Vol. *81*, No. 2, pp. 411-439.

Li, H., Meng, L., Wang, Q. & Zhou, L. (2007). Political Connections, Financing and Firm performance: Evidence from Chinese Private Firms. *Journal of Development Economics*, Vol. *87*, No. 2, pp. 283 - 299.

Mobarak, A. M. & Purbasari, D. P. (2006). *Corrupt Protection for sale to firms: Evidence in Indonesia.* Unpublished working paper, University of Colorado at Boulder.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:49:43.

Muttakin, M. B., Monem, R. M., Khan, A. & Subramaniam, N. (2015). Family Firms, Firm Performance and Political Connections: Evidence from Bangladesh. *Journal of Contemporary Accounting & Economics*, Vol. *11*, No. 3, pp. 215-230.

Narayanaswamy, R. (2013). Political Connections and Earnings Quality: Evidence from India. *IIM Bangalore Research Paper*, (433).

Nurhayati, F. (2012). *Pengaruh hubungan politik dan kepemilikan keluarga terhadap kualitas pelaporan keuangan pada perusahaan manufaktur* [*The Effect of Political Connections and Family Ownership on Financial Reporting Quality of Manufacturing Firms*]. Unpublished Undergraduate Thesis. Universitas Indonesia.

Pranoto, B. A. & dan Widagdo, A. K. (2016). *Pengaruh koneksi politik dan corporate governance terhadap tax aggressiveness* [*The Effect of Political Connections and Corporate Governance on Tax Aggressiveness*]. National Seminar and The 3rd Call for Syariah Paper (Sancall 2016 University of Muhammadiyah Surakarta), 472-486.

PricewaterhouseCoopers. (2014). *Survey bisnis keluarga Indonesia* [*Survey of family business in Indonesia*]. Retrieved from https://www.pwc.com/id/en/media-centre/press-release/2014/english/family-business-survey-indonesia.html.

Ramanna, K. & Roychowdhury, S. (2010). Elections and Discretionary Accruals: Evidence from 2004. *Journal of Accounting Research*, Vol. *48*, No. 2, pp. 445-475.

Razzaque, R. M. R., Ali, M. J. & Mather, P. R. (2016). Real Earnings Management in Family Firms: Evidence from an Emerging Economy. *Pacific-Basin Finance Journal*, Vol. *40*, pp. 237-250.

Scott, W. R. (2015). *Financial accounting theory, 7th Edition*. Canada. Prentice Hall.

Thomas, J. K. & Zhang, H. (2002). Inventory Changes and Future returns. *Review of Accounting Studies*, Vol. *7*, No. 2-3, pp. 163-187.

Wiryadi, A. & Sebrina, N. (2013). Pengaruh asimetri informasi, kualitas audit, dan struktur kepemilikan terhadap manajemen laba [The Effect of Information Asymmetry, Audit Quality, and Ownership Structure on Earnings Management]. *Wahana Riset Akuntansi*, Vol. *1*, No. 2, pp. 155-180. [*Forum for Accounting Research*]

Wong, W. Y. & Hooy, C. W. (2018). Do Types of Political Connection Affect Firm Performance Differently? *Pacific-Basin Finance Journal*, Vol. *51*, pp. 297-317.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:49:43.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 10

REWARDS, ELABORATION LIKELIHOOD MODEL, REWARD-BASED CROWDFUNDING AND EMERGING MARKET COUNTRIES

Ayasha Cecilia Nadira and Liyu Adhi Kasari Sulung*
Department of Management, Universitas Indonesia, Depok, Indonesia

ABSTRACT

We explore the impact of central route and peripheral route, which is embedded in the Elaboration Likelihood Model, on the success of the crowdfunding project in emerging markets. We employed 300 data of secondary and cross-section through crowdfunding platforms, including Zoomal (Middle East), Catarse (Brazil), and Fuel A Dream (India). Data were obtained from projects developed by Zoomal and Fuel A Dream from 2013 to 2018 and from the Catarse platform from 2011 to 2018. Using logit regression model, our study shows important results by performing significant outcome in most of the independent elements from central and peripheral routes.

Keywords: central route, peripheral route, elaboration likelihood model, reward-based crowdfunding, emerging markets

INTRODUCTION

Supported by the growing online funding system, crowdfunding has experienced rapid growth in recent years (Wang, Li, Liang, Ye, & Ge, 2018). Global crowdfunding

* Corresponding Author's E-mail: liyu.as@gmail.com or liyu.adhi@ui.ac.id.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:49:54.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 10

REWARDS, ELABORATION LIKELIHOOD MODEL, REWARD-BASED CROWDFUNDING AND EMERGING MARKET COUNTRIES

Ayasha Cecilia Nadira and Liyu Adhi Kasari Sulung*
Department of Management, Universitas Indonesia, Depok, Indonesia

ABSTRACT

We explore the impact of central route and peripheral route, which is embedded in the Elaboration Likelihood Model, on the success of the crowdfunding project in emerging markets. We employed 300 data of secondary and cross-section through crowdfunding platforms, including Zoomal (Middle East), Catarse (Brazil), and Fuel A Dream (India). Data were obtained from projects developed by Zoomal and Fuel A Dream from 2013 to 2018 and from the Catarse platform from 2011 to 2018. Using logit regression model, our study shows important results by performing significant outcome in most of the independent elements from central and peripheral routes.

Keywords: central route, peripheral route, elaboration likelihood model, reward-based crowdfunding, emerging markets

INTRODUCTION

Supported by the growing online funding system, crowdfunding has experienced rapid growth in recent years (Wang, Li, Liang, Ye, & Ge, 2018). Global crowdfunding

* Corresponding Author's E-mail: liyu.as@gmail.com or liyu.adhi@ui.ac.id.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:03.

growth is predicted to be around 26% annually from 2016 to 2020 (Markets, 2016). Crowdfunding has evolved through technology because it relays on the use of the internet as its mode of communication, and which has a major impact on crowdfunding development (Rossi, 2014). The internet is a powerful medium to gather attention because it supports activities that most people do on a daily basis and it is easy to use. Therefore, crowdfunding is an interesting research topic because it is associated with digital information and the development of venture capital.

There are many studies discussing the success of the crowdfunding project. One way to learn what factors encourage potential investors to invest on the crowdfunding platform is to use the Elaboration Likelihood Model, developed by Petty and Cacioppo in 1986. Elaboration likelihood model (ELM) explains the factors that drive investors to investing through two major routes: 1) a central route and 2) peripheral routes. The central route can be defined as a process by which individuals evaluate information using critical thinking (Allison, Davis, Webb, & Short, 2017). Furthermore, this route can be done by paying full attention to issue-relevant information, linking it with prior information and generating new implications for relevant information (Petty, Strathman, Cacioppo, & Priester, 2005). Potential investors can analyze the benefits of the project and influence behavioral changes that can influence investors' decision making process. These behavioral changes can be easily observed. They are robust, persistent and predictable changes based on the behavioral assessment of the investors' candidates (Petty, Haugtvedt, & Smith, 1995). In the context of crowdfunding, behavioral changes that occur as a result of adopting the central route are expected to change investors' appraisals more rationally and cognitively, based on information from projects to be funded by investors. However, the ELM techniques that incorporate the project's reward factor on the central route are relatively small on reward-based crowdfunding platforms, especially in developing countries. The reward calculation, as the main advantage for the reward-based crowdfunding platform, can be calculated or assessed by requiring in-depth analysis of potential investors. This is because the varying levels of rewards and reward benefits themselves can be judged differently from one investor to another. As the rewards offered become diversified, investors are given more alternatives to choose. This may lead investors to choose projects with more reward alternatives.

Meanwhile, peripheral routes can be defined as a less cognitive process through the arrangement of messages to influence individuals' decisions (Chaiken & Trope, 1999). Peripheral routes do not affect potential investors through behavioral changes that take into consideration relevant information and in-depth thoughts, but these routes depend on simple gestures of attraction and the length of the message source to be conveyed (Petty et al., 2005).

Total comments variable can influence investors' decisions regarding their investments in specific projects. Comments from other investors or other potential investors can provide additional information to potential investors and encourage investor

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:03.

decisions. This may reduce asymmetric information regarding the crowdfunding project. In addition, as more and more projects are exposed in social media, more potential investors will be interested in getting information about crowdfunding projects. In order to reach a greater number of potential investors, information about crowdfunding projects is disseminated through social media platforms such as Facebook, Twitter, and Instagram . In some studies, this was found to be a significant factor in influencing investors' decisions (Petty et al., 2005; Cyr, Head, Lim, & Stibe, 2018). The author combines several variables to deeply analyze the information that could affect the success of the crowdfunding project. Therefore, in this study, the authors want to understand the effect of the central and peripheral routes on the success of the crowdfunding project, by persuading potential investors.

LITERATURE REVIEW

Crowdfunding is an individual, nonprofit group or company effort to fund assets by attracting relatively small contributions from potential investors, using the internet and without any financial intermediaries (Mollick, 2014). In addition, crowdfunding is also inspired by concepts such as micro-finance and crowdsourcing, but it has its own uniqueness as one of the fundraising categories facilitated by the growing number of highly linked sites (Mollick, 2014). The form of crowdfunding is divided into debt-based crowdfunding, equity-based crowdfunding, and reward-based crowdfunding (Ahlers, Cumming, Günther, & Schweizer, 2015). Table 1 describes the comparison between types of Crowdfunding.

Table 1. Comparison between types of Crowdfunding

	Reward-based CF	**Donation-based CF**	**Debt-based CF**	**Equity-based CF**
Returns	Goods/Service	None	Interest rate	Share
Key Players	Entrepreneur& Consumer	Nonprofit Organization	Debtors & Creditors	Start-up & Investor
Targeted User	Project of Creative Ideas	Social, Volunteer	Shortage Party	Startups
Stage of CF Usage	Pre start-up	Pre start-up	Start-up	Growth
Example	Zoomal, Catarse, Fuel A Dream	Weeboon, Kitabisa.com, GIVE.asia	GoFundMe, Zero Bound, Funding Circle	Crowdfunder, Fundable, PeerRealty

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:03.

Hypothesis Development

Rewards of Project

Reward of project is one of the main aspects that motivate potential investors to participate in crowdfunding platforms (Kuppuswamy & Bayus, 2018). The rewards for contributing to the project have a significant impact on the success of the project. Successful project campaigns offer an increasing range of rewards when compared to failed project campaigns (Hobbs et al., 2016). This is in line with the motivational theory developed by Frederick Herzberg in 1950. According to Herzberg's theory two factors that can drive individuals' satisfaction, motivation and hygiene factors (Stephen P. Robins, 2012). In this case, the rewards can act as an incentive to the hygiene factor. The elimination of this factor can have an impact on investor's dissatisfaction and lack of motivation to invest in the project. However, if this factor is included, it can trigger changes in investor's behavior that are increasingly motivating and can influence the investors' decision to invest. This change in behavior can increase the probability of success with crowdfunding projects. In order to understand the effect of rewards on project' success, especially in developing countries, the authors propose the following hypothesis.

H1A: *The reward of project has a significant and positive impact on the success of the crowdfunding project.*

Number of Word Count

The word count variable allows the project owner to provide more detailed information about the project (Hobbs et al., 2016). A higher word count and a good set of words indicates that the project owner prepared the project with great care and allocated considerable time to the project (Chen, Yao, & Kotha, 2009). The word description length is positive and significant, and has a positive beta coefficient (Bi et al., 2017). The word count affects the success or failure of the project campaign as the longer number of word description describes the more detail of project information is given to the potential investor (Hobbs et al., 2016). Nevertheless, recent findings shows that the length of the description has a negative effect on the success of the project (Han et al., 2018). A very long description makes more difficult for potential investors to understand the project. The influence of technological developments increased the need for rapid mobility. This results in a project description more simple, solid and easy to understand, which it is favored by potential investors and encourages them to invest in the project. Project's word count impact negatively the success of project funding. Therefore, a shorter, solid and clear description of the project will be more attractive to potential investors. Since there is empirical research that supports this idea, the authors propose the following hypothesis.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:03.

H1B: *The word count of the project description has a significant negative impact on the successful funding of crowdfunding projects.*

Funding Commitment

In transaction-based contexts, including consumer and crowdfunding purchases, individuals' choices are influenced by price considerations (Inman, McAlister, & Hoyer, 1990; D. Kim & Benbasat, 2009). Prices in the past or present have an important role in determining the points of reference that influence cognitive and emotional decision making (Mukhopadhyay & Johar, 2007; Park & Lennon, 2004). Products and rewards contributing to the project make price an important factor influencing individuals' decisions (Groth 1995, D. Kim & Benbasat, 2009). The motivation of potential investors through the central route will be stronger along with the increasing minimum price that must be paid to reach the lowest price category (D. Kim & Benbasat, 2009). Projects that have a higher minimum price to acquire the reward will attract fewer investors than projects that require a low minimum price (Buttice, Milano, Rossi-lamastra, & Milano, 2015). According to Allison et al., (2017), the funding commitment is divided into two categories: a higher minimum price to acquire reward and a lower minimum price to acquire the reward. Allison et al., (2017) argue that both variables are significant in moderating the two ELM routes in explaining the success of the crowdfunding project. Therefore, the authors propose the following hypothesis.

H1D: *Low minimum prices, in terms of individual reference point points, have a significant positive impact on the success of crowdfunding projects.*

H1E: *High minimum prices, in terms of individual point of referent, have a significant negative impact on the success of crowdfunding projects.*

Number of Posts Shared

Word of mouth through the internet or e-WOM has a significant effect on the success of the project, as it distributes project campaigns through social media to make the project known to potential investors (Thies, Wessel, & Benlian, 2014). Through social media such as Twitter and Facebook, information can be easily accessed and accepted by potential investors, making this social media platform an ideal tool for creating e-WOM (Shu Chuan & Yoojung, 2011). E-WOM can complement the project descriptions that are critical to the success of a project campaign, if potential investors pay considerable attention to the recommendations from their friends in social media rather than information from common sources (Belleflamme, Omrani, & Peitz, 2015). Measuring the combined effect of information popularity and the strength of social media on the success of crowdfunding projects shows that Facebook impacts the project positively (Thies et al., 2014). Therefore, the authors propose the following hypothesis.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:03.

H2A: *The number of Facebook shares has a significant positive impact on the success of crowdfunding projects.*

Total Comments

Comment columns are generally available on any crowdfunding platform. The comment fields can facilitate the communication between the project owner and the prospective investor and help prospective investors to get information about potential projects to be funded. Project comments can also provide information to potential investors through comments from other investors who have funded the project (Dennis, Fuller, & Valacich, 2008). Negative comments will discourage potential investors to invest in a project; while positive comments will make potential investors feel that the project poses lower risk, and will motivate them to invest (Wang et al., 2018).

Research shows that total comments have a positive effect on the performance of crowdfunding projects (Z. Li & Jarvenpaa, 2015; Wang et al., 2018; Xiao, Tan, Dong, &Qi, 2014). Comments have proven to reduce asymmetric information about crowdfunding projects (Wang, 2015). Comments significantly affect the success of a project since that the detailed information obtained by potential investors through comment columns can persuade and influence their investment decisions (T. Kim et al., 2017). Therefore, the authors propose the following hypothesis.

H2B: *Total comment about the project has a significant positive impact on the success of crowdfunding projects.*

METHODS

The author retrieves data through crowdfunding platforms, including Zoomal (Middle East), Catarse (Brazil), and Fuel A Dream (India). The platform is selected based on the number of projects that have completed more than 500 projects and is one of the largest platforms in its home country. From each platform, the author extracts the information necessary to perform the measurement of the variables in this study. Data are extracted from projects developed by Zoomal and Fuel A Dream from 2013 to 2018 and by the Catarse platform from 2011 to 2018. The figure of Zoomal, Fuel A dream, and Catarse platforms can be obtained from Figure 2 to Figure 4 at the Appendix). Until this research was conducted in 2018, all three platforms have more than 1500 registered projects and more than 500 projects completed.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:03.

Sampling Method

Each platform has at least 1500 projects. Therefore, sampling techniques are needed to determine the research sample. Sampling research using non-probability sampling method, where the chances of a project to be selected as research sample on the three platforms are not the same. To determine if the project would be included in the sample, the authors used purposive sampling technique. The selection of the sample is based on certain considerations regarding judgment sampling, such as the selection of sample members is adjusted to several criteria (Cooper & Schindler, 2014).

Determination of the amount of sample size is determined based on three main criteria, namely the level of precision, level of confidence interval and degree of variability (GD., 2003). Based on these three criteria, with a population of about 8,000 projects and a 10% precision level at a 95% confidence interval, the sample size amounts to 99 samples per platform. In this study, the authors used a sample of 100 projects per platform.

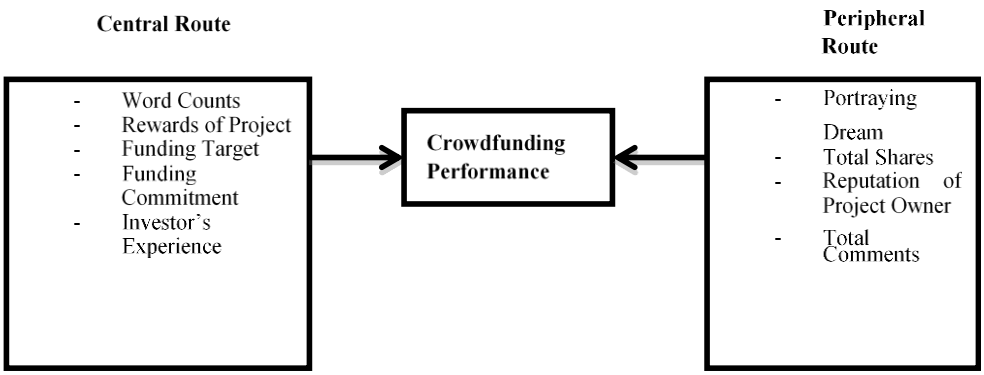


Figure 1. Research Model.

The research model is taken from a combination of several journals, but refers to the research model of Allison et al., (2017). The modification of the variables is done to observe the effect of several variables on the performance of crowdfunding, by measuring the achievement of the funding target. Using the variables that become the proxy in this study, the authors perform logit regression aiming to determine the effect of independent variables on the dependent variable. By using the cross-sectional data, a research model can be formulated in the mathematical equation below.

$$Log(P_{success} / (1–P_{success})) = \beta_0 - \beta_1 WC_i + \beta_2 ROP_i - \beta_3 FG_i + \beta_4 DFC_i + \beta_5 DCXP_i + \beta_6 SHR_i + \beta_7 DRPY_i + \beta_8 CQ_i + \beta_9 X_i + \varepsilon_i$$

where; WC_i = Description Length, ROP_i = Level of Rewards Given Prior to Investor's

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:03.

Contribution, FG_i= Funding Target, DFC_i= Funding Commitment, $DCXP_i$ = Investor's Experience, $DDRE_i$ = Portraying Dream, SHR_i = Total Shares, $DRPY_i$ = Reputation of Project Owner, CQ_i = Total Comments, ε_i = *Error term*

Central Routes

The central route illustrates cognitive considerations through in-depth thinking in order to make decisions. There are six proxies in this study that serve as the central route in influencing the success of crowdfunding projects. The first proxy is the word count of a project description. This variable is measured using Microsoft Word software, where the author copies the project description and records the number of words in the description. The second proxy is the amount of reward-based on investors' contribution. This proxy is measured by calculating the number of reward levels given by the project owner to investors adjusted to the funds provided by the investor. This variable is measured by breaking down the reward extrinsic value category from each project. The value of the minimal contribution provided by the investor is recorded for each project. The median value of the minimum contribution is calculated, and the minimum contribution to receive a reward that is greater than the median value of the data is categorized as a high funding commitment. If the minimum contribution value of a project is smaller than its median value, it is categorized as a low funding commitment. The last proxy in the central route is the investor experience. This variable is measured by calculating projects that have been funded by investors. If the investor has funded more than one project, then he is given the dummy value 1; if the investor has funded only one project, he is given the value 0. In each project, the last 10 investors, who funded the project, were asked whether that project was the first project they have funded.

Peripheral Routes

The peripheral route describes a less cognitive aspect that affects the success of crowdfunding projects. There are three proxies in the peripheral route of this study that affect the success of the crowdfunding project. The first proxy is the number of posts shared on Facebook. This variable is measured by counting the number of shares of the crowdfunding project on the project owner's Facebook page or by searching the entire post on Facebook for the project, including the Facebook pages of each platform. The second proxy is the number of comments posted on each platform, as well as, on the project's owner Facebook regarding the crowdfunding project. The third proxy is the reputation of the project owner. This variable is measured by separating the 10 most recent comments on the project into three categories: positive comments, negative

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:03.

comments, and other comments. For a positive reputation, if the project has more positive comments than a negative comment, it is given the dummy value 1. Otherwise, it will be given a dummy value 0. As for the negative reputation, if the project has more negative comments than positive or other comments, then it will be given a dummy value 1. Otherwise, it will be given a dummy value 0.

Control Variables

Dream Dummy

The control variable used in this research is the only variable that is portraying dream. This variable is measured by analyzing the project description written by the project owner on the crowdfunding platform. If the project description states that the project is the project owner's dream or long-term goal, then it will be given a dummy value 1; otherwise, it will be given a dummy value 0.

Table 2. Research variables

Construction of Variables	Description
Word Counts	Number of words in the project description on the crowdfunding platform.
Rewards of Project	The number of rewards levels given, based on the amount of contribution to the project.
Funding Target	The number of project fund targets collected through the crowdfunding platform.
Funding Commitment	The lowest and highest value of the investor's contribution to receive a certain level of reward.
Investor's Experience	Experience funding other projects on the crowdfunding platform.
Portraying Dream	The representation that the project is the project owner's long-term dream or goal.
Total Shares	Number of posts about projects shared via Facebook.
Reputation of Project Owner	The number of positive, negative and neutral comments available in the comment field on the crowdfunding platform.
Total Comments	The total number of comments in the comment field on the crowdfunding platform.

RESULTS

Descriptive Statistics

The result of the descriptive statistics can be seen in Table 3. From the 300 data taken as research samples, the average crowdfunding project reached 78% from the total sample. The success of the project is influenced by other dummy variables such as

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:03.

investor experience, funding commitment, project owner reputation and control variables such as portraying dreams. Meanwhile, for funding commitment, the average project has a high funding commitment of 49% and a low funding commitment of 49% of the total sample. Although high and low funding commitments on project samples have almost the same proportions, these two variables are correlated; therefore, they cannot be accounted in the same model. In addition, the positive reputation of the project has a median of 1, indicating that more than half of the projects in the sample have good reputation. The negative project owner's reputation has an average of 0.0300, which indicates that only 3% of the sample has a negative reputation

Table 3. Descriptive statistics

	Min.	**Maks.**	**SD**	**Mean**
Success or Not	0,0000	1,0000	0,4149	0,7800
Word Count	160,0000	150000	8623,11	1397,353
Rewards of Project	1,0000	66,0000	7,3641	9,083
Investor's Experience	0,0000	1,0000	0,4172	0,2233
Funding Goal	300	176683,1	16283,32	11724,74
High Funding Commitment	0,0000	1,0000	0,5007	0,4867
Low Funding Commitment	0,0000	1,0000	0,5008	0,4933
Number of Post Shared	0,0000	149362	9090,759	1477,393
Positive Reputation	0,0000	1,0000	0,4885	0,6100
Negative Reputation	0,0000	1,0000	0,1708	0,0300
Portraying Dream	0,0000	1,0000	0,4481	0,7233
Total Comments	0,0000	249,0000	29,7155	14,5367

Regression Results

Table 4 shows the regression result of this research. In this research model, the central route is tested on model 1 and model 3, where model 1 only tests the effect of the central route on the success of the crowdfunding project and model 3 examines the effect of central routes and peripheral routes collectively. The central route consists of five variables that explain the success of the crowdfunding project.

The word count variable has a negative and significant coefficient, which indicates the length of the word description is inversely proportional to the success of the crowdfunding project. The longer is the length of a project description, the lower is the probability of the project being successful or achieving its funding goal. This is in line with the research conducted by Han et al., (2017), but it is, however, contrary to the research of bi et al., (2017). The results show that the length of the project description negatively affects the project's success described by the binary value, which indicates

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:03.

whether the project was successful or failed to meet its targets. This negative influence may be due to the development of technology that makes simple things more popular in modern era. Longer project description are more difficult for the investor to understand; as a result, potential investors will have less interest to invest in the project. In this study, this variable is significant and negative in model 1 and model 3. In model 1, the marginal effect shows that every single word increment in the project description will decrease the probability of successful crowdfunding project by 15.39%. While in model 3, the marginal effect shows that every single word increment in the project description will decrease the probability of successful crowdfunding project by 8.31%. The effect of this variable is quite strong. As shown in model 1 and model 3, the level of significance is 1%. It means that this variable has strong effect in influencing the investor's decision. The coefficient is also quite high. As shown in model 1, this variable is capable of decreasing the probability of success up to 15.39%, with just the increment of 1 word in the project description.

Table 4. Regression results

Category of Variables	Independent Variables	Model 1	Model 2	Model 3
	Word Counts	−0.1539 (0.0000)***		−0.0831 (0.010)***
Central Routes	Project Reward	0.0195 (0.0010)***		0.0144 (0.0040)***
	Funders Experience	0.0887 (0.0590)*		0.0361 (0.2320)
	Funding Goal	−0.0310 (0.1430)		−0.0405 (0.0080)***
	High Funding Commitment	0.1157 (0.011)**		0.0429 (0.1470)
	Total Comment		0.0072 (0.0000)***	0.0053 (0.001)***
	Positive Reputation		0.1933 (0.005)***	0.1147 (0.0360)**
Peripheral Routes	Negative Reputation		0.0116 (0.8890)	−0.0036 (0.9640)
	Number of Facebook Shares		0.0000 (0.5510)	0.0000 (0.6400)
Control Variables	Portraying Dream			0.1597 (0.0080)***
	Pseudo R^2	0.1034	0.2109	0.3426
	Prob > $\chi 2$	0.0000	0.0000	0.0000
	Number of Observations	300	300	300

Note: The table above shows the logistic regression results of model 1, model 2 and model 3 using the dummy of project success as the proxy of the dependent variable. *** = $p < 0.01$; ** = $p < 0.05$; * = $p < 0.1$.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:03.

The reward factor in reward-based crowdfunding is significant and positive in model 1 and model 3. This finding is in line with Kunz et al., (2016) and Hobbs et al., (2015), where the number of rewards offered has significant and positive influence to the success of crowdfunding projects. The project reward in this study has a significant value even at 1% level of significance, which indicates that this variable has a strong influence on the success of the crowdfunding project. This may be due to the main point that appeals to the potential investors in crowdfunding reward-based, the reward offered by the projects. The probability of success of crowdfunding projects will increase depending on the levels of the rewards offered by the projects in exchange to investors' contribution. These findings are also supported by Herzberg's theory of motivation by classifying rewards as incentives that are included among the hygiene factors. According to this theory, the presence of hygienic factors explains the success of the crowdfunding project since it provide a high-level of satisfaction to investors and potential investors. This increases the probability of crowdfunding projects to be successful. In model 1, the marginal effect indicates that any increase of 1 reward range will increase the probability of success by 1.95%. In model 3, the marginal effect results indicate that each increase of 1 reward range will increase the probability of a successful crowdfunding project by 1.44%. This variable also has strong effect on the success of crowdfunding projects. It shows that this variable is significant even at the 1% level of significance.

A high funding commitment had a significant impact in model 1, where only the central route is regressed. In Allison et al., (2017) research, this variable is a moderating variable that reinforces the influence of other variables in explaining the dependent variable. In those journals, high funding commitments fail to moderate all variables on the central route, only certain variables can be moderated by high funding commitments. This can make the funding commitment to be insignificant in model 3, where the central route and peripheral routes are regressed together.

Peripheral Routes

The total comments is significant in model 2 and model 3, where model 2 uses only peripheral routes to describe the success of crowdfunding projects. In both models, the total comment is significant at the 1% level of significance and positively affects the project's success. This indicates that the greater number of comments about the project available, the higher the probability of the project to reach its funding goal. This is in line with the findings of T. Kim et al., (2017) and Wang et al., (2018), who argue that the total comments has a significant and positive impact on the success of the crowdfunding project. This may be due to the word of mouth (WOM) generated from the comment field that affects the investor's decision and the conversations contained in the comment field, which can also reduce the non-symmetrical information about the project to be financed.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:03.

The crowdfunding project, which is still largely at the early stage of ideas and concepts, has a high degree of uncertainty, causing investors to bear a high risk. This is further strengthened by the non-symmetrical information that investors have about the future of the crowdfunding project. The comments on the project can help investors to learn more about the project and the experiences of project's current investors, which can convince potential investors to invest in the project. The marginal result of the effect in model 2 indicates that the incremental of one comment will increase the probability of success by 0.72%; while in model 3, it shows that every increment of one comment will increase the probability of success by 0.53%. This variable also has strong effect in the success of crowdfunding, as it is appears to be a significant factor at 1% level of significance in model 1 and model 3.

The number of posts shared has no significant impact on both model 2 and model 3. The results do not support the results of Hobbs et al., (2018) that indicate that the number of shares is one of significant predictors for successful crowdfunding project. This may happens because the publications on Facebook cannot raise awareness about the project in developing countries. It is motivated by several things, as people start switching social media platform from Facebook to other platform such as Twitter, as described in Thies et al., (2014).

Control Variables

Portraying dream is a control variable in this study. Portraying dream plays a significant role on the success of a project that incorporates portraying dream content and a project that does not include the content of the dream image. In model 3, the portraying dream has a significant impact. The marginal value of the effect of 15.97% indicates that each increase of one unit of portraying dream content will increase the probability of crowdfunding success by 15.97%. From the results of the regression, it can be said that crowdfunding projects that have portraying dream content in their project description have significant differences in the success of the crowdfunding project when compared to projects that did not show the portraying dream content on the project description.

CONCLUSION

The length of the word description and the funding goal have a significant and negative impact on the successful funding of the crowdfunding project on all three platforms in the developing countries. These two variables are significant in the regression performed jointly between platforms and regressions along with peripheral routes. This occurs because a greater choice of reward offered by investors will make the

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:03.

alternative form of funding greater. This factor is attractive to investors, especially on reward-based crowdfunding projects. The high funding commitment variables and the investor level of experience have no significant effect on the success of the crowdfunding project, when they are estimated jointly across all three platforms and peripheral routes. If regression estimates are made through the central route alone, significant variables can affect the success of the crowdfunding project, e.g., word count, rewards for investor contributions, funding commitments and investor experience. This indicates consistent results between the central routes in model 1 and model 3. The word count remains negative in regression made using only the central route.

The peripheral route consists of three proxies: number of posts shared, total comments and reputation of project owner consisting of positive reputation and negative reputation. These variables are derived from the influence of social media on the success of the crowdfunding project. If regression estimation using all three platforms and together with the central routes, the number of comments and positive reputation in this study significant and positively affects the success of the crowdfunding project. Therefore, higher factors will increase the probability of a crowdfunding project to be successful. Similarly, if the variables on peripheral routes are regressed without considering the central route simultaneously, then the significant and positive variable is the total comments and positive reputation of the project owner, while the number of posts shared and the negative reputation has no significant impact on the success of a crowdfunding project.

It is proved that control variables in the form of portraying dream can significantly differentiate the influence of successful crowdfunding projects between projects that stated the dream content in the description and projects that do not include the content. The difference is positively influential because it indicates that a project that has dream content in its description has a higher probability of success than a project that does not have that content.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

REFERENCES

Abushaban, R. M. 2014. Crowdfunding as a catapult for innovation in the middle east: obstacles and possibilities. In *Proceedings of the 4th IEEE global humanitarian technology conference, GHTC*, 433–440.

Ahlers, G. K. C., Cumming, D., Günther, C. & Schweizer, D. 2015. Signaling in equity crowdfunding. *Entrepreneurship Theory and Practice*, 39(*4*): 955–980.

Allison, T. H., Davis, B. C., Webb, J. W. & Short, J. C. 2017. Persuasion in crowdfunding: an elaboration likelihood model of crowdfunding performance. *Journal of Business Venturing*, 32(*6*): 707–725.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:03.

Areni, C. S. & Cox, K. C. 1995. Assessing the impact of message cues and arguments in persuasion: conceptual and methodological issues. *Advances in Consumer Research*, 22(*1*): 198–202.

Bank, W. 2015. *Six things you need to know about crowdfunding in developing countries.* Available at http://blogs.worldbank.org/psd/six-things-you-need-know-about-crowd funding-developing-countries.

Belleflamme, P., Lambert, T. & Schwienbacher, A. 2010. Crowdfunding : an industrial organization perspective. *Business*, 25–26.

Belleflamme, P., Lambert, T. & Schwienbacher, A. 2013. Individual crowdfunding practices. *Venture Capital*, 15(*4*): 313–333.

Belleflamme, P., Lambert, T. & Schwienbacher, A. 2014. Crowdfunding: tapping the right crowd. *Journal of Business Venturing*, 29(*5*): 585–609.

Belleflamme, P., Omrani, N. & Peitz, M. 2015. The economics of crowdfunding platforms. *Information Economics and Policy*, 33: 11–28.

Bhattacherjee, A. & Sanford, C. 2006. Influence processes for Information Technology acceptance: an elaboration likelihood model. *MIS Quarterly*, 30(*4*): 805–825.

Bi, S., Liu, Z. & Usman, K. 2017. The influence of online information on investing decisions of reward-based crowdfunding. *Journal of Business Research*, 71: 10–18.

Bradford, C. S. 2012. Crowdfunding and the federal securities law. *Columbia Business Law Review*, 2012: 150.

Bredahl, L., Grunert, K. G. & Frewer, L. J. 1998. Consumer attitudes and decision-making With regard to genetically engineered food products – A review of the literature. *Journal of Consumer Policy*, 21(3): 251–277.

Brooks, C. 2008. Econometrics for Finance. *International Journal*.

Buttice, V., Milano, P., Rossi-lamastra, C. & Milano, P. 2015. *Segmented receivers ? preferences and the response to signals.* An empirical test in film-crowdfunding Massimo Colombo, 2015.

Cardon, M. S. 2008. Is passion contagious? The transference of entrepreneurial passion to employees. *Human Resource Management Review*, 18(*2*): 77–86.

Chen, X. P., Yao, X. & Kotha, S. 2009. Entrepreneur passion and preparedness in business plan presentations: A persuasion analysis of venture capitalists' funding decisions. *Academy of Management Journal*, 52(*1*): 199–214.

Chu, S. & Kim, Y. 2011. Determinants of consumer engagement in electronic word-of-mouth (eWOM) in social networking sites. *International Journal of Advertising*, 30(*1*): 47–75.

Cooper, D. R. & Schindler, P. S. 2014. Business research methods. *Business research methods*.

Crano, W. D. & Prislin, R. 2006. Attitudes and persuasion. (*Annual Review of Psychology*), 57: 345–374.

Cukier, D. B. 2016. *Equity crowdfunding in Brazil*.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:03.

Cyr, D., Head, M., Lim, E. & Stibe, A. 2018. Using the elaboration likelihood model to examine online persuasion through website design. *Information and Management*, 55(7): 807–821.

Cystic fibrosis in Australia 2016. Society. *Equity Crowdfunding: Taking Profits From the Collaborative Economy*.

Darley, W. K. & Smith, R. E. 1993. Advertising claim objectivity: antecedents and effects. *Journal of Marketing*, 57(*4*): 100–113.

Davis, B. C., Hmieleski, K. M., Webb, J. W. & Coombs, J. E. 2017. Funders' positive affective reactions to entrepreneurs' crowdfunding pitches: The influence of perceived product creativity and entrepreneurial passion. *Journal of Business Venturing*, 32(*1*): 90–106.

De Carvalho, L. F. & Maccari, E. A. 2014. *Equity-based Crowdfunding as an alternative for funding of startups: trends in Brazilian Context*.

Dennis, Fuller & Valacich 2008. Media, tasks, and communication processes: A theory of Media synchronicity. *MIS Quarterly*, 32(*3*): 575.

Frydrych, D., Bock, A. J., Kinder, T. & Koeck, B. 2014. Exploring entrepreneurial legitimacy in reward-based crowdfunding. *Venture Capital*, 16(*3*): 247–269.

General Dynamics 2003. *Determining sample size.* University of Florida IFAS extension, I: 5.

Glaeser, E. L. & Shleifer, A. 2001. Not-for-profit entrepreneurs. *Journal of Public Economics*, 81(*1*): 99–115.

Goldfarb, A. & Tucker, C. E. 2011. Privacy regulation and online advertising. *Management Science*, 57(*1*): 57–71.

Gorton, G. 1996. Reputation formation in early bank note markets. *Journal of Political Economy*, 104(*2*): 346–397.

Groth, J. 1995. Important factors in the sale and pricing of services. *Management Decision*, 33(*7*): 29–34.

Gujarati, D. N. 2004. *Basic econometrics*. New York.

Han, J. T., Chen, Q., Liu, J. G., Luo, X. L. & Fan, W. 2018. The persuasion of borrowers' voluntary information in peer to peer lending: an empirical study based on elaboration likelihood model. *Computers in Human Behavior*, 78: 200–214.

Hobbs, J., Grigore, G. & Molesworth, M. 2016. Success in the management of crowdfunding projects in the creative industries. *Internet Research*, 26(*1*): 146–166.

Hong, Y., Hu, Y. & Burtch, G. 2015. How does Social Media Affect Contribution to Public versus Private Goods in Crowdfunding Campaigns. In. *Proceedings*. *ICIS 2015*: (1–15).

Inman, J. J., McAlister, L. & Hoyer, W. D. 1990. Promotion signal: proxy for a price cut? *Journal of Consumer Research*, 17(*1*): 74.

Kelman, H. C. 1961. Processes of opinion change. *Public Opinion Quarterly*, 25(*1*): 57.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:03.

Kim, D. & Benbasat, I. 2009. Trust-assuring arguments in B2C e-commerce: impact of content, source, and price on trust. *Journal of Management Information Systems*, 26(*3*): 175–206.

Kim, T., Por, M. H. & Yang, S. B. 2017. Winning the crowd in online fundraising platforms: the roles of founder and project features. *Electronic Commerce Research and Applications*, 25: 86–94.

Kunz, M. M., Bretschneider, U., Erler, M. & Leimeister, J. M. 2017. An empirical investigation of signaling in reward-based crowdfunding. *Electronic Commerce Research*, 17(*3*): 425–461.

Kunz, M. M., Englisch, O., Beck, J. & Bretschneider, U. 2016. Sometimes you win, sometimes you learn - success factors in reward-based crowdfunding. In *Multikonferenz wirtschaftsinformatik (MKWI)*.

Kuppuswamy, V. & Bayus, B. L. 2018. Crowdfunding creative ideas: the dynamics of project backers. In. *Economics of Crowdfunding*: (151–182).

Leite, P. & Moutinho, N. 2012. *Innovation Through crowdfunding: a quantitative and qualitative analysis of Kickstarter*. Cinet. Available at http://repositorio-aberto.up.pt/handle/10216/71435, (707–717).

Li, E. & Martin, J.S. 2016. Capital formation and financial intermediation: the role of entrepreneur reputation formation. *Journal of Corporate Finance*. https://doi.org/10.1016/j.jcorpfin.2016.04.002.

Li, S., Srinivasan, K. & Sun, B. 2009. Internet auction features as quality signals. *Journal of Marketing*, 73(*1*): 75–92.

Li, Z. & Jarvenpaa, S. 2015. Motivating IT-mediated crowds: the effect of goal setting on project performance in online crowdfunding. *ICIS 2015 proceedings*, (September), (1–9).

Lounsbury, M. & Glynn, M. A. 2001. Cultural entrepreneurship: stories, legitimacy, and the acquisition of resources. *Strategic Management Journal*, 22(*6–7*): 545–564.

Luo, C., Wu, J., Shi, Y. & Xu, Y. 2014. The effects of individualism-collectivism cultural orientation on eWOM information. *International Journal of Information Management*, 34(*4*): 446–456.

Maier, E. 2016. Supply and demand on crowdlending platforms: connecting small and medium-sized enterprise borrowers and consumer investors. *Journal of Retailing and Consumer Services*, 33: 143–153.

Markets, R. 2016. And. In. *Global Crowdfunding market*, (2016-2010). Dublin, Ireland.

Mollick, E. 2014. The dynamics of crowdfunding: an exploratory study. *Journal of Business Venturing*, 29(*1*): 1–16.

Mukhopadhyay, A. & Johar, G. V. 2007. Tempted or not? The effect of recent purchase History on responses to affective advertising. *Journal of Consumer Research*, 33(*4*): 445–453.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:03.

Neelamegam, R. & Veni., K. P. 2008. Bancassurance – an emerging concept in India. *The Journal of Management*, 3(*June*): 49–54.

Oettingen, G., Pak, H. & Schnetter, K. 2001. Self-regulation of goal setting: turning free fantasies about the future into binding goals. *Journal of Personality and Social Psychology*, 80(*5*): 736–753. Park, J. H. & Lennon, S. J. 2004. Television apparel shopping: impulse buying and parasocial interaction. *Clothing and Textiles Research Journal*, 22(*3*): 135–144.

Petty, R. E. & Cacioppo, J. T. 1986. The elaboration likelihood model of persuasion. *Advances in Experimental Social Psychology*, 19(*C*): 123–205.

Petty, R. E., Haugtvedt, C. P. & Smith, S. M. 1995. Elaboration as a determinant of attitude strength: creating attitudes that are persistent, resistant, and predictive of behavior. *Attitude Strength: antecedents and Consequences*. 93–130. Available at http://www.psy.ohio-state.edu/petty/documents/1995PettyHaugtvedtSmith Elaboration.pdf%5Cnhttp://psycnet.apa.org/psycinfo/1995-98997-005

Petty, R. E., Strathman, A. J., Cacioppo, J. T. & Priester, J. R. 2005. *To think or not to think: exploring two routes to persuasion*.

Petty, R. E. & Wegener, D. T. 1998. Attitude change: multiple roles for persuasion variables. In *The handbook of social psychology*, 323–390.

Petty, R. E. & Wegener, D. T. 1999. The Elaboration Likelihood Model: current status and controversies. *Dual Processing Theories in Social Psychology*. https://doi.org/10.1016/S0022-4405(97)00003-4.

Priester, J. R. & Petty, R. E. 1995. Source attributions and persuasion: perceived honesty as a determinant of message scrutiny. *Personality and Social Psychology Bulletin*, 21(*6*): 637–654.

Richard, M., Chebat, J., Yang, Z. & Putrevu, S. 2010. A propose of model of online consumer behavior: assessing the role of gender. *Journal of Business Research*, 63(9–10): 926–934.

Richard, M. O. 2005. Modeling the impact of internet atmospherics on surfer behavior. *Journal of Business Research*, 58(*12*): 1632–1642.

Robins, S. P. & M. C. 2012. Management. *Angewandte Chemie /International Edition*, 40. https://doi.org/10.1002/1521-3773(20010316)40:6<9823::AID-ANIE9823>3.3.CO;2-C.

Rossi, M. 2014. The new ways to raise Capital: an exploratory study of crowdfunding. *International Journal of Financial Research*, 5(*2*).

Spinelli, S. & Adams, R. 2012. *New venture creation*. New York: McGraw-Hill.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:03.

Steigenberger, N. 2017. Why supporters contribute to reward-based crowdfunding. *International Journal of Entrepreneurial Behavior and Research*, 23(*2*): 336–353.

Tam, K. Y. & Ho, S. Y. 2005. Web personalization as a persuasion strategy: an elaboration likelihood model perspective. *Information Systems Research*, 16(3): 271–291.

Thies, F., Wessel, M. & Benlian, A. 2014. Understanding the dynamic interplay of social buzz and contribution behavior within and between online platforms – evidence from crowdfunding. *Proceedings of the 35th international conference on Information Systems (ICIS), Auckland, New Zealand, (April 2016)*.

Tyagi, A. V. & Radia, S. 2016. An overview of crowdfunding in the Indian setting. *Imperial Journal of Interdisciplinary Research*, 2(*11*): 1174–1184.

Wang, N. 2015. How to crowdfund more : A signaling perspective. *Proceedings of the twentieth DIGIT workshop*, (1–12).

Wang, N., Li, Q., Liang, H., Ye, T. & Ge, S. 2018. Understanding the importance of interaction between creators and backers in crowdfunding success. *Electronic Commerce Research and Applications*, 27: 106–117.

Wood, W., Rhodes, N. & Biek, M. 1995. Working knowledge and attitude strength: an information-processing analysis. In. *Attitude Strength: Antecedents and Consequences*: 283–314.

Xiao, S., Tan, X., Dong, M. & Qi, J. 2014. How to design your project in the online crowdfunding market ? Evidence from Kickstarter. In. *Thirty Fifth International Conference on Information Systems*, 1–8.

Zhang, B., Wardrop, R., Garvey, K., Collings, S., Ziegler, T., Hilemen, G., Lui, A. 2017. *The Africa and Middle East Alternative Finance*, (February), 63. Available at http://www.whitelabelcrowd.fund/wp-content/uploads/2017/02/2017-africa-middle-east-alternative-finance-report.pdf.

Zheng, H., Hung, J. L., Qi, Z. & Xu, B. 2016. The role of trust management in reward-based crowdfunding. *Online Information Review*, 40(*1*): 97–118.

Zheng, H., Wan, N., Chen, D. & Wang, T. 2014. *Antecedents of Project Implementation Success in Crowdfunding*. 18th PACIS, Chengdu, China. Available at http://aisel.aisnet.org/pacis2014%5Cnhttp://aisel.aisnet.org/cgi/viewcontent.cgi?article=1069&context=pacis2014, (1–13).

Zhou, M. J., Lu, B., Fan, W. P. & Wang, G. A. 2016. Project description and crowdfunding success: an exploratory study. *Information Systems Frontiers* 20: 1–16.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:03.

APPENDIX

Figure A-1. Display Home Zoomal.

Figure A-2. Display Home Catarse.

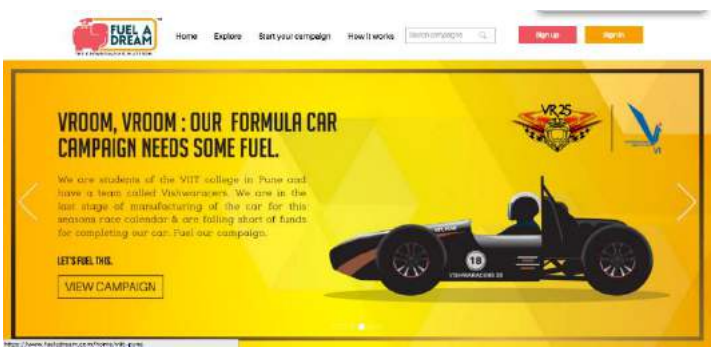


Figure A-3. Display Home Fuel A Dream.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:03.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 11

EFFECTS OF CURRICULUM DESIGN, TEACHING METHODS, AND ACADEMIC ENVIRONMENT ON ETHICAL SENSITIVITIES OF INDONESIAN ACCOUNTING STUDENTS

Emil Bachtiar, Fitriany Fitriany,
Viska Anggraita* and Kurnia A. Rais
Department of Accounting, Universitas Indonesia, Depok, Indonesia

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

ABSTRACT

This study empirically investigates the integration of business ethics into the undergraduate accounting curriculum at the University of Indonesia. It also examines how teaching methods and the academic environment influence student sensitivity to ethical situations. Results from a structured questionnaire reinforced by interviews and focus groups reveal that students exhibited relatively low ethical sensitivity. Teaching methods and student interactions correlate positively with student ethical sensitivity, but the integrative business ethics curriculum exhibits no significant effect.

Keywords: ethics curriculum, ethics awareness, academic atmosphere

* Corresponding Author's E-mail: viska257@gmail.com.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:51.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 11

EFFECTS OF CURRICULUM DESIGN, TEACHING METHODS, AND ACADEMIC ENVIRONMENT ON ETHICAL SENSITIVITIES OF INDONESIAN ACCOUNTING STUDENTS

Emil Bachtiar, Fitriany Fitriany,
Viska Anggraita* and Kurnia A. Rais
Department of Accounting, Universitas Indonesia, Depok, Indonesia

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

ABSTRACT

This study empirically investigates the integration of business ethics into the undergraduate accounting curriculum at the University of Indonesia. It also examines how teaching methods and the academic environment influence student sensitivity to ethical situations. Results from a structured questionnaire reinforced by interviews and focus groups reveal that students exhibited relatively low ethical sensitivity. Teaching methods and student interactions correlate positively with student ethical sensitivity, but the integrative business ethics curriculum exhibits no significant effect.

Keywords: ethics curriculum, ethics awareness, academic atmosphere

* Corresponding Author's E-mail: viska257@gmail.com.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:59.

INTRODUCTION

Corporate scandals during the early 2000s and the 2008 economic crisis directed global scrutiny toward business schools that had graduated the accountants bankers, and brokers who had destroyed companies and nearly the global economy in pursuit of profits and bonuses. In response to the outcry, B-schools revived the teaching of ethics and sought to balance quantitative and qualitative considerations in curricula (Podolny, 2009).

The Association to Advance Collegiate Schools of Business (AACSB) has overseen ethics instruction in B-schools since 1994. Typically ethics instruction had been provided in dedicated courses or as elements of other courses (Brinkman et al., 2011). In 1991, AACSB gave business schools more flexibility to organize ethics courses (Brinkman et al., 2011). After accounting scandals in 2001 and 2003, AACSB made the teaching of ethics a higher priority and called for integrating ethics across all courses rather than concentrating it in a specific course (Brinkmann et al., 2011). The integrated approach remains the trend in teaching business ethics. Unfortunately, an integrated approach is difficult. Not all faculty are adept teaching ethical material (Brinkmann et al., 2011), and they devote only bits of their courses to ethics (Warnell, 2010).

The accounting department at the University of Indonesia has adopted the integrated approach and integrated ethics into the syllabi for all its accounting programs (Universitas Indonesia, 2013). According to its 2012 annual report, the department, seeks to produce graduates who bring high ethical standards to an era of globalization.

This study investigates empirically the integration of of business ethics into the undergraduate accounting curriculum at the University of Indonesia. It investigates the efficacy of that curriculum as demonstrated by students' understanding and sensitivity to ethical issues in business, student life, and their personal lives. Its results offer insights into an integrated business ethics curriculum that can aid B-schools generally.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Ethical Awareness

The terms "ethical awareness" ("ethical sensitivity" here) and "moral awareness" carry the same meaning but in different contexts. Ethical awareness is sensitivity to the ethical dimensions of situations. Kohlberg identifies three levels of ethical awareness: pre-conventional (characterized by self-centeredness), conventional (a basic understanding of morality and why to practice it), and post-conventional (understand the elements of morality and recognize their merit for culture and society). Most people occupy the conventional level of ethical awareness (Lowry, 2003). Moral awareness

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:59.

implies a broader moral framework. The Four Components Model identifies four psychological processes: moral sensitivity, judgment, motivation, and action. Ethical sensitivity is the ability to recognize unethical situations, decisions, or actions (Warnell, 2010), and it is that which we focus on in this study.

Few studies investigate ethical sensitivity. Lin and Zhang (2011), the main referent for this study, prove empirically that evolving ethical sensitivities of Chinese managers and accountants reflect changes in the values of business ethics. They find that respondents retain ethical values during economic, social, and cultural shifts and are intoleranct of clearly unethical practices. This study parallels Lin and Zhang (2011). We, however, examine ethical sensitivity in everyday life, not merely as an issue in business.

Ethics Curriculum and Academic Environment

Warnell (2010) establishes the importance of a comprehensive approach to ethics education that provides students theoretical foundations plus skills to confront ethical content in other courses and extra-curricular programs. He sees little use in teaching ethical values without providing the willingness and tools to implement them. He also notes that applied studies in ethics encourage students' moral development.

Warnell (2010) examines curriculua in depth. Examining 146 elective courses, he finds eight in which ethics is discussed explicitly.

Brinkmann et al., (2011) recognize that not all teachers are proficient in discussing ethical material; among remedies they suggest are team teaching, guest lecturers, and establishing a business ethics review center to advise faculty, discuss materials, disseminate research results, and develop case studies and teaching aids.

Most research into business ethics curricula disregards how the college environment influences students' perceptions. This study is guided by the four components in the Theory of Planned Behavior: belief, intention, behavior, and projecting intentions correlated with behavior (Fisbein & Ajzen, 1975, in Wilson, 2008).

Deshpande et al., (2000) and Fritzsche (2000) propose that social environments affect people's ethical intentions and behavior. Thus we examine how the academic environment affects students' ethical sensitivity.

Hypothesis Development

As noted, Warnell (2010) finds that the more ethics is integrated into other courses, the greater is students' development of ethical sensitivity. Accordingly, we propose Hypothesis 1:

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:59.

H1: *Integrated business ethics curricula has a positive effect on students' ethical understanding and sensitivity*

Flyod et al., (2013) emphasize that the effective way to teach business ethics and develop students' ability to resolve ethical dilemmas is to integrate ethical cases into the curricula. Warnell (2010) advocates team teaching, guest lecturers, and workshops to expand teachers' confidence and ability to bring ethical issues into their courses. Brinkman et al., (2011) calls for the application of ethical material teaching required material discussion, dissemination of research concerning ethics and ethics teaching, case study development, and development of teaching aids. Thus we propose

H2a: *Lecturers' knowledge of ethics has a positive effect on students' ethical understanding and sensitivity*

H2b: *Appropriate teaching methods has a positive effect on students' ethical understanding and sensitivity*

An organization's ethical climate is its shared perception of what constitutes ethical behavior and how ethical issues should be addressed (Victor & Cullen, 1987). Wimbush et al., (1997) suggest that bosses influence organizational climates and therefore the ethical climate at work. Nonis and Swift (2001) find students more likely to commit dishonest acts if they believe such behavior is acceptable to others. Day et al., (2011) document the behavioral influence of the academic environment.

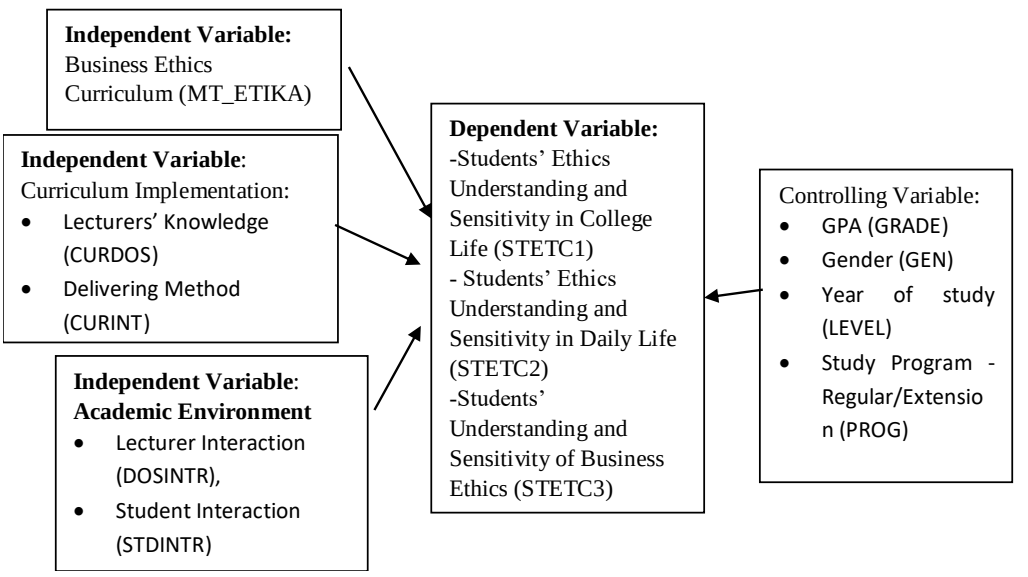


Figure 1. Research Framework.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:59.

We propose

H3a: *Interaction with lecturers has a positive effect on students' understanding and sensitivity of ethics*

H3b: *Interactions between students has a negative effect on students' ethical understanding and sensitivity*

We divide the issue into students' understanding and sensitivity to ethics in their college lives, daily lives, and business studies. Figure 1 displays that framework.

RESEARCH METHOD AND MODEL

Data Collection Procedure

We collected primary data via questionnaires followed by interviews and focus groups with undergraduate accounting students at the University of Indonesia. We selected students enrolled in their fourth or later semesters because we assumed they had sufficient experience with the accounting program's ethics curriculum and teaching methods. We distributed 400 questionnaires (300 regular students and 100 extension students). Respondents answered each question on a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree). We received 313 (78% response rate), 49 of which we discarded as incomplete, invalid, or because respondents were not yet in their fourth semester (for regular undergraduate program).

Population and Sample

As Table A-4 in Appendix C indicates, 213 respondents were regular students and 51 were extension students. Among the former, 97.65% were in their fourth through eighth semesters (38% fourth semester students, 32% sixth semester students). Among extension students, 80.39% were in their second semester. Regular students (52%) reported GPAs of 2.75–3.00. Most extension students reported GPAs of 3.00–3.50. Most respondents (60%) were women.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:59.

Research Model

Tables A-1 and A-2 in Appendix A define all variables.The model used to test hypotheses is as follows:

$$STETCi = \beta_0 + \beta_1 MT_ETIKAi + \beta_2 CURDOSi + \beta_3 CURINTRi + \beta_4 DOSINTR_i + \beta_5 STDINTR_i + \beta_6 GRADEi + \beta_7 GEN_i + \beta_8 LEVELi + \beta_9 PROGi + \mu$$

$$STETC1i = \beta_0 + \beta_1 MT_ETIKAi + \beta_2 CURDOSi + \beta_3 CURINTRi + \beta_4 DOSINTR_i + \beta_5 STDINTR_i + \beta_6 GRADEi + \beta_7 GEN_i + \beta_8 LEVELi + \beta_9 CPROGi + \mu$$

$$STETC2i = \beta_0 + \beta_1 MT_ETIKAi + \beta_2 CURDOSi + \beta_3 CURINTRi + \beta_4 DOSINTR_i + \beta_5 STDINTR_i + \beta_6 GRADEi + \beta_7 GEN_i + \beta_8 LEVELi + \beta_9 PROGi + \mu$$

$$STETC3i = \beta_0 + \beta_1 MT_ETIKAi + \beta_2 CURDOSi + \beta_3 CURINTRi + \beta_4 DOSINTR_i + \beta_5 STDINTR_i + \beta_6 GRADEi + \beta_7 GEN_i + \beta_8 LEVELi + \beta_9 PROGi + \mu$$

Expected result:

H1: $\beta_1 > 0$; H2a: $\beta_2 > 0$; H2b: $\beta_3 > 0$; H3a: $\beta_3 > 0$; H3b: $\beta_5 > 0$

Dependent Variables:

STETCi is STETC1–STETC 3
STETC1 = students' understanding and sensitivity to ethics in their college lives
STETC2 = students' understanding and sensitivity to ethics in their daily lives
STETC3 = students' understanding and sensitivity to ethics in their business curricula

Independent Variables:

MT_ETIKA = students' perceptions of integrated business ethics curriculum
CURDOS = students' perceptions of proficiency and knowledge of lecturers on business ethics
CURINTR = students' perceptions of business ethics teaching methods
STDINTR = students' perception of interaction among fellow students
DOSINTR = students' perception of lecturer's attitude

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:59.

Control Variables:

GRADE = Grade Point Average
GEN = Gender
LEVEL = Semester of study
PROG = 1 Extension, 0 regular

RESULTS

Validity and Reliability Tests

Validity testing determines whether statements in the questionnaire relate closely to what the model proposes to measure. Reliability testing determines whether an assessment tool produces stable and consistent results. We confirmed validity using standardized loading factors (SLFs) per Igbaria et al., (1997). We confirmed reliability using construct reliability (CR) and variance extracted (VE) (Hair et al., 1988, in Wijanto, 2008). We employed structural equation modeling using the full version of Lisrel 8.72 and SPSS.SLF must exceed 0.5 and t-values must equal or exceed 1.96 (Iqbaria et al., 1997). Of all observed variables, 28 are valid.

Table A-3 in Appendix B shows results for reliability using CRs and VEs. CR must be $\geq$ 0.70, and VE must be $\geq$0.50 (Hair et al., 1995). For all variables except STETC 2, CR $\geq$ 0.70; four have VE $\geq$ 0.50. All variables that represent CURDOS, WORK, and DOSINTR are valid and reliable.

VEs for STETC1, STETC3, CURINTR, and STDRINT are below 0.50. Given that their CRs $\geq$ 0.70, however, VE below 0.50 indicates variables are quite reliable. The CR for STETC2 is < 0.7, and its VE is value < 0.5. It is not reliable and was excluded from hypothesis testing.

Descriptive Statistics

Table A-5 of Appendix C reveals that respondents exhibit relatively low knowledge and understanding of ethics, especially as related to business. With such a low ethical understanding, students will be more easily influenced to accept or take unethical acts. The highest ethical sensitivity is associated with the lectures. This may be due to the students experiencing their own losses due to the unethical behavior of their peers. Respondents were least sensitive to business ethics. This finding is understandable: as students they were not business practitioners. The low sensitivity of business ethics is

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:59.

probably due to a lack of discussion on business ethics or ineffective implementation of business ethics teaching. Table A-6 in Appendix C reveals that the accounting department has inconsistently integrated business ethics into its curriculum, although 65% of respondents indicate they have encountered ethics material in multiple courses.

Table 1. Awareness and sensitivity to unethical behavior in college life

$STETC1i = \beta_0 + \beta_1 MT_ETIKAi + \beta_2 CURDOSi + \beta_3 CURINTRi + \beta_4 DOSINTR_i + \beta_5 STDINTR_i + \beta_6 GRADEi + \beta_7 GEN_i + \beta_8 LEVELi + \beta_9 CPROGi + \mu$				
Hypotheses	**Independent Variable/Control**	**Coeficient**	**t value**	**Conclusion**
H1	MKE	−0.10	−1.29	Not Significant
H2a	CURDOS	0.01	0.11	Not Significant
H2b	CURINTR	0.26	1.77**	Significant
H3a	STDINTR	−0.04	−0.44	Not Significant
H3b	DOSINTR	0.20	1.76**	Significant
	LEVEL	−0.04	−0.29	Not Significant
	GEN	0.09	1.14	Not Significant
	GRADE	0.11	1.35	Not Significant
	PROG	0.16	1.48	Not Significant

*** significant with α = 5%.

** Significant with α = 10%.

Table 2. Awareness and Sensitivity to unethical behavior in business

$STETC3i = \beta_0 + \beta_1 MT_ETIKAi + \beta_2 CURDOSi + \beta_3 CURINTRi + \beta_4 DOSINTR_i + \beta_5 STDINTR_i + \beta_6 GRADEi + \beta_7 GEN_i + \beta_8 LEVELi + \beta_9 CPROGi + \mu$				
Hypotheses	**Independent Variable/Control**	**Coeficient**	**t value**	**Conclusion**
H1	MKE	−0.11	−1.49	Not Significant
H2a	CURDOS	0.00	-0.02	Not Significant
H2b	CURINTR	0.37	2.51**	Significant
H3a	STDINTR	0.18	1.99**	Significant
H3b	DOSINTR	−0.02	−0.17	Not Significant
	LEVEL	−0.03	−0.27	Not Significant
	GEN	0.10	1.30	Not Significant
	GRADE	0.07	0.89	Not Significant
	PROG	−0.14	−1.30	Not Significant

** α = 5%.

* α = 10%.

Additional Tests

We performed an additional test on STETC 2, the variable denoting ethical understanding and sensitivity in daily life. Test results show that STETC 2 is less reliable, but testing confirms that five questions relevant to STETC 2 are valid. That number

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:59.

exceeds the number of statistically valid questions pertaining to STETC 3 (understanding and sensitivity to business ethics) and equals the number of questions pertaining to STETC1 (ethics understanding and sensitivity in lectures).

Additional testing demonstrates that teaching method (CURINT) correlates positively with the three types of ethical understanding and sensitivity. This finding is consistent with findings in the main test, but the main test shows that teaching methods positively affect understanding and sensitivity to ethics only in students' college lives and business studies. Consistent with the main test, interaction with fellow students (STDINTR) correlates positively with ethical understanding and sensitivity in students' daily lives and business studies. As in the main test, student interaction (STDINTR) does not affect understanding and sensitivity in students' college lives (STETC1).

DISCUSSION

Tables 1 and 2 show results of structural testing using LISREL. Only teaching methods and interaction with fellow students correlate significantly and positively with understanding and sensitivity to business ethics. These results and input from interviews and focus groups indicate that discussing examples and cases is the most effective method of teaching ethics. Hypotheses H2b and H3a are confirmed.

Interaction with students (STDINTR) correlates positively with understanding and sensitivity to business ethics. This means the level of ethics of other students where students associate affect the understanding and sensitivity of business ethics of students.

The business ethics curriculum (H1: MKE), lecturers' knowledge and ability (H2a: CURDOS), and interaction with lecturers (H3b: DOSINTR) show no meaningful correlation to understanding and sensitivity of the ethics of lectures and business ethics. Reviews of course syllabi and transcripts of interviews and focus groups reveal that the accounting department has not integrated ethics into the curriculum consistently. It is absent entirely in some syllabi.

The effectiveness of classroom discussion varies with the lecturer's ability and interest. Some lecturers, notably those with business experience, discuss business practices in detail rich with examples. Others skim the subject or disregard it on the grounds that students already have formed ethical standards or that ethics cannot be taught. Therefore, the lecturer's knowledge of ethics has an insignificant influence.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:59.

In focus groups, students reported that they most remembered the admonitions of faculty to behave ethically, but their interactions with lecturers did not affect their sensitivity to ethical issues. They felt they didn't need advice about ethical behavior or had received enough from parents or others when they were young. Counseling needs to be accompanied by concrete examples to better situate advice will be more real and contextual with the ethical dilemmas they will face.

CONCLUSION, RECOMMENDATIONS AND LIMITATIONS

This study empirically investigated the integration of business ethics into the undergraduate accounting curriculum at the University of Indonesia. It also examined how teaching methods and the academic environment influenced student sensitivity to ethical situations. Results show that the method of teaching ethics and interaction among students correlate significantly and positively with students' ethical sensitivity.

The university's integrated business ethics curriculum exhibits no significant effect on students' ethical sensitivity. Administrators should adopt the approach in Warnell (2010) and give students a theoretical foundations upon which to develop ethical skills to apply in other courses and extra-curricular programs. Suggestions from Brinkmann et al., (2011) to institute team teaching, guest lecturers, and an ethics review center to assist facultyalso deserve consideration.

This study has several limitations. First, our instruments are tailored to Indonesia. Future research can use more sophisticated measurements and experimental methods. In addition, we surveyed only undergraduate accounting students at the Faculty of Economics and Business at Universitas Indonesia. Future research may be able to generalize our results by expanding the sample.

REFERENCES

Allen, W. R, Bacdayan, P, Berube Kowalski, K. & Roy, M. H. 2005. Examining the impact of ethics training on business student values. *Education and Training* 47: 170-182.

Bloodgood, J. M., Turnley, W. H. & Mudrack, P. E. 2010. Ethics instruction and the perceived acceptability of cheating. *Journal of Business Ethics* 95: 23-37.

Brinkmann, J. Sims, R. R. & Nelson, L. J. 2011. Business ethics across the curriculum. *Journal of Business Ethics Education* 8: 83-104.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:59.

Day, N. E., Hudson, D., Dobies, P. R. & Waris, R. 2011. Student or situation? Personality and classroom context as predictors of attitudes about business school cheating. *Social Psychology Education* 14: 261-282.

Deshpande, S. P., George, E., & Joseph, J. (2000). Ethical climates and managerial success in Russian organizations. *Journal of Business Ethics*, *23*(2), 211-217.

Floyd, L. A., Xu, F., Atkins, R., & Caldwell, C. (2013). Ethical outcomes and business ethics: Toward improving business ethics education. *Journal of business ethics*, *117*(4), 753-776.

Fritzsche, D. J. (2000). Ethical climates and the ethical dimension of decision making. *Journal of Business Ethics*, *24*(2), 125-140.

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1995). *Multivariate date analysis with readings*. Englewood Cliff, NJ: Prentce.

Igbaria, M., Zinatelli, N., Cragg, P., & Cavaye, A. L. (1997). Personal computing acceptance factors in small firms: A structural equation model. *MIS quarterly*, *21*(3).

Lin, Z. J & Zhang, J. 2011. Ethical awareness of Chinese business manager and accountants and their view on the use of off-book accounts. *Advances in Accounting, incorporating Advances in International Accounting* 27: 143-155.

Lowry, D. 2003 An Investigation of student moral awareness and associated factors in two cohort of an undergraduate business degree in a British university: Implications for business ethics curriculum design *Journal of Business Ethics* 48: 7-19.

Nonis, S., & Swift, C. O. (2001). An examination of the relationship between academic dishonesty and workplace dishonesty: A multicampus investigation. *Journal of Education for business*, *77*(2), 69-77.

Peterson, D. K. 2002. The relationship between unethical behaviour and the dimensions of the ethical climate questionnaire. *Journal of Business Ethics* 41: 313-326.

Podolny, J. M. 2009. The buck stops (and starts) at business school. *Harvard Business Review* 87: 62-67.

Universitas Indonesia. 2013. Laporan tahunan Departemen Akuntansi tahun 2012. *Departemen Akuntansi Fakultas Ekonomi dan Bisnis*. [*Annual Report Department of Accounting in 2012*. Department of Accounting Faculty of Economics and Business]

Victor, B., & Cullen, J. B. (1987). A theory and measure of ethical climate in organizations. *Research in corporate social performance and policy*, *9*(1), 51-71.

Warnell, J. M. 2010. An undergraduate business ethics curriculum: learning and moral development outcomes. *Journal of Business Ethics Education* 7: 63-84.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:59.

Wilson, B. 2008. Predicting intended unethical behaviour of business students. *Journal of Education and Business* 83: 187-195.

Wimbush, J. C., Shepard, J. M., & Markham, S. E. (1997). An empirical examination of the relationship between ethical climate and ethical behavior from multiple levels of analysis. *Journal of Business Ethics*, *16*(16), 1705-1716.

APPENDIX A

Table A-1. Operationalization of main variables

No	Variable	Description
1	Degree of Ethics Sensitivity in College life (STETC1)	Understanding and sensitivity of students to the behavior and habits in the college. Measured by a questionnaire consisting of 6 items of questions about unethical behavior in college life
2	Degree of Ethics Sensitivity in Daily Life (STETC2)	Understanding and sensitivity of students to the behavior and habits in everyday life. Measured by a questionnaire consisting of 7 items of questions about ethical behavior in daily life
3	Degree of Business Ethics Sensitivity (STETC3)	Students' understanding and sensitivity to corruption and other unethical acts. Measured by a questionnaire consisting of 5 items of questions about unethical behaviour
5	Students' Perception in Ethics Curriculum (MK_ETIKA)	Student perception about curriculum implementation in their college. Measured by using the continuing variable from 1–6 where the higher the value indicates the business ethics curriculum that is increasingly integrated.
6	Lecturers' Capability (CURDOS)	Student perceptions about lecturer's ability and knowledge about ethics. Measured by 4 questions.
7	Delivering Method (CURINT)	Student perceptions of the delivery method of ethical material in the classroom. Measured by 4 questions.
8	Students' Interaction (STDINTR)	Student perceptions about the level of student ethics around him. Measured with an instrument consisting of 8 questions.
9	Lecturer Interaction (DOSINTR)	Students' perceptions of how lecturers teach ethical values and provide examples of kindness in the interaction of teaching and learning with students. Measured with 6 questions.

Table A-2. Operationalization of control variables

No	Variable	Description
1	Grade Point Average – GPA (GRADE)	GPA, *continuous variable,* scored 4 if GPA > 3,50; scored 3 if IPK between 3,00–3,50; scored 2 if GPA between 2,75–3,00; and scored 1 if GPA under 2,75.
2	Gender (GEN)	A dummy variable, 1 if man and 0 if woman.
3	Semester (LEVEL)	4^{th}, 5^{th}, 6^{th} semester and forth
4	Regular/extension program (PROG)	Dummy variable, 1 if extension and 0 if regular

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:59.

APPENDIX B

Reliability Test Result

Table A-3. Summary of CR and VE calculations

No	Latent Variable	CR	VE	Conclusion
1	STETC1	0.7	0.4	Quite Reliable
2	STEC2	0.6	0.3	Not Reliable
2	STETC3	0.7	0.4	Quite Reliable
3	CURDOS	0.8	0.5	Reliable
4	CURINTR	0.7	0.4	Quite Reliable
5	WORK	0.8	0.6	Reliable
6	STDRINT	0.7	0.4	Quite Reliable
7	DOSINTR	0.8	0.5	Reliable

Source: Data Processing Result.

APPENDIX C

Table A-4. Respondents' Characteristics

No	Regular Program		Extension Program	
Semester	Total	%	Total	%
2	0	0	41	80.39
3	0	0	0	0
4	80	37.56	5	9.80
5	3	1.41	0	0
6	68	31.92	2	3.93
7	47	22.07	0	0
8	10	4.69	3	5.88
9	4	1.88	0	0
10	1	0.47	0	0
Total	213	100	51	100
GEN	Total	%	Total	%
Man	78	36.97	25	49.92
Woman	133	63.03	26	50.98
Not filling	2		0	
Total	213	100	51	100
GPA	Total	%	Total	%
> 3,50	2	0.94	9	17.64
3,00–3,50	21	9.86	33	64.70
2,75–3,00	111	52.11	9	17.64
< 2,75	75	35.21	0	0
Not filling	4	1.88	0	0
Total	213	100	51	100

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:59.

Table A-5. Descriptive statistics for regular students

	Med	Average	Min	Max	STDV
Degree of Ethics Sensitivity in college life (STETC1)	5.33	5.26	2.50	7.00	0.76
Degree of Ethics Sensitivity in Daily Life (STETC2)	5.00	5.04	2.43	6.71	0.78
Degree of Business Ethics Sensitivity (STETC3)	4.17	4.25	1.65	7.00	0.87
Lecturers' Capability (CURDOS)	5.25	5.25	2.75	7.00	0.82
Delivering Method (CURINT)	4.50	4.51	1.50	6.75	0.99
Students' Interaction (STDINTR)	4.00	3.98	2.00	7.00	0.75
Lecturer Interaction (DOSINTR)	4.83	4.81	2.33	7.00	0.83

Table A-6. Descriptive statistics for extension students

	Med	Average	Min	Max	STDV
Degree of Ethics Sensitivity in college life (STETC1)	5.50	5.45	4.17	6.50	0.62
Degree of Ethics Sensitivity in Daily Life (STETC2)	5.14	5.19	2.43	6.86	0.78
Degree of Business Ethics Sensitivity (STETC3)	4.33	4.46	2.00	6.50	1.02
Lecturers' Capability (CURDOS)	5.25	5.03	2.25	6.25	0.95
Delivering Method (CURINT)	4.50	4.36	2.75	7.00	1.03
Students' Interaction (STDINTR)	3.88	3.93	2.50	6.13	0.83
Lecturer Interaction (DOSINTR)	4.83	4.67	1.50	6.50	0.95

Table A-7. Descriptive statistics for integrated ethics course

		Regular	Extension	Total	
Score	Description	Total	Total	Total	Percentage
1	Never discussed during my college	8	9	17	6%
2	One special course	16	9	25	9%
3	Spread over several courses	103	15	118	45%
4	Spread over many courses	47	7	54	20%
5	One special course and spread over several courses	27	10	37	14%
6	One special course and spread in many courses	12	1	13	5%
	Total	213	51	264	100%

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:50:59.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 12

INFLUENCE OF MACROECONOMIC DETERMINANTS ON THE RETURN OF REIT WITH CROSS-LISTED ASSETS

Herman Widjaja and Rofikoh Rokhim*

Department of Management, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This study compares the influence of host versus home country determinants of an equity Real Estate Investment Trusts (REIT) with cross-listed assets. It also reviews the model's positioning within the classical theories of capital asset pricing model (CAPM), arbitrage pricing theory or Fama–French (FF) five-factor model. The case study selected was Lippo Malls Indonesia Retail Trust (LMIRT), the first all-Indonesian-assets, cross-listed REIT, listed in Singapore (host country). This research tests the macroeconomic and firm-specific determinants (inflation, stock index, property price, exchange rate, Net Assets, distributable income, gearing ratio) in predicting changes in unit price. The result shows that host country's determinants influences returns significantly more than the home country's (Indonesia). The determinants that significantly influenced returns were: stock market index (positive in both home and host), Net Assets (negative in both home and host), and exchange rate (negative only in host). The research supports the above classical models.

Keywords: cross-listing, multiple regression, REIT, Net Asset, Stock index

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

* Corresponding Author's E-mail: rofikoh.rokhim@ui.ac.id.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:51:49.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 12

INFLUENCE OF MACROECONOMIC DETERMINANTS ON THE RETURN OF REIT WITH CROSS-LISTED ASSETS

Herman Widjaja and Rofikoh Rokhim*

Department of Management, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This study compares the influence of host versus home country determinants of an equity Real Estate Investment Trusts (REIT) with cross-listed assets. It also reviews the model's positioning within the classical theories of capital asset pricing model (CAPM), arbitrage pricing theory or Fama–French (FF) five-factor model. The case study selected was Lippo Malls Indonesia Retail Trust (LMIRT), the first all-Indonesian-assets, cross-listed REIT, listed in Singapore (host country). This research tests the macroeconomic and firm-specific determinants (inflation, stock index, property price, exchange rate, Net Assets, distributable income, gearing ratio) in predicting changes in unit price. The result shows that host country's determinants influences returns significantly more than the home country's (Indonesia). The determinants that significantly influenced returns were: stock market index (positive in both home and host), Net Assets (negative in both home and host), and exchange rate (negative only in host). The research supports the above classical models.

Keywords: cross-listing, multiple regression, REIT, Net Asset, Stock index

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

* Corresponding Author's E-mail: rofikoh.rokhim@ui.ac.id.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

INTRODUCTION

According to Bodie, Kane, and Marcus (2011), Real Estate Investment Trusts (REITs) are similar to closed-ended funds that are invested in real estate or loans secured by real estate. REITs can raise the capital by issuing shares, borrowing from banks, and issuing bonds or mortgages. Most of them are highly leveraged, with typical debt ratios of 70% (in the USA). In Asia, REITs are popular in several markets (Japan, Hong Kong, and Singapore). REITs have become a funding alternative, especially for subsector property developers (e.g., residential, hospitality, healthcare, logistics, data centers, offices, and retail shopping centers).

The chance to list such property assets is open to any market. Any sponsor (owner of the assets) has the option to list not only in domestic but also in foreign stock markets (i.e., they are cross-listed assets).

The cross-listing of assets from several developers in foreign REIT markets raises intriguing questions. Which panel determinants influence the REIT return changes more, the home country's or the host's? Moreover, relevant references regarding the subject are rare to find.

This research focuses on Lippo Malls Indonesia Retail Trusts, the first retail Indonesian-based developer cross-listing several malls and retail spaces located in Indonesian big cities. All of the assets are listed on the Singapore Exchange (D5IU.SI). In its 2016 annual report, LMIR Trust reported that their assets included 20 retail malls and seven retail spaces, for a total net lettable area of 851,850 m^2 with a valuation reaching S$1.94 B. As of November 17, 2017, the market capitalization was S$1.23 billion. In Indonesia, the LMIRT case has become a pioneer in retail REIT, and at the time of writing this paper, it was still the first and only cross-listed Indonesian retail REIT.

This research has selected determinants based on several previous studies regarding security and REIT. On the basis of the capital asset pricing model (CAPM) of Sharpe (1964), Lintner (1965), and Mossin (1966), our research selects the market index as the first determinant. Inspired by the arbitrage pricing theory (APT) of Chen, Roll, and Ross (1986), several macroeconomic variables were also added to the analysis (inflation, property price index, and exchange rate). Besides macroeconomy factors, following Fama and French (1992) and Fama and French (2014) (FF), the research adds three firm-specific determinants, namely, changes in net assets, distributable income, and the gearing ratio. The selection of determinants is relatively similar to the combined model (i.e., market index, macroeconomy, and firm-specific determinants) used by Chen, Hsieh, Vines, and Chiou (1998).

This paper's primary objective is to discover which of the panel determinants influence the returns of a cross-listed REIT most. Does the REIT follow the home country's determinants or behave more like a host country security? The research was also expected to answer the following questions: which determinants are significant and

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

how do they influence REIT LMIRT's returns (positively or negatively)? By evaluating the influencing determinants, this study reviews the application of asset pricing models (i.e., CAPM, APT, and FF five-factor model).

Some research has been inconclusive with regard to whether the determinants have some significance and, if so, whether their influence is negative or positive.

The results of this research should provide considerations for Indonesian developers planning to list their assets in REIT markets. For the academic community, the results should initiate further research, especially with respect to the behavior of REITs with cross-listed assets. Moreover, for the stock exchange authority, especially Bursa Efek Indonesia, the results should provide insight regarding neighboring market attractiveness in REIT listings and inputs for further development of competitiveness in the Indonesian Stock Exchange (IDX). Among investor communities (institutional or individual), the research is expected to provide a keener understanding of the REIT behavior, especially with respect to cross-listed assets.

The ensuing sections are organized as follows. Section 2 provides the literature review pertaining to the determinants used in this study, Section 3 describes the data, methodology, and model, Section 4 presents the results of statistical testing, and Section 5 provides the conclusions, limitations, and input for further research.

LITERATURE REVIEW

This section contains a literature review of previous research dealing with cross-listing, macroeconomic determinants, and internal determinants.

CAPM, APT, and Other Conceptual Theories

Sharpe (1964), Lintner (1965), and Mossin (1966) introduced the key classical model of security pricing known as the CAPM. The model predicts that market beta is sufficient to describe cross-sectional expected returns. Despite failing in numerous empirical tests (Fama & French, 2008), CAPM is still popular because of its simplicity in a variety of situations.

APT was originally developed by Ross (1976). The factor beta in APT is derived through a linear regression of historical security returns on the determinants being evaluated. Unlike CAPM (with its market index), APT does not suggest the determinants—the number and nature of which are likely to change over time and between markets. APT differs from the CAPM in that it is less limiting in its assumptions. In some ways, the CAPM may be considered an "exceptional case" of the APT in that the securities market line represents a single-factor model linked to the asset price. One of APT's disadvantages is that the choices

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

(and number) of variables used in the model are uncertain. Most scholars use three to five variables, but the variables selected have not been empirically robust. In many instances, the CAPM, as a model to estimate expected returns, has empirically outperformed the more advanced APT (French, 2017). Nonetheless, both CAPM and APT remain the two leading models of security pricing.

Chen, Roll, and Ross (1986) introduced five macroeconomic determinants found to be significant in explaining the changes in expected security returns: the unanticipated inflation rate, change in expected inflation rate, unanticipated changes in the term structure, unanticipated change in risk premium, and unanticipated change in the growth rate of industrial production (GNP).

Critics of CAPM continuously cited by researches include Fama and French (1992) and Fama and French (2008). Market beta fails to predict stock returns (especially cross-sectional ones), particularly after introducing firm-specific variables (e.g., size and book-to-market equity). Later, FF added other variables, namely, profitability and investment (Fama & French, 2014) and introduced the five-factor model.

Therefore, seven determinants were settled upon for use in this research. The first is the stock market index (stimulated by CAPM); three macroeconomic variables, namely, inflation, property price index, and exchange rate (stimulated by APT); and three firm-specific variables, namely, net assets, distributable income, and the gearing ratio (stimulated by FF).

Stock Market Index

Hoesli and Reka (2015) empirically proved that a contagion effect occurs between REITs and stocks in the USA. They also found that this phenomenon was initiated by behavioral mechanisms from investors' sentiment and liquidity dynamics. The research by Huang and Wu (2013) showed that REITs and stocks are interdependent and investors are willing to pay the switching fee.

Li and Wang (1995) verified that stock and REIT returns are related. Karolyi and Sanders (1998) showed that the stock index positively related to the REIT index. Hsieh and Peterson (1997) stated, concerning US REITs, that risk factors affecting REIT returns are related with factors affecting the stock market and bonds.

Inflation

Simpson et al. (2007) concluded that inflation effects are caused by asymmetric expectations between market participants and monetary policy following inflation itself. Glascock et al. (2002), Ewing and Payne (2005), Adrangi and Chatrath (2004), Chatrath and Liang (1998), and Chan et al. (1990) summarized that inflation has a negative relationship with REIT performance; therefore, REITs are not effective as an inflation

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

hedge. Ewing and Payne found that sudden changes in monetary policy, economic growth, and inflation actually lower REIT returns.

Mullaney (1998) also concluded that REIT changes and inflation run in opposite directions. This phenomenon happens because the lower inflation, the more interesting REIT returns will be—especially as share prices increase. However, the opposite effect occurs when inflation increases, where, as with stocks, share prices will go down. REITs, through their assets, can increase rental rates. Markets will likely accept such increases during inflationary periods. Higher inflation also tends to increase the value of the underlying asset since construction costs will likewise increase.

Property Price Index

Giliberto (1990), Ling and Naranjo (1999), and Clayton and Mackinnon (2001) studied the relationship between real property prices and real-estate-related security prices. They agreed that the REITs in the USA are influenced by the property price index. Nevertheless, the influence is quite small and insignificant.

Those researchers discovered that US REITs have the same characteristics as stocks and are least likely influenced by the fluctuation of their underlying property market prices. The research concludes that REITs have a diversification limit and cannot be direct substitutes for real property investments in a well-diversified portfolio. Later research by Pavlov et al. (2011) supported the aforementioned conclusion. REIT returns and property prices have a weak relationship, only significantly positive for the offices subsector. For the retail, residential, and industrial sectors, the relationship is weak and insignificant.

However, Hoesli and Oikarinen (2012) stated that, over the long run, the REIT market will be more related to real property than to stock. Therefore, REIT and direct real estate investment are ideal substitutions for long-term portfolio investments.

Exchange Rate

One of several studies concerning the exchange rate's influence on REIT returns is Yong et al. (2009). In their research regarding REITs in Australia (1990–2008), they found that exchange rate risk (AUD/USD) had a significant influence on A-REIT return fluctuations particularly during 2003–2008. This phenomenon was mainly due to more A-REITs choosing to diversify internationally, particularly in US property markets.

In the LMIRT case, all assets and operations are in Indonesia, wherein most of its revenue and nearly all of its costs are stated in Rupiah. Therefore, LMIRT is subject to both *translation* and *transaction* exposure (Eiteman, Stonehill, & Moffett, 2016).

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

Translation exposure occurs because all accounting reporting and annual asset valuations should be translated from Indonesian Rupiahs to Singapore Dollars prior to submission to the Singapore exchange authority every quarter. When IDR weakens against the SGD, the profits and asset valuations will be reduced and vice versa. Transaction exposure occurs when exchange rates fluctuate between the dividend announcement date and dividend payment date. On the basis of the foregoing two reasons (i.e., translation and transaction exposure), this research includes exchange rate (IDR/SGD) as one of the determinants.

Net Asset (Value)

Ong et al. (2011) studied the performance of Malaysia's REITs from 2005 to 2010 using net asset value (NAV) per unit as a determinant. Professor Ong stated that a security trading below its NAV has an expected potential price increase. Meanwhile, if the price of REIT is above its NAV, then the REIT is overvalued and thus has negative appreciation or decreasing price potential. NAV is a function of the net market value of the respective underlying property assets, divided by the total number of units issued.

Clayton et al. (2007) analyzed three methods of REIT pricing evaluation, including discounted cash flow (DCF), funds from operations (FFO), and NAV. Trading of REITs at premium or discounted prices is a result of investor sentiment. The latest research regarding the price ratio and NAV was conducted by Liow and Yeo (2018), who concluded that there is a short-term equilibrium between a real estate security's price and NAV (per share), and over the long term, the REIT price will fall back to its fundamental value. However, some research contradicts market efficiency theory. Lakonishok et al. (1993), Cooper et al. (2008), and Chen et al. (2008) stated that asset growth has a negative relationship with a security's returns.

Gearing Ratio

Ripain et al. (2016) identified in their case study (REIT Al-'Aqar KPJ Healthcare) that proxied NAV and dividend distribution per unit are both influenced by net income, company size, and gearing ratio (Debt-to-Equity Ratio). In their research of REITs in Malaysia (2006–2014), influence from three independent variables on NAV and dividend distribution had high coefficients of determination (R^2)—around 99%.

According to Mullaney (1998), besides profitability or payout ratio, the balance sheet quality of REITs also has an effect on REIT price changes. REITs with high amounts of leverage (gearing ratio) will also carry higher risk. REITs with high leverage will be more sensitive to interest rate changes. The company's cash flow will be impacted when

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

the interest rate increases and will significantly influence the dividend distribution and value of the REIT.

Distributable Income and Dividends

Classic theory about dividends and stock prices, called dividend irrelevance theory by Miller and Modigliani (1961), states that investors perceive capital gain distributions and dividend payout alike when they consider the investment return from a security. The only factor influencing valuation of a company is its earnings. However, more contemporary research has found different results.

Said et al. (2013) concluded that, besides external factors, internal factors such as size, gearing ratio, underlying properties value, NAV, FFO, and market-to-book-value ratio likewise influence REIT returns.

REIT assets are generally not affected by depreciation. Real estate or property assets fluctuate following the market. Henceforth, the industry developed a specific term to measure company profitability: FFO, net income adding back depreciation.

In Malaysia, Ong et al. (2011) found a positive relationship between distributable income and a REIT's unit price. Similar results were also found in Thuvara and Jain (2016) and Aamir and Shah (2011). Khan (2012) concluded, from the Pakistani stock market during 2001–2010 that a positive relationship applies to cash but not stock dividends the latter tending to have a negative relationship.

Some contradictions are found in Rahgozar and Rahgozar (2014). The descriptive statistics from the research show that average risks and return of non-dividend paying stocks are higher than dividend-paying ones. Safari (2009) stated that, in developed markets, there is a positive relationship between dividend yields and securities returns in bearish markets and a negative one during bullish periods. In developing markets (i.e., Malaysia), the relationship is *always* positive during *both* bull and bear markets. This inconsistency might be most interesting to international investors wanting to diversify their international portfolios in different countries.

METHODOLOGY, MODEL, AND DATA

Methodology

This research compares two *time series* of multiple regression panels using ordinary least squares (OLS). The first panel is composed of home country determinants (independent variables) and REIT LMIRT return changes (the dependent variable) in

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

IDR. The second one is composed of host country determinants (the independent variables or IVs) and REIT LMIRT return changes in SGD.

In the first panel, all IVs are converted into IDR. In the second, all IVs will become SGD. With this analysis, REIT returns will be analyzed as if LMIRT is dual-listed in Indonesia (the home country) and Singapore (the host country). The prices recorded in SGX will be converted into Rupiahs for first panel analysis. Net assets and income will be converted back to Rupiahs for first panel analysis.

Linear multiple regression using the OLS method has also been undertaken by several studies. Just to name a few: Hoesli and Reka (2015), Andiani (2014), Pavlov and Wachter (2011), Simpson et al. (2007), Swanson et al. (2002), Glascock et al. (2002), Allen and Madura (2000), Ling and Naranjo (1999), Chen et al. (1998), Chan et al. (1990), and Giliberto (1990).

To find out what are the significant IVs or determinants, the research applies the backward elimination method (Levine, Stephan, Krehbiel, & Berenson, 2008). The regression starts with all IVs and then eliminates one IV at a time, whose *p*-value is highest and is greater than the 0.05 significance level (α). This step continues until the regression has all significant IVs (*p*-value < 0.05).

After completing the multiple regressions, the results of the two panels are compared, and the following question may be answered: Which panel can explain more changes in LMIRT returns: the panel from the home country or the one from the host country? Quarterly data were collected starting from the second quarter of 2008, running through the second quarter of 2017 (37 observations).

Model

This research starts with the multifactor pricing model introduced by Ross (1976) with APT. The risk factors of a security can be divided into two types, namely, systematic and non-systematic. Non-systematic risks can be reduced and even removed by portfolio diversification, whereas systematic risk cannot. Ross et al. (2010) stated that a security will be priced so that investors will attain a return equal to two components: the risk free rate (r_f) plus a risk premium. The risk premium is determined by multiplying a coefficient (β) by a return benchmark like a market index ($E(r_M)$).

$$E(r) = r_f + \beta\,[E(r_M) - r_f] \quad (1)$$

E(r):	Expected return of security	β:	Coefficient of risk premium
r_f:	Risk-free rate	$E(r_m)$:	Expected market return.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

Later, the risk premium may also be extended to several other factors besides the stock market index. Hence, the return expectations of security Q will follow the following linear equation:

$$E(r_Q) = r_f + \beta_1 [E(r_1) - r_f] + \beta_2 [E(r_2) - r_f] + \ldots + \beta_k [E(r_k) - r_f] \quad (2)$$

$$E(r_Q) - r_f = + \beta_1 RP_1 + \beta_2 RP_2 + \ldots + \beta_k RP_k \quad (3)$$

$$ER_Q = \beta_1 RP_1 + \beta_2 RP_2 + \ldots + \beta_k RP_k \quad (4)$$

$E(r_Q)$:	Expected return from security Q	r_f:	Risk-free rate
ER_Q:	Expected premium return of security Q	$E(r_n)$:	Expected return of factor n
β_n:	Coefficient of risk premium of factor n	RPn:	Risk Premium of factor n.

Expected returns of LMIRT (stated in Rupiah) are denoted as $\widehat{LMIRT}_{(Rp)}$ for the home country panel and $\widehat{LMIRT}_{(S\$)}$ for the host country one. The regressions find coefficients for each independent variable, including the significance of each IV in influencing LMIRT returns.

$$\widehat{LMIRT}_{(Rp)} = a + b_{ID_IHK} ID_{IHK} + b_{IDJKSE} ID_{JKSE} + b_{IDProp}\, ID_Prop + b_{SGD.IDR} SGD.IDR + b_{lnNA} \ln_NA(Rp) + b_{lnInc} \ln_Inc(Rp) + b_{Gear} Gear \quad (5)$$

a =	*Intercept* of regression equation
$\widehat{LMIRT}_{(Rp)}$ =	Quarterly return of LMIRT (Rp)
b_{ID_IHK} =	Coefficient of quarterly changes of *Indeks Harga Konsumen* Indonesia/Inflation (ID_IHK)
ID_IHK =	Variable of quarterly changes of *Indeks Harga Konsumen* Indonesia (inflation)
b_{IDJKSE} =	Coefficient of quarterly changes in the Indonesian stock index/JKSE (ID_JKSE)
ID_JKSE =	Variable of quarterly changes in the Indonesian stock index (JKSE)
b_{IDProp} =	Coefficient of quarterly changes in Indonesia's property price index (ID_Prop)
ID_Prop =	Variable of quarterly changes of Indonesia's property price index
$b_{SGD.IDR}$ =	Coefficient of quarterly changes in the exchange rate: SGD against IDR
SGD.IDR =	Variable of quarterly changes in the exchange rate SGD against IDR
$b_{lnNA(Rp)}$ =	Coefficient of quarterly changes of natural logarithm of net assets (*ln_NA(Rp)*)

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

$ln_NA(Rp)$ = Variable of quarterly changes of natural logarithm of net assets (IDR)
$b_{lnInc(Rp)}$ = Coefficient of quarterly changes of the natural logarithm of distributable income ($ln_Inc(Rp)$)
$ln_Inc(Rp)$ = Variable of quarterly changes of natural logarithm of distributable income (IDR)
b_{Gear} = Coefficient of quarterly changes in the LMIRT gearing ratio
$Gear$ = Variable of quarterly changes in the LMIRT gearing ratio.

Meanwhile, for the host country panel of determinants, the regression's linear equation formula may be written as follows:

$$\widehat{LMIRT}_{(S\$)} = a + b_{SG_CPI}SG_CPI + b_{SG_{STI}}SG_STI + b_{SG_{Prop}}SG_Prop + b_{IDR.SGD}IDR.SGD + b_{lnNA(S\$)}ln_NA(S\$) + b_{lnInc(S\$)}ln_Inc(S\$) + b_{Gear}Gear \quad (6)$$

a = Intercept of the regression equation
$\widehat{LMIRT}_{(S\$)}$ = Quarterly returns of LMIRT (S$)
b_{SG_CPI} = Coefficient of quarterly changes in Singapore's consumer price index/Inflation (SG_CPI)
SG_CPI = Variable of quarterly changes in Singapore's consumer price index/Inflation
b_{SG_STI} = Coefficient of quarterly changes in Singapore's stock index (Straits Times Index)
SG_STI = Variable of quarterly changes in Singapore's stock index (Straits Times Index)
b_{SG_Prop} = Coefficient of quarterly changes in Singapore's property price index (SG_Prop)
SG_Prop = Variable of quarterly changes in Singapore's property price index
$b_{IDR.SGD}$ = Coefficient of quarterly changes of exchange rate IDR against the SGD
IDR.SGD = Variable of quarterly changes of exchange rate IDR against the SGD
$b_{NA(S\$)}$ = Coefficient of quarterly changes in the natural logarithm of net assets (ln_NA(S$))
ln_NA(S$) = Variable of quarterly changes of natural logarithm of net assets (SGD)
$b_{lnInc(S\$)}$ = Coefficient of quarterly changes to the natural logarithm of distributable income (ln_Inc(S$))
ln_Inc(S$) = Variable of quarterly changes to the natural logarithm of distributable income (SGD)
b_{Gear} = Coefficient of quarterly changes in the LMIRT gearing ratio
$Gear$ = Variable of quarterly changes in the LMIRT gearing ratio.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

Data of the Home Country's (Indonesia) Macroeconomic Panel

Inflation (*ID_IHK*), the first Indonesian macroeconomic determinant (or independent variable), was derived by calculating the rate of change/percentage change in the quarterly consumer price index/IHK (*Indeks Harga Konsumen*). The data of IHK were collected from *Badan Pusat Statistik* (Statistics Indonesia), downloaded from their website www.bps.go.id.

The next determinant is the stock index, *Jakarta Composite Index* (^JKSE). The values used are the adjusted closing price from the last trading day of each quarter. The Jakarta Composite Index (JCI) was introduced on April 1, 1983, as a market indicator of all listed stocks on the exchange. During that time, the number of listed stocks was 13 (Bursa Efek Indonesia, 2016).

For the property price index, the study analyzes the *Indeks Harga Properti Residensial* (IHPR) released quarterly by the Bank of Indonesia (the country's central bank). This index covers 13 major cities in Indonesia plus greater Jakarta.

Data from the Host Country's Macroeconomic Panel

From the host country, quarterly inflation was derived from the changes in the consumer price index (CPI) issued by the Singapore Department of Statistics. Like the other determinants, CPI figures were gathered from the second quarter of 2008 to the second quarter of 2017.

The next independent variable is the Straits Times Index (SGX) or stock index. This index covers all stocks listed on the SGX. SGX is jointly calculated by the Financial Times Stock Exchange (FTSE), Singapore Press Holdings, and the Singapore Exchange (SGX).

For property prices, this research used the index of transacted residential prices, both on-ground or within a high-rise condominium, gathered from the Singapore Real Estate Exchange (SRX™). This exchange records transacted prices of residential properties in Singapore. SRX is software owned by StreetSine Technology Group, a subsidiary of Singapore Press Holdings (SPH), the biggest media company in Singapore, which also publishes *The Straits Times* daily and *The Business Times* (Singapore Real Estate Exchange, 2018). In calculating the index, SRX uses a hedonic regression method, combining geospatial data and transaction data from registered real estate agents and the Urban Redevelopment Authority (Singapore's land use planning and conservation governance).

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

Hypothesis

From the previous literature review, we arrived at the research summary and hypotheses.

H_1: *The independent variables of the home country significantly influence the returns of REIT LMIRT (in IDR)*

H_2: *The independent variables of the host country significantly influence the returns of REIT LMIRT (in SGD)*

RESULTS AND DISCUSSION

Multiple Regression for the Home Country (Indonesia) Panel

Regression of the home country panel started with all seven IVs (changes in inflation/*ID_IHK*, changes in the stock index/*ID_JKSE*, changes in the price of properties/*ID_Prop*, changes in the SGD exchange rate against the IDR/*SGD_IDR*, changes in the natural logarithm of net assets stated in Rupiah/*ln_NA(Rp)*, changes in the natural logarithm of distributable income/*ln_INC(Rp)*, and changes in the gearing ratio/*GEAR)*.

With statistical add-ins from Microsoft Excel 2013, the results of regression 1 gave an adjusted R^2 of 39.29%, the highest *p*-value (the least significant) IV belonged to *SGD_IDR* (96.80%), and the lowest *p*-value (the most significant) belonged to *ID_JKSE* (changes in Indonesia's stock index).

After eliminating *SGD_IDR*, the regression started the second round with only six IVs left: *ID_IHK*, *ID_JKSE*, *ID_Prop*, *ln_NA(Rp)*, *ln_INC(Rp)*, and *GEAR*. The results of regression 2 improved the adjusted R^2 to 41.31%. The IV with the lowest *p*-value was the change in inflation, *ID_IHK* (75.22%), similar to previous regression's *p*-value (75.72%).

In the third, fourth, and fifth regressions, *ID_Prop*, *ln_INC(Rp)*, and *GEAR* were eliminated, and the adjusted R^2 rose to 42.92% by the end of the fifth regression.

After the sixth regression, which began with only *ID_JKSE* and *ln_NA(Rp)* left, both IVs had *p*-values lower than 5%, 0.00%, and 0.46%, so one may conclude that both IVs significantly influence changes in LMIRT returns at the 5% significance level. The coefficient of ID_JKSE is 0.8561, which means that it has a positive influence on LMIRT returns. Meanwhile, changes in the natural logarithm of net assets *(ln_NA(Rp))* have a negative coefficient of −25.5349, indicating an opposing relationship with LMIRT returns. The regression process can be summarized in the Table 1.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

Table 1. Results table of backward elimination multiple regression in the home country panel

	regression 1		regression 2		regression 3		regression 4		regression 5		regression 6		regression 7	
r2	51.10%		51.09%		50.93%		49.81%		47.68%		45.16%		30.33%	
adjusted r2	39.29%		41.31%		43.01%		43.54%		42.92%		41.93%		28.33%	
Coefficient of														
intercept	-0.0063		-0.0063		-0.0135		0.0112		0.0115		0.0181		0.0128	
ID_IHK	-0.6655		-0.6678		-		-				-		-	
ID_JKSE	0.9173		0.9216		0.9315		0.9216		0.8687		0.8561		0.7668	
ID_Prop	2.2247		2.2054		2.0981		-		-		-		-	
SGD_IDR	0.0246		-		-		-		-		-		-	
ln_NA(Rp)	-22.7682		-22.7594		-22.7877		-21.7904		-24.0030		-25.5349		-	
ln_INC(Rp)	-1.6431		-1.6371		-1.6717		-1.6588		-		-		-	
GEAR	0.0741		0.0730		0.0701		0.0755		0.0840		-		-	
P-Value of														
intercept	88.70%		88.44%		71.46%		60.65%		60.04%		40.11%		59.16%	
ID_IHK	75.72%		75.22%		-		-		-		-		-	
ID_JKSE	0.03%	***	0.03%	***	0.00%	***	0.00%	***	0.00%	***	0.00%	***	0.04%	***
ID_Prop	40.67%		39.49%		40.70%		-		-		-		-	
SGD_IDR	96.80%		-		-		-		-		-		-	
ln_NA(Rp)	1.73%	**	1.55%	**	1.39%	**	1.65%	**	0.75%	***	0.46%	***	-	
ln_INC(Rp)	29.59%		28.72%		26.89%		27.01%		-		-		-	
GEAR	32.29%		28.44%		29.18%		25.24%		20.22%		-		-	

Remarks: * = significant at α = 10%. ** = significant at α = 5%. *** = significant at α = 1%.
Source: Research Data Analysis (2018).

Hence, the multiple regression formula for the home country panel of *LMIRT(Rp)* returns can be written as follows:

$$\widehat{LMIRT}_{(Rp)} = 0{,}8561\,.\,ID_JKSE - 25{,}5349.\,ln_{NA(Rp)} \quad . \tag{7}$$

According to the above formula, if *ID_JKSE* increases 1%, then *LMIRT(Rp)* will also increase 0.8561% while keeping the other IV *ln_NA(Rp)* constant or unchanged. It is shown that LMIRT (Rp) has volatility below the market index (<1.0). For *ln_NA(Rp)*, an opposite relation with *LMIRT(Rp)* is a counter intuitive result. The higher the net asset changes are, the lower the return of *LMIRT(Rp)* will be. Increasing 1% of *ln_NA(Rp)* will reduce the return of LMIRT by as much as 25.5349%.

Multiple Regression Results for the Host Country Panel

The host country panel multiple regression also started with seven IVs: changes in inflation (*SG_CPI*), stock index or *Straits Times Index* (*SG_STI*), property prices in Singapore (*SG_Prop*), exchange rate of the Rupiah against the Singapore Dollar

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

(*IDR_SGD*), the natural logarithm of *Net assets* in Singapore Dollars (*ln_NA(S$)*), the natural logarithm of *distributable Income* (*ln_INC(S$)*), and the debt equity ratio (*gearing ratio*/*GEAR*).

After the first regression, the coefficient of multiple determination (adjusted R^2) stood at 74.37%. The lowest *p*-value of all seven IVs belonged to *SG_STI* (0.00%), followed by *IDR_SGD* (0.22%), *ln_NA(S$)* (0.93%), and *ln_INC(S$)* (4.16%), whereas the others had *p*-values higher than 5%: *SG_CPI* (72.55%), *GEAR* (44.54%), and *SG_Prop* (18.29%). Therefore, *SG_CPI*, whose *p*-value was the highest, was not included in the second regression. In regressions 2, 3, and 4, *GEAR*, *SG_Prop*, and *ln_INC(S$)* had *p*-values above 5%, so they were eliminated. In regression 5, only three IVs were included (*SG_STI*, *IDR_SGD*, and *ln_NA(S$)*) in the process. All of these IVs consistently maintained the *p*-values below 5%. Significant *p*-value increases did occur with *IDR_SGD*, but its value remained below 5% (0.04). Correspondingly, the intercept from host country panel had a significant *p*-value of 2.65%; therefore, the amount is non-zero.

Table 2. Results table of backward elimination multiple regression in the host country panel

	regression 1		**regression 2**		**regression 3**		**regression 4**		**regression 5**		**regression 6**		**regression 7**		**regression 8**	
r2	79.35%		79.26%		78.88%		77.33%		74.57%		63.19%		62.69%		60.18%	
adjusted r2	74.37%		75.11%		75.47%		74.50%		72.26%		61.03%		60.49%		59.04%	
Coefficient of																
intercept	0.0329		0.0302		0.0314		0.0407		0.0381		0.0272		0.0181		0.0188	
SG_CPI	-1.1297		-		-		-		-		-		-		-	
SG_STI	1.0988		1.1125		1.1274		1.2884		1.2561		1.2350		1.4014		1.3365	
SG_Prop	0.8283		0.7039		0.7292		-		-		-		-		-	
IDR_SGD	-1.6668		-1.7407		-1.6467		-1.8126		-1.6861		-0.6689		-		-	
ln_NA(S$)	-13.7957		-14.5068		-14.7618		-15.4811		-17.4843		-		-6.4673		-	
ln_INC(S$)	-1.6484		-1.5428		-1.5791		-1.3732		-		-		-		-	
GEAR	0.0409		0.0382		-		-		-		-		-		-	
P-Value of																
intercept	8.97%	*	8.35%	*	6.97%	*	1.47%	**	2.65%	**	16.49%		33.90%		32.91%	
SG_CPI	72.55%		-		-		-		-		-		-		-	
SG_STI	0.00%	***	0.00%	***	0.00%	***	0.00%	***	0.00%	***	0.00%	***	0.00%	***	0.00%	***
SG_Prop	18.29%		15.96%		14.15%		-		-		-		-		-	
IDR_SGD	0.22%	***	0.05%	***	0.05%	***	0.01%	***	0.04%	***	10.42%		-		-	
ln_NA(S$)	0.93%	***	0.28%	***	0.22%	***	0.16%	***	0.05%	***	-		13.95%		-	
ln_INC(S$)	4.16%	**	3.61%	**	3.04%	**	5.72%	*	-		-		-		-	
GEAR	44.54%		46.41%		-		-		-		-		-		-	

Remarks: * = significant at α = 10%. ** = significant at α = 5%. *** = significant at α = 1%.

Source: Research Data Analysis (2018).

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

The coefficient of each IV is +1.2561 for *SG_STI*, −1.6861 for *IDR_SGD*, and −17.4843 for *ln_NA(S$)*. The fifth regression had a coefficient of multiple determination of 72.26%, slightly less than the top value (74.50%) attained in regression 4. Thus, the regression model for the host country panel or changes of *LMIRT(S$)* can be written as follows:

$$\widehat{LMIRT}_{(S\$)} = 1.2561.\text{SG_STI} - 1.6861.\text{IDR_SGD} - 17.4843.\ln\text{_NA(S\$)} + 0.0381. \quad (8)$$

Increasing the value of *SG_STI* by 1% will increase the return of *LMIRT(S$)* by 1.2561% (high volatility), assuming that other IVs are held constant. For *IDR_SGD*, an appreciation of SGD against IDR by 1% will reduce (opposite direction) the return of *LMIRT(S$)* by 1.6861% (high volatility), also assuming that all other variables are held constant. Like the home country panel, an increase in net assets *(S$)* also created opposite direction inflation in the returns of *LMIRT(S$)*. An increase of 1% in the natural logarithm of net assets will reduce the return of LMIRT(S$) by as much as 17.4843%.

DISCUSSION

From the above regression tests in Table 3, we can observe that the host country panel provides better simulation of LMIRT return predictability (i.e., a higher adjusted R^2). The adjusted R^2 of the home country regression panel is 41.93%, whereas that of the host country regression panel is 72.26%.

The following argument regarding independent variables (both significant and insignificant) will be discussed from the point of view of the host country panel. For inflation, the research result does not support Mullaney (1998), Ewing and Payne (2005), and Hao et al. (2016). All of these previous studies concluded that inflation has opposite influence on REIT returns. This anomaly might have been anticipated because inflation in the host country fluctuates in a narrow range (−1.4% and +1.4% quarterly); therefore, home country inflation was still in the range of the expected inflation rate. This estimate is supported by Chan et al. (1990), who concluded that only unexpected inflation would influence (negatively) the changes in a REIT's returns.

Unlike the research data pool, the period of research and method (empirical and case study) may also cause a different conclusion in the inflationary determinant.

For property price determinants, this study supports previous research, like Ling and Naranjo (1999) and Giliberto (1990), whose conclusions state that changes in a property's price will not influence REIT returns unless it has to do with the office space sector (Pavlov & Wachter, 2011). The result also supports Topintzi, Chi, and Hobbs (2008), who concluded that property investment has a distinctive benefit since it features a low correlation with other asset classes (i.e., stocks, bonds, and even other REITs).

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

Table 3. Comparison of final regression results of home country panel/LMIRT(Rp) and host country panel/LMIRT (S$)

	LMIRT(Rp)	***LMIRT (S$)***	
R^2	45.16%	74.57%	R^2
adjusted r^2	41.93%	72.26%	*adjusted* R^2
Coefficient			**Coefficient**
intercept	-	0.0381**	***Intercept***
ID_JKSE	0.8561***	1.2561***	***SG_STI***
ln_NA(Rp)	−25.5349***	−17.4843***	***ln_NA(S$)***
-	-	−1.6861***	***IDR_SGD***

** = significant at α = 5%. *** = significant at α = 1%.

Source: Research Data Analysis (2018).

Distributable income/earnings/dividends or FFO, according to Mullaney (1998), influence the unit price of a REIT. Distributable income is an important factor in REIT valuation with the dividend discount model. Since most REITs are obliged to distribute most of their income (≥90%), generally increasing distributable income will increase the dividends and later will increase the valuation of the REIT. Ripain et al. (2016) concluded that *income* influences the performance of a REIT positively and significantly (in the same direction). Mohamad and Zolkifli (2014) found positive but not significant results between net income and REIT returns. This research concluded that distributable income is negative but insignificant in its influence on LMIRT returns.

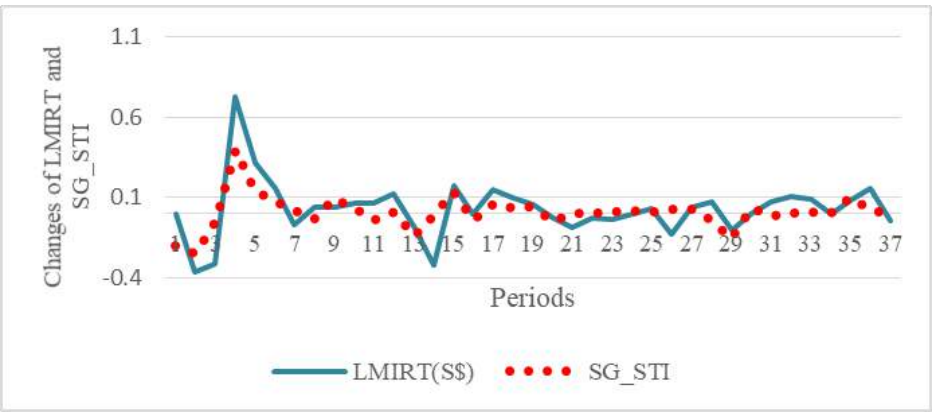
Even though a negative relation is only significant at α = 10%, the result supports Safari (2009), who summarized that in developed markets, dividends have a negative relationship with changes in securities returns, particularly during bullish periods. In Figure 3, the Singapore security market is in a bullish period, especially through the post-crisis recovery from 2009 to 2017. In bullish periods, investors tend to prefer that companies distribute fewer dividends but expect an aggressive growth in the stock's price (i.e., a capital gain). Undistributed cash dividends, however, cannot necessarily be reinvested at the same rate of sure market growth (under bullish circumstances).

Research by Ripain et al. (2016) and Said (2013) concluded that the *gearing ratio* also has a positive but insignificant influence. Their result opposed the findings of Mullaney (1998), who said that a higher gearing ratio means greater risk.

In the case of stock index changes, both panels show a significant positive relationship with LMIRT return. This result is conclusive with previous research, namely, Hoesli and Reka (2015), Huang and Wu (2013), Yong et al. (2009), Hsieh and Peterson (1997), and Y. Li and Wang (1995). All of them concluded that a significant positive relationship exists. Graphically, the relation between stock index changes and REIT return changes *LMIRT(S$)* can be observed in Figure 1.

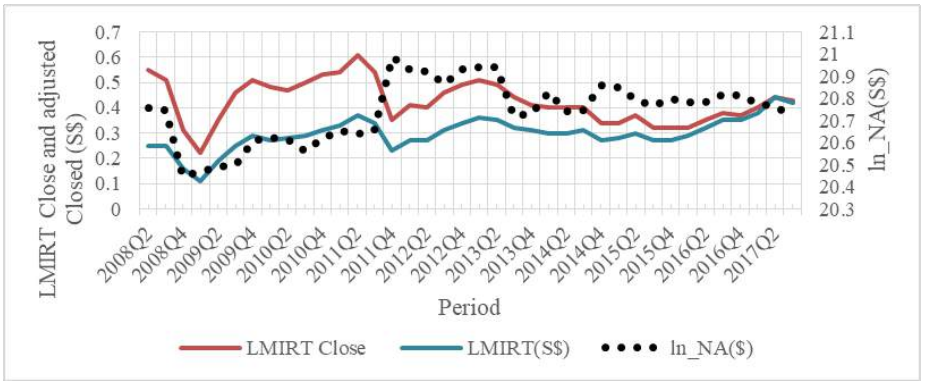
Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.



Source: Researcher's Data Compiling (2018).

Figure 1. Relation of Changes in Stock index (*SG_STI*) and *LMIRT(S$)*.



Source: Researcher's Data Compiling (2018).

Figure 2. Fluctuations of LMIRT (Close Price), LMIRT (S$, adjusted close), and ln_NA(S$).

Source: Yahoo Finance Compiled by Researhers (2018)

Figure 3. D5IU / LMIRT Inception Date was at the Bullish Period of STI

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

An anomalous finding in this study is that LMIRT(S$) has higher volatility (1.2561) compared to the stock index. A 1% increase in stock index (Straits Times Index) will increase LMIRT(S$) as much as 1.2561%. This result differs from the common understanding of REIT volatility. Generally, REITs are less volatile than the respective security market (Andiani, 2014; Serrano & Hoesli, 2008; Hudson-Wilson et al., 2005; Mullaney, 1998; K. C. Chan et al., 1990).

Changes in currency exchange rate are only significant in the host country panel. The regression coefficient is −1.6861 and is significant at the $\alpha = 1\%$ level.

This result is intuitively acceptable. All assets of LMIRT and revenue are denoted in IDR. The financial reports of LMIRT submitted to the SGX authority are simply translated from IDR to SGD. Any appreciation of SGD against IDR will promptly reduce the income and asset value.

The influence of the exchange rate to REIT return (especially with cross-listed assets) also concurs with previous research. Scherrer (2014) concluded that depreciation of the home country currency will also depreciate the value of the company. Foo (2006) also stated that in the case of cross-listed REITs, exchange rate fluctuation is one of the main risk factors. Yong et al. (2009), in their research in Australia, concluded that depreciation of the AUD (the host country) against the USD would positively influence A-REIT with USA assets.

A negative relationship between net assets and returns of LMIRT in both panels is seemingly counter intuitive and against the efficient markets hypothesis (Figure 2). However, similar results were also concluded in several studies by Lakonishok, Shielfer, and Vishny (1993), Cooper, Gulen, and Schill (2008), and Chen et al. (2008).

On the basis of previous research, the negative significant relationship between net assets and LMIRT returns can be explained by the following possibilities:

1. *Type 1 mispricing*, excessive expectations derived from historical extrapolation of asset growth. According to Lakonishok et al. (1993) and Wen (2013), asset growth can cause mispricing or systematic risk.
2. *Type 2 mispricing*. Berk et al. (1999) concluded that, in general, assets are less risky than the growth option. A company's value is the accumulation of total assets and potential growth. When assets grow, the growth option decreases, the risk rate is reduced, and expected returns are diminished.
3. *Type 3 mispricing*. According to T. Li (2016), financing timing, like initial public offerings (IPOs), is often conducted during bullish or overpriced markets. Afterward, the price is corrected, and although assets tend to have increased, the unit price decreases.
4. Possibility of assets being overpriced because assets are being valued by unique factors (i.e., the hedonic model). Valuation overpricing gradually adjusts itself and reverses its value trend against the returns of a REIT. Theoretically, the

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

hedonic model is based on the model of Lancaster (1966) and Rosen (1974), who introduced the theory of hedonic pricing. This theory is widely used in pricing model for property objects such as land, houses, or shopping malls.

5. Cointegration of the price, NAV, and short-term cointegration suggest that the price of a real estate security will be rationally adjusted with the net asset value. Moreover, over the long-term, security prices will fall back to their fundamental values based on the underlying asset (Liow & Yeo, 2018).
6. According to Chen et al. (2008), asset, growth can have a negative relationship with the security's price if there is a financial market inefficiency in some respective market, at least in terms of financial resource allocation between the company and inefficiencies found in some investment opportunities.

On the basis of the influencing determinants, the research supports the CAPM, proving that, on both panels, the market index contributed significantly to changes in returns of the LMIRT. In the extended regression of panels (Table 1 and Table 2), market indices (JKSE and STI) have a *p*-value < 1%. This research also supports the APT model and FF model. Additional macroeconomic and firm specific variable(s) were proven to be significant and increase the determination of the regression formula. In the Singapore panel, the determination rate increased from 59.04% (*SG_STI* only) to 72.26% (including *IDR_SGD* and *ln_NA(SGD)*). In the Indonesian panel, the determinant rose from 28.33% (ID_JKSE only) to 41.93% (including *ln_NA(Rp)*). One additional firm-specific variable (net assets) proved to be a significant determinant in both panels. An additional macroeconomic factor, the exchange rate, as a representation of the APT model, proved to influence and improve the coefficient of multiple determination of the Singapore panel. However, in the Singapore panel, net assets are significant only when the regression includes *SG_STI* and *IDR_SGD*.

RESULTS AND DISCUSSION

Conclusion

Therefore, the hypothetical questions of this study, based on the result of the analysis, can be answered as follows:

a. The panel determinants of the host country (Singapore) can explain the changes of REIT LMIRT return with a higher coefficient of determination compared to the panel from the home country (Indonesia). Although the assets, revenues, and costs of LMIRT are based in Indonesia, the changes in returns can be better explained by the panel from the host country.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

b. Out of the seven variables of the home country panel, only the stock index (*ID_JKSE*) and changes in net assets (*ln_NA(Rp)*) had a significant influence on LMIRT(Rp) returns. The stock index (*ID_JKSE*) had a positive relationship, and net assets had a negative one. The remaining five determinants were insignificant in influencing the returns of *LMIRT(Rp)*. The results of *ID_JKSE* and *ID_Prop* coincide with previous studies.
c. For host country panel determinants, three determinants, namely, stock index (*SG_STI*), changes in exchange rate (*IDR_SGD*), and changes in net assets (*ln_NA(S$)*), significantly influenced the changes of *LMIRT(S$)*'s returns. The remaining four determinants were insignificant in terms of influencing changes in *LMIRT(S$)*'s returns. Stock index/Straits Times Index had a positive influence, and changes in net assets had a negative influence. For the exchange rate, the relationship is negative. The results of *SG_STI*, *SG_Prop*, and *IDR_SGD* are conclusive with previous studies.
d. Although the market index is significant in explaining changes in returns, additional macroeconomic determinants and firm-specific variables increase the determination of the regression formula. Thus, this research supports the APT and FF factor model (Table 4).

Table 4. Research summary of determinants

Determinants	**Previous Studies**	**Result (Indonesian Panel)**	**Result (Singaporean Panel)**
Stock index	POSITIVE -SIGNIFICANT	Idem	Idem
Inflation	NEGATIVE -SIGNIFICANT	Negative—Not Significant	Negative—Not Significant
Property price	Positive–Not Significant	Idem	Idem
Exchange rate (home country)	POSITIVE SIGNIFICANT	Positive (Not Significant)	-
Exchange rate (host country)	NEGATIVE—SIGNIFICANT	-	Idem
Net asset	Inconclusive	NEGATIVE—SIGNIFICANT	NEGATIVE—SIGNIFICANT
Distributable Income	Inconclusive	Negative—Not Significant	Negative—Not Significant
Gearing Ratio	Inconclusive	Positive—Not Significant	Positive—Not Significant

Source: Research's Result (2018).

RESEARCH LIMITATION

This research only considered one REIT, Lippo Malls Indonesia Retail Trust (LMIRT). On the Singapore exchange (SGX), there are several REITs with similar characteristics coming from other countries. There is a possibility that the REITs may

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

display a different behavior toward the same determinants in each respective country. There are also several determinants or factors that have not been observed in this research, such as investors' sentiments, types of trading activities (informed, uninformed, or noise trading), and trading volume (liquidity).

RECOMMENDATIONS

The following recommendations may be offered for academicians, property developers, regulators, and investors:

a. *Academics.* Further research regarding some anomalies and gaps can be explored, namely, the effect of other determinants (i.e., bonds, interest rate changes, and trading volume), cointegration of price and NAV, volatility of cross-listed assets in a REIT, and negative relationship between asset growth and REIT returns.
b. *Property developers.* Developers who are planning to undertake corporate actions related to REITs may anticipate the timing, market response, and behavioral changes (in response to changes in several factors). Such corporate actions include a REIT's IPO, asset acquisitions, and unit splits.
c. *Stock market authority.* Authorities or regulators (especially in less-developed markets) can learn how a cross-listed REIT behaves in response to changes in the stock index. Exchange leaders can also be encouraged to stimulate companies to enter the REIT market by creating conducive regulations. Authorities should be aware that companies have the option to list securities in another market if the domestic or home country REIT market is not attractive.
d. *REIT investors* (whether individuals or institutions). Investors currently holding or planning to purchase a REIT with cross-listed assets can anticipate changes in unit price by monitoring the trend of significantly influential determinants (stock index, net assets, and the exchange rate), especially in the host country. Some results in this research (e.g., volatility and direction of influence) can also be part of their consideration in creating an efficient portfolio.

REFERENCES

Aamir, M., & Shah, S. (2011). Dividend Announcements And The Abnormal Stock Returns For The Event Firm and Its Rivals. *Australian Journal Of Business Management, 1*(8), 72–77.

Adrangi, B., & Chatrath, A. (2004). REIT Investments and Hedging against Inflation. *Journal of Real Estate Portfolio Management*.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

Allen, M. T., & Madura, J. (2000). REIT Characteristics and the Sensitivity of REIT Returns. *Journal of Real Estate Finance & Economics*. https://doi.org/10.1023/A:1007839809578.

Andiani, P. (2014). *Imbal Hasil dan Karakteristik (REITS)*. [*Return and Characteristic (REITS)*]. Universitas Indonesia.

Bodie, Z., Kane, A., & Marcus, A. J. (2011). *Investments* (10th ed.). McGraw-Hill Education.

Bursa Efek Indonesia. (2016). *IDX Fact Book* 2016, pp 200.

Chan, K. C., Hendershott, P. H., & Sanders, A. B. (1990). *Risk and Return on Real Estate: Evidence from Equity REIT*s.

Chatrath, A., & Liang, Y. (1998). REITs & Inflation: A Long-Run Perspective. *Journal of Real Estate Research*.

Chen, N. F., Roll, R., & Ross, S. A. (1986). Economic Farces and Stock Market. *The Journal of Business*. https://doi.org/10.1016/j.jempfin.2005.09.001.

Chen, S. J., Hsieh, C., Vines, T. W., & Chiou, S.-N. (1998). Macroeconomic Variables, Firm-Specific Variables and Returns to REITs. *Journal of Real Estate Research*, *16*(3), 269.

Chen, S., Yao, T., Yu, T., & Zhang, T. (2008). Asset Growth and Stock Returns : Evidence from the Pacific-Basin Markets. *Pacific Basin Finance Journal*, *19*(April), 115–139.

Clayton, J. F., & Mackinnon, G. (2001). The Time-Varying Nature of the Link between REIT, Real Estate and Financial Asset Returns. *Journal of Real Estate Portfolio Management*, *7*, 43–54.

Cooper, M. J., Gulen, H., & Schill, M. J. (2008). Asset growth and the cross-section of stock returns. *Journal of Finance*, *LXIII*(4).

Eiteman, D. K., Stonehill, A. I., & Moffett, M. H. (2016). *Multinational Business Finance* (Internatio). Pearson Education, Inc.

Ewing, B. T., & Payne, J. E. (2003). The Response of Real Estate Investment Trust Returns to Macroeconomic Shocks. *Journal of Business Research*, *58*(3 SPEC. ISS.), 293–300.

Fama, E. F., & French, K. R. (1992). The Cross Section of Expected Stock Returns. *Journal of Finance*, *47*(2), 427–465.

Fama, E. F., & French, K. R. (2008). The Capital Asset Pricing Model: Theory and Evidence. *Vasa*, (August 2003). https://doi.org/10.2139/ssrn.440920.

Fama, E. F., & French, K. R. (2014). A Five-Factor Asset Pricing Model. *Journal of Financial Economics*, *116*(1), 1–22. https://doi.org/10.2139/ssrn.2287202.

Foo, S. T. (2006). *Cross-border REITs: Opportunities and Challenges*.

French, J. (2017). Macroeconomic Forces and Arbitrage Pricing Theory. *Journal of Comparative Asian Development*, *16*(1), 1–20. https://doi.org/10.1080/15339114.2017.1297245

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

Geltner, D., Miller, N. G., Clayton, J. F., & Eighholtz, D. M. (2007). *Commercial Real Estate Analysis and Investments* (Internatio). Cengage Learning.

Giliberto, S. M. (1990). Equity Real Estate Investment Trusts and Real Estate Returns. *The Journal of Real Estate Research*.

Glascock, J. L., Lu, C., & So, R. W. (2002). REIT Returns and Inflation: Perverse or Reverse Causality Effects? *Journal of Real Estate Finance and Economics*, *24*(3), 301–317.

Hao, F., Chang, T. Y., Lee, Y. H., & Chen, W. J. (2016). The Impact of Macroeconomic Factors on the Real Estate Investment Trust Index Return on Japan, Singapore and China. *Investment Management and Financial Innovations*, *13*(4–1), 242–253.

Hoesli, M., & Oikarinen, E. (2012). Are REITs Real Estate? Evidence from International Sector Level Data. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.2034377

Hoesli, M., & Reka, K. (2015). Contagion Channels between Real Estate and Financial Markets. *Real Estate Economics*, *43*(1), 101–138.

Hsieh, C., & Peterson, J. D. (1997). Do Common Risk Factors in the Returns on Stocks and Bonds Explain Returns on REITs? *Real Estate Economics*.

Huang, M., & Wu, C. C. (2013). Economic Benefits and Determinants of Extreme Dependences between REIT and Stock Returns. *Review of Quantitative Finance and Accounting 44*(2):299-327 February 2013.

Hudson-Wilson, S., Gordon, J. N., Fabozzi, F. J., Anson, M. J. P., & Giliberto, S. M. (2005). Why real estate? And how? where? and when? *Journal of Portfolio Management*, *20*(20), 12–22.

Karolyi, G. A., & Sanders, A. B. (1998). The Variation of Economic Risk Premiums in Real Estate Returns. *Journal of Real Estate Finance & Economics*, *17*(3), 245–262.

Khan, K. I. (2012). Effect of Dividends On Stock Prices. In *Proceedings of 2nd International Conference on Business Management* (Vol. 2, pp. 141–148).

Lakonishok, J., Shielfer, A., & Vishny, R. W. (1993). *Contrarian Investment, Extrapolation and Risk. National Bureau of Economic Research*.

Lancaster, K. J. (1966). A New Approach to Consumer Theory. *The Journal of Political Economy*, *74*(2), 132–157. https://doi.org/10.1086/663168.

Levine, D. M., Stephan, D. F., Krehbiel, T. C., & Berenson, M. L. (2008). *Statistics for Managers: Using Microsoft Excel* (Fifth). Prentice Hall.

Li, T. (2016). Empirical Research of Asset Growth and Future Stock Returns Based on China Stock Market. *Management Science and Engineering*, *10*(1), 33–37.

Li, Y., & Wang, K. (1995). The Predictability of REIT Returns and Market Segmentation. *Journal of Real Estate Research*, *10*(September), 471.

Ling, D. C., & Naranjo, A. (1999). The Integration of Commercial Real Estate Markets and Stock Markets. *Real Estate Economics*, *27*(3), 483.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

Lintner, J. (1965). The Valuation of Risk Assets and the Selection of Risky Investments in Stock Portfolios and Capital Budgets. *The Review of Economics and Statistics*, *47*(1), 13. https://doi.org/10.2307/1924119.

Liow, K. H., & Yeo, S. (2018). Dynamic Relationships between Price and Net Asset Value for Asian Real Estate Stocks. *International Journal of Financial Studies*, *6*(28).

Miller, M. H., & Modigliani, F. (1961). Dividend Policy, Growth and The Valuation of Share. *Journal of Business*, *XXXVI*, 411–433. https://doi.org/10.1086/521238.

Mohamad, N. E. A. B., & Zolkifli, I. A. Bin. (2014). The Determinant Factors of Real Estate Investment Trust (REIT)'s Performance: Evidence from Asian REITs. *Incdonesia Capital Market Review*.

Mossin, J. (1966). Equilibrium in a Capital Asset Market. *Econometrica*, *34*(4), 768.

Mullaney, J. A. (1998). *REITs Building Profitss with Real Estate Investment Trusts*. John Wiley & Sons, Ltd.

Ong, T. S., Teh, B. H., & Chong, M. P. (2011). A Study on The Performance of Malaysian Real Estate Investment Trusts From 2005-2010 by Using Net Asset Value Approach. *International Journal of Economics and Research*, *2*(1), 1–15.

Pavlov, A. D., & Wachter, S. M. (2011). REITS and Underlying Real Estate Markets: Is There a Link? *SSRN Electronic Journal*.

Rahgozar, R., & Rahgozar, N. D. (2014). Returns of Dividend vs. Non-Dividend-Paying Stocks and Their Relations With Financial Distress and Market Risk Measures. *Journal of Finance Issues*, (2012).

Ripain, N., Wajhi Ahmad, N., & Suraya Wan Hassin, W. (2016). *Factors Affecting The Performance of Real Estate Investment Trust in Malaysia: A Case of Al-'Aqar KPJ REIT*, (3), 978–967.

Rosen, S. (1974). Hedonic Prices and Implicit Markets: Product Differentiation in Pure Competition. *The Journal of Political Economy*, *82*(1), 34–55.

Ross, S. A. (1976). The Arbitrage Theory of Capital Asset Pricing. *Journal of Economic Theory*, *13*, 341–360.

Ross, S. A., Westerfield, R., & Jaffe, J. F. (2010). *Corporate Finance* (Ninth). McGraw-Hill/Irwin.

Safari, M. (2009). Dividend Yield and Stock Return in Different Economic Environment: Evidence from Malaysia. *Munich Personal RePEc Archive*.

Said, R., Daud, M. N., & Olanrele, O. O. (2013). *A Study of REIT Performance and its Acceptability as Alternative Source of Fund to Direct Real Estate Finance in Nigeria: Malaysia REIT as Benchmark.*

Scherrer, C. M. (2014). Cross Listing : Price Discovery Dynamics and Exchange Rate Effects. *Center for Research in Ecnonometric Analysis of Time Series*.

Serrano, C., & Hoesli, M. (2008). Are Securitized Real Estate Returns More Predictable than Stock Returns? *Swiss Finance Research Institute*, *08*(27).

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

Sharpe, W. (1964). Capital Asset Prices: A Theory of Market Equilibrium under Conditions of Risk. *The Journal of Finance*, *19*(3).

Simpson, M. W., Ramchander, S., & Webb, J. R. (2007). *The Asymmetric Response of Equity REIT Returns to Inflation.*

Singapore Real Estate Exchange. (2018). *SRX Property Index (SPI).* Retrieved April 12, 2018, from https://www.srx.com.sg/price-index#%0A

Swanson, Z. L., Theis, J., & Casey, K. M. (2002). REIT Risk Premium Sensitivity and Interest Rates. *The Journal of Real Estate Finance & Economics*, *Vol. 24*, *No. 3*, *24*.

Thuvara, P., P, B., & Jain, B. (2016). *Impact of Dividend Policy on Stock Return Behaviour*, *16*(1), 24–33.

Topintzi, E., Chi, H., & Hobbs, P. (2008). Moving Towards a Global Real Estate Index. *Journal of Property Investment & Finance*, *26*(4), 286–303.

Wen, Q. (2013). Asset Growth & Stock Market Returns: a Time-Series Analysis. *Goizueta Business School*, *1*(404).

Yong, J., Allen, D. E., & Lim, L. K. (2009). AREIT Returns from 1990-2008: A Multi-Factor Approach. In *World IMACS Congress and MODSIM09 International Congress on Modelling and Simulation* (pp. 1522–1529). Cairns, Australia.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:47.

SECTION 3: REPORTING, AUDITING, BUSINESS FINANCIAL PERFORMANCE

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:55.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:52:55.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 13

EFFECT OF CUSTOMS VALUE, COMPETENCE, RELIGIOSITY AND WEALTH OF THE AUDITOR ON CUSTOMS AUDIT FINDINGS

Teguh Setiyono and Fitriany Fitriany*
Department of Accounting, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This study aims to analyse the factors affecting customs audit findings in Indonesia. Those factors consist of a taxpayer dimension (i.e., customs value) and an auditor dimension (i.e., education, experience, religiosity and wealth).

Regression analysis was conducted on the research data. Data on customs value and customs audit findings were obtained from audit reports published by the Directorate General of Customs and Excise (DGCE). The variable of religiosity was measured using a Likert-scale questionnaire distributed to auditors. Customs value and education of the auditor have positive impact on the value of customs audit findings, while experience and religiosity have a negative impact on them. Religiosity strengthens the relationship between customs value and customs audit findings. Wealth has no effect on the value of customs audit findings. Research on audit quality in the field of import and export (customs audit) is still rare, especially when incorporating fraud theory. Customs value was measured based on the total customs value examined in the audit assignment, which is a more accurate measurement than measurement in other previous research. This research using religiosity and wealth variables have rarely been used in previous research.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

* Corresponding Author's E-mail: fitrianyamarullah@ui.ac.id.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:03.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 13

EFFECT OF CUSTOMS VALUE, COMPETENCE, RELIGIOSITY AND WEALTH OF THE AUDITOR ON CUSTOMS AUDIT FINDINGS

Teguh Setiyono and Fitriany Fitriany*
Department of Accounting, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This study aims to analyse the factors affecting customs audit findings in Indonesia. Those factors consist of a taxpayer dimension (i.e., customs value) and an auditor dimension (i.e., education, experience, religiosity and wealth).

Regression analysis was conducted on the research data. Data on customs value and customs audit findings were obtained from audit reports published by the Directorate General of Customs and Excise (DGCE). The variable of religiosity was measured using a Likert-scale questionnaire distributed to auditors. Customs value and education of the auditor have positive impact on the value of customs audit findings, while experience and religiosity have a negative impact on them. Religiosity strengthens the relationship between customs value and customs audit findings. Wealth has no effect on the value of customs audit findings. Research on audit quality in the field of import and export (customs audit) is still rare, especially when incorporating fraud theory. Customs value was measured based on the total customs value examined in the audit assignment, which is a more accurate measurement than measurement in other previous research. This research using religiosity and wealth variables have rarely been used in previous research.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

* Corresponding Author's E-mail: fitrianyamarullah@ui.ac.id.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:14.

Keywords: customs audit, customs audit findings, religiosity, wealth, fraud, audit quality

INTRODUCTION

A customs audit is an import and export control mechanism conducted by the Directorate General of Customs and Excise (DGCE). A customs audit's effectivity is measured by the nominal value of the audit finding: the bigger the nominal value of the audit finding, the more effective the customs audit. Customs audit findings are the condition that importer or exporter has paid less tax and/or customs duties than it should have paid according to prevailing law and regulation.

One of the mistakes that is made by taxpayers in the customs clearing process is an error in declaring the customs value of imported or exported goods. Two factors can cause this phenomenon, namely (1) the regulatory requirement to use the transaction value of imported goods as a customs value, and (2) the self-assessment system in the customs clearance process.

Setyaningrum (2012) used the magnitude of the audit finding as a proxy for audit quality in the Audit Board of Republic of Indonesia (BPK). Auditor independence can significantly affect an auditor's tendency to perpetrate fraud in the audit assignment. Auditor fraud can dilute the audit findings, for instance, if the auditor and auditee collude to cover up the true audit findings. Therefore, it becomes relevant to integrate fraud theory into the analysis of audit quality. The purpose of this research is to analyse the factors affecting customs audit quality based on fraud theory (Cressey, 1950) and audit quality theory (DeAngelo, 1981b).

The contributions of this study are 1) Prior research measured custom value by the total value of taxpayer customs two years prior to the audit report date. This approach is not always accurate because the scope of the customs audit does not cover the period of customs transactions for the previous two years. This study measures customs value based on the total customs value really examined in the audit assignment; 2) The use of variables of religiosity and the wealth of the auditors to explain the quality or value of customs audit findings. There has been no prior research in audit quality examining those variables; 3) Incorporating fraud theory (Cressey, 1950; Wolfe & Hermanson, 2004) and audit quality theory (DeAngelo, 1981b) to conduct customs audit quality analysis. Prior research has not yet integrated fraud theory and audit quality into research on the quality of customs audits.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:14.

THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

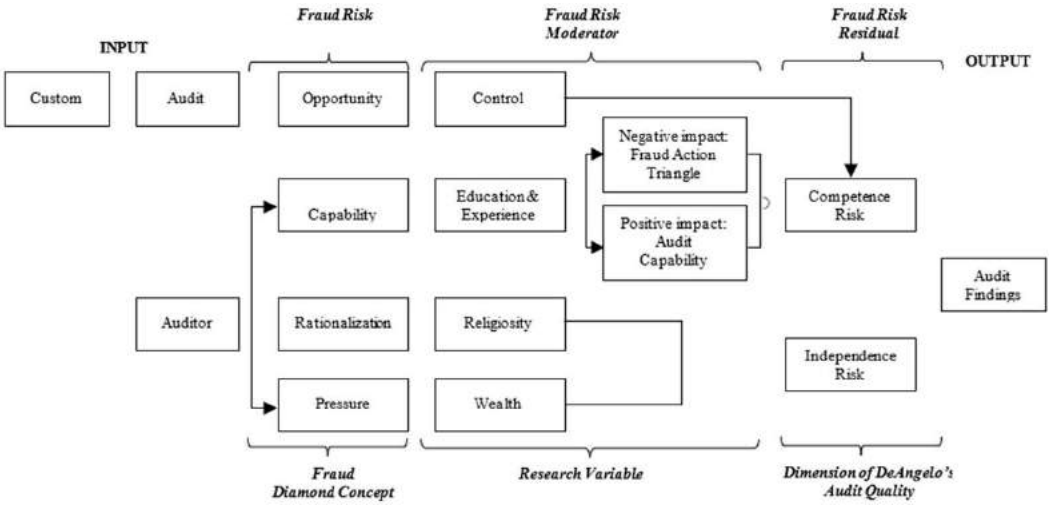


Figure 1. Theoritical Framework.

Customs Value

Customs audits are conducted to optimise State revenues in the form of audit findings from import duties, taxes in the framework of imports, and administrative sanctions in the form of fines. Each audit assignment is always initiated by targeting audit objects to select taxpayers who have the potential to make mistakes or violate customs regulations. Targeting the audit object is done based on risk management supervision that includes both inherent and control risks pertaining to customs control.

The type of error that is inherently high risk in the customs control system is the customs value error. It is caused by two main factors, namely the use of transaction value as a customs value and the self-assessment system. The transaction value is set according to the rules found in GATT (article VII), which includes the other costs associated with the purchase or delivery of goods and discounts that are common to the trading system. This causes an asymmetry of transaction value information between the taxpayer and DJBC (as customs supervisor) by placing the taxpayer in the dominant position. Such dominance causes some risk of error in the transaction value declaration, whether intentionally or not, to be higher and, thus, can cause higher audit findings.

Self-assessment in the customs procedure provides an opportunity for taxpayers to declare the value, quantity and type of imported goods, as well as to calculate their own customs duty and import taxes. From the perspective of fraud theory (Cressey, 1953; Wolfe & Hermanson, 2004), self-assessment provides an opportunity for taxpayers to commit fraud by declaring untrue information to gain some economic advantage.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:14.

Therefore, the use of the transaction value as a customs value and the self-assessment system become the conceptual basis for the customs value being positively correlated with the risk of error in customs control. Purwoko (2004) found that the customs value is positively and significantly correlated with customs audit findings. Sembiring (2015) also proved a positive correlation between the customs value and the customs audit findings. Based on the above explanation, we predict that:

H1: The greater the taxpayer's customs value resulting from being audited by the DGCE, the greater the audit findings.

Education

Wolfe and Hermanson (2004) added capability as an additional factor to the fraud triangle theory and said that even if the three elements of the fraud triangle are met by an individual, if he lacks the ability to commit fraud, fraud will not occur. The ability to commit fraud may increase as education increases since education is a process that can improve one's competence.

While education is one of the processes that increases competence (Bonner & Walker, 1994), at least from the viewpoint of fraud theory and audit quality theory, in reality it has the opposite effect. Competence allows an individual to perform their job effectively and efficiently, but competence can also increase the ability of an individual to commit fraud. The choice of auditors to either use their competencies in a positive or negative manner is influenced by many factors and can be conditional. Based on the above explanation, the hypothesis is two-tailed:

H2: The auditor's education level affects the value of customs audit findings.

Auditor Experience

Abdolmohammadi and Wright (1987) stated that inexperienced auditors make more significant errors in performing audits. Herliansyah and Ilyas (2006) found that auditor competence affects the ability of the auditor to distinguish between relevant and irrelevant information. Alim et al. (2007) stated that experience and knowledge have a significant effect on audit quality. It was mentioned further that the results confirm those of previous studies (Ashton, 1991; Choo & Trootman, 1991; Libby & Libby, 1989). Bonner and Walker (1994) argued that experience is also one of the processes that can improve individual competence. Therefore, the level of experience from the point of view of fraud theory and audit quality theory also has the opposite effect. This study assumes

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:14.

that the level of the auditor's experience may affect and/or moderate, positively or negatively, the value of customs audit findings.

H3a: The level of experience of the auditor influences the value of his customs audit finding.

H3b: The auditor's level of experience influences the relationship between customs values and the value of findings in a customs audit.

Religiosity

Welch, Tittle, and Grasmick (2006) said that the higher the level of religiosity, the more self-control the person has to resist actions that are considered to be socially deviant. Self-control has a mediating role in the relationship between religiosity and social conformity. Vitell et al. (2009) proposed that intrinsic religiosity will have a positive effect on the internalisation of moral identity. Moral identity is antecedent to one's ethical behaviours and, as cited in Trevino et al. (2006), Weaver (2006) stated that moral identity is an important construct for predicting ethical judgements, intentions and moral actions when one is faced with ethical issues.

Coleman (2013) found that the tendency to commit fraud by individuals can be influenced by the magnitude of religiosity. Religious individuals can still be tolerated with minor losses, but resistant to fraud which causes huge losses. The amount of customs value indicates the magnitude of losses incurred if the auditor is not independent. Therefore, the greater the value of customs, auditors with high religiosity tend to be more independent, thus, improving the quality of their audit assignment (value of audit findings).

H4a: The degree of religiosity of the auditor positively affects the value of customs audit findings.

H4b: The degree of religiosity of the auditor strengthens the positive relationship between the customs value and customs audit findings.

Wealth

According to DeAngelo (1981b) large audit offices are able to maintain independence better in auditing assignments because they have a large number of clients and overall have substantial revenues; therefore, there is no dependence on a particular client. The economic pressures of losing income on a single client are generally immaterial compared to the total income of the public accounting firm. That research

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:14.

provided the reason that corporate wealth encourages an independent attitude in the audit assignment.

Pressure is one of the factors that drive an individual to commit fraud (Cressey, 1950; Wolfe & Hermanson, 2004). Pressure is defined by non-shareable financial problems; however, according to Kranacher et al. (2011), pressure is not only limited to financial problems but includes money, ideology, coercion and entitlement, too. Coleman (1987) stated that wealth and success are more than merely goals but are already part of an individual's identity.

This study uses the assets owned by the DGCE auditor as a proxy for wealth. A higher level of the DGCE auditor's wealth indicates that he is more able to meet his needs so that there is a narrower gap between the expectations of needs and financial capabilities. According to fraud theory, rich individuals tend not to have financial problems. Therefore, the pressure one feels to commit fraud experienced by rich DGCE auditors is smaller than the pressure experienced by the poorer ones.

As Figure 1 shows, the hypothesis development framework is related to the wealth of auditors and the quality of customs audits. Pressure that, according to fraud theory, encourages auditors to perform fraud is moderated by the wealth owned by auditors. The negative moderation role of the auditor's wealth causes the residual fraud risk to become smaller since the drive to commit fraud is lessened. Fraud perpetrated by the DGCE auditors is caused by a lack of an independent attitude in auditing assignments where an individual enriches themselves, others or corporations—or to harm the state's finances or economy. A smaller residual fraud risk of the pressure dimension causes a higher level of DGCE auditor independence so that, according to DeAngelo (1981a), the quality of customs audits will increase. The wealth of the auditor will have a positive effect on the value of the audit findings. Based on the foregoing description, this study entertains the following hypothesis:

Dye (1993) states that the auditor's choice of audit quality will increase as his wealth grows. The auditor's wealth becomes the driving force to provide quality audits by increasing its independence in audit assignments. Dye (1993) also states that the external party's disadvantaged motivation over auditor information is higher if the auditor has an increasingly large nest egg. The higher motivation occurs because the auditor is deemed to have sufficient assets to replace the losses so that the more affluent auditors tend to avoid all forms of litigation demands through improving the quality of their work. In line with this, it is predicted that if the customs value is greater, the tendency of the rich auditor to reduce the value of the findings will be lower. In other words, if the value of customs is greater, rich auditors will increasingly tend to increase the audit findings because they wish to avoid litigation claims. Based on the foregoing description, this study contemplates the following hypothesis:

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:14.

H5a: Higher levels of auditor wealth positively influence the value of customs audit findings.

H5b: Higher auditor wealth strengthens the positive relationship between the customs value and customs audits findings.

RESEARCH METHODOLOGY

Models

$$lnAUDFIND = \alpha_0 + \alpha_1 LnCUSTVAL_i + \alpha_2 EDUC_i + \alpha_3 EXP_i + \alpha_4 REL_i + \alpha_5 WEALTH_i + \alpha_6 PRIORAUD_i + \alpha_7 PROF_i + \alpha_8 FAC_i + \varepsilon \quad (1)$$

$$LnAUDFIND = \beta_0 + \beta_1 LnCUSTVAL_i + \beta_2 EDUC_i + \beta_3 EXP_i + \beta_4 REL_i + \beta_5 WEALTH_i + \beta_6 CUSTVAL * EXP_i + \beta_7 CUSTVAL * REL_i + \beta_8 CUSTVAL * WEALTH_i + \beta_9 PRIORAUD_i + \beta_{10} PROF_i + \beta_{11} FAC_i + \varepsilon \quad (2)$$

AUDFIND = Audit findings
CUSTVAL = Customs value
EDUC = Education
EXP = Experience
REL = Religiosity
WEALTH = Wealth
PROF = Profile of the taxpayer based on the DGCE's profiling system
FAC = Customs facilities received by the taxpayer
PRIORAUD = Previous customs audit findings.

Samples and Operationalisation of Variables

The unit of analysis of this study is all audit reports published by the DGCE. The study uses audit reports published by the DGCE from January 1, 2014 to August 31, 2015. The final sample is 378; sample selection is summarised as follows:

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:14.

Table 1. Sample Selections

Audit reports published by the DGCE from January 1, 2014 to August 31, 2015		668
Incomplete data of customs value	(199)	
Incomplete data of religiosity	(48)	
Incomplete data of wealth	(23)	
Invalid data	(20)	
		(290)
Final Sample		378

Table 2. Variables Measurement

No	Variable	Code	Measurement	Reference
Dependent variable				
1.	Audit findings	*AUDFIND*	Nominal value of customs audit findings in the form of a natural logarithm.	Purwoko (2004); Arkan (2011); Sembiring (2015); Hartanto (2015).
Independent variable				
2.	Customs value	*CUSTVAL*	Total customs value in audit coverage in the form of a natural logarithm.	Purwoko (2004); Arkan (2011); Sembiring (2015); Hartanto (2015).
3.	Education	*EDUC*	Index, 1=SLTA; 2=Diploma III; 3=Strata 1; 4=Strata 2; and 5=Strata 3.	Cheng et al. (2013).
4.	Experience	*EXP*	Working period of customs auditor.	Setyaningrum (2015)
5.	Religiosity	*REL*	Likert scale 1–7. Value 1 indicates a low level of religiosity; value 7 indicates a high level of religiosity.	Cornwall, Albrecht, Cunningham, and Pitcher, (1986); Stack and Kposowa (2006)
6.	Wealth	*WEALTH*	Total assets owned by auditor and reported to the Corruption Eradication Committee (KPK) as a state official asset report (LHKPN).	-
Control variable				
7.	Previous audit	*PRIORAUD*	Dichotomous variable, 1=previous audit finding is bigger than current audit findings; and 0 = other.	-
8.	Profiles of taxpayer	*PROF*	Index, 1 = very high-risk taxpayer; 2 = high-risk taxpayer; 3 = medium-risk taxpayer; and 4 = low-risk taxpayer.	Sembiring (2015); Hartanto (2015).

Table 4 shows that R-squared of Models 1 and 2 are 0.246 and 0.292 respectively. The probability value of F (0.000) indicates that the models are good enough to be used to estimate the relationship between the independent variables and the dependent variable.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:14.

Table 3. Statistic Descriptive

Variable	Min	Max	Mean	Std. Dev
AUDFIND (Billion)	0,00	3.142,29	15,41	179,09
LN-AUDFIND	14.08	28,78	20,01	2,06
CUSTVAL (Billion)	0.01	858.826,26	4.578,27	44.419,10
LN-CUSTVAL	16.00	34,00	26,82	2,36
EDUC	2.00	4,00	3,20	0,63
EXP	7.00	25,00	17,07	4,74
REL	0.69	1,00	0,88	0,07
WEALTH (million)	5.36	3.126,89	707,33	595,11
VARIABLE DUMMY				
PRIORAUD	0,00	1,00	0,20	0,40
PROF	1,00	4,00	3,36	0,95
FAC	0,00	1,00	0,46	0,50

DISCUSSION

Customs Value

Table 4 shows the correlation coefficient between CUSTVAL and AUDFIND in Model 1 is 0.340 and the probability is 0.000. The regression results indicate that the customs value has a positive effect on the value of customs audit findings. Consistent with the regression results of Model 1, the CUSTVAL and AUDFIND correlation coefficient of 0.239 in Model 2 shows a positive correlation and a probability of 0.000. The customs value variable is operated in the form of a natural logarithm, so the coefficient has sensitivity meaning. The coefficient value of 0.239 is statistically significant and means that for every 1% increase in the customs value, there will be an increase in the value of the audit findings equal to 0.239%. The results reject the H0 of the first hypothesis formulation and conclude that the taxpayer's customs value is associated positively with the audit findings. These results are consistent with research predictions and with previous studies (Purwoko, 2004; Sembiring, 2015).

The results have two implications in relation to the customs control system. First, the targeting of the audit object should be carried out by considering the amount of customs value indicated by the taxpayer. Second, the DGCE should supervise the customs value adequately from the customs clearing processing stage. The policy of relying only on customs value control, which has high inherent risk, at the post-clearing stage is feared to be hampered by the availability of human resources.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:14.

Table 4. Correlation Coefficient

Variable	**Predsign**	**Model 1**			**Model 2**		
		Coeff.	Prob.	Sig.	Coeff.	Prob.	Sig.
CONSTANT		21.119	.000	***	20.157	.000	***
CUSTVAL	+	.340	.000	***	.239	.000	***
EDUC	+/-	.108	.032	**	.086	.083	*
EXP	+/-	−.102	.055	*	−.088	.095	*
REL	+	−.085	.065	*	−.079	.082	*
WEALTH	+	.066	.247		.100	.091	*
CUSTVAL * EXP	+/-				−3.153	.005	**
CUSTVAL * REL	+				3.980	.001	***
CUSTVAL * WEALTH	+				−.651	.188	
PRIORAUD	-	−.260	.000	***	−.254	.000	***
PROF	+	.137	.004	**	.135	.003	**
FAC	+	.063	.180		.055	.227	
R Square		.246			.292		
F (Prob.)		15.075 (.000)			13.740 (.000)		
Dependent variable: Ln AUDFIND = Audit findings.							

Education

The coefficient of correlation between *AUDFIND* and *EDUC* of Model 1, as shown in Table 4, has a value of 0.108 with a probability value of 0.032 and were consistent with correlation result. Thus we found that education has a positive effect on the customs audit findings. These results empirically prove Hypothesis 2.

The results of this study have two implications: first, the chief auditor has a significant role on the audit team that may affect the quality of the audit, so the role needs to be managed and developed properly. The important role of the chief of auditor is reflected in the description of the position as stipulated in DGCE regulation. The chief of auditor performs a very dominant role in the preparation of the audit plan and fieldwork activities. Any poor-quality work by the chief of auditor is likely to have a significant impact on audit quality deterioration. Second, education is more likely to have a positive influence on audit assignments. If the DGCE requires a high-quality audit, it is necessary for them to provide opportunities and facilitate auditors, especially those who are in the position of being chief auditor, to improve their education.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:14.

Experience

The regression results of Model 2 also show that the interaction between the customs value and auditor experience has a correlation of −3.153 and a probability of 0.005. The result of the regression proves that the level of experience negatively moderates the relationship between the customs value and the customs audit findings (i.e., H3b is proven).

The auditor's experience has the potential effect to improve the auditor's competence in performing audit assignments and at the same time may increase their capability to conduct, conceal and commit fraud. The negative impact of experience on customs audit findings shows that auditor competence formed by experience is more likely to increase the capability of the auditor to commit fraud.

The longer auditor's working period may increase the likelihood of a good relationship between the taxpayer and the auditor. This relationship has the potential to decrease the independence of the DGCE auditor in the assignment. This argument is based on Deis and Giroux (1992) which stated that the duration of the auditor tenure will decrease the audit quality. This outcome happens because longer audit tenure encourages the auditor to behave opportunistically in the assignment.

A long period of auditor tenure will also cause the auditor to become saturated. Shockley (1982) explains that the negative relationship between auditor tenure and audit quality occurs because the auditor is saturated (or complacent). In line with this explanation, Hartanto (2015) stated that the competence of the DGCE auditor (which was proxied by experience), did not contribute to audit quality due to fatigue.

The results of this study imply that the auditor's tenure negatively affects the audit findings. Either independence (DeAngelo, 1981b) or complacency (Shockley, 1982) is likely to be the main reason for this outcome. Therefore, the DGCE should consider the limits of maximum employment for an auditor and prepare the appropriate career path for the employee assigned this post.

The regression result of Model 2 shows the experiential variables (EXP) having a significant negative effect on the audit findings value and the customs value and experience interaction variables (CUSTVAL * EXP) also have a significant negative effect on the value of the audit findings. These results show that the experience of the auditor has a direct negative impact on the value of audit findings and weakens the relationship between customs value and audit findings.

The results of this study imply that the experience of auditors negatively affects the value of audit findings. Shockley (1982) states that the negative influence of tenure on audit quality is caused by the saturation factor (complacency). Saturation can lead to motivation, scepticism and accuracy of auditors decreased so that the ability to find violations will also be reduced. The DGCE needs to manage HR auditors well so that the impact of saturation can be mitigated. The DGCE needs to address regeneration of

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:14.

auditors, provision of advanced career paths for senior auditors, and an effective system of transfer of knowledge. Regarding the issue of independence, DGCE needs to have a monitoring and assignment system that can limit the assignment of auditors to the same taxpayer.

Religiosity

From Table 4, we conclude that religiosity has a negative effect on the customs audit findings (i.e., H4a is not proven), but strengthens the relationship between the customs value and customs audit findings (i.e., H4b is proven). A feasible explanation for this result is the possibility of the auditor having an extrinsic religiosity orientation.

Extrinsic religiosity is a religious orientation based on pragmatism, for example, using the dimension of religiosity for business purposes (Vitell et al., 2009). The tendency of extrinsic religiosity to be pragmatic leads to this orientation being a weak predictor of individual positive behaviour (Salsman et al., 2005). Research on the relationship between one's religion and depression shows that extrinsic religiosity is even associated with negative life behaviour (Smith et al., 2003).

The results showed that religiosity fails to reduce the auditor's rationalisation to commit fraud. If religious values are not internalised properly in the community, religiosity will not affect fraudulent behaviour. Baier and Wright (2001) examine the influence of religiosity on the deviant behaviour of individuals from two religious communities and the general public. In the religious communities, the level of individual religiosity has a greater influence in reducing the tendency of the individual to commit fraud.

Despite religiosity having a negative influence on the value of customs audit findings, Model 2 proves that religiosity positively moderates the relationship between the customs value and the customs audit findings. The influence of religiosity on customs audit findings is not constant but depends on the customs value. The customs value, in the customs audit context, reflects the risk of a taxpayer's offence or error; therefore, it can be concluded that the influence of religiosity becomes effective if the auditor is assigned to a high-risk taxpayer.

The results of this study imply that religiosity is not relevant to the consideration of the choice of auditors in each assignment. Religiosity, as one of the individual control systems, can be applied effectively if the value of religiosity has been internalised within the DGCE organisation. However, although the possibility of an extrinsic religious orientation does not affect or contradict positive behaviour, the pragmatic orientation of imaging motivation may be a control for the auditor to remain independent in the audit assignments pertaining to high-risk taxpayers.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:14.

The result of regression Model 2 shows the religiosity variable (REL) has a significant negative effect on the audit findings value and the interaction variable of customs value and religiosity (CUSTVAL * REL) has a significant positive effect on the value of the audit findings. Based on this, the religiosity of the auditor has a negative influence on the value of the audit findings. This study rejects H0 from the hypothesis formulation, meaning that the religiosity of the auditor reinforces the relationship between customs value and audit findings.

The results of the study are in accordance with the hypothesis that predicts that the degree of religiosity of the auditor gives a positive moderating effect in the relationship between customs value and audit findings. The influence of religiosity on findings is not constant but depends on customs value.

Extrinsic religiosity is the concept of Allport's religiosity (1950), namely that religiosity is used pragmatically or as a form of signalling by individuals to show a positive image to achieve a certain goal. Therefore, empirical research indicates that extrinsic religiosity is a predictor of positive individual behaviour that is weak and even other studies suggest extrinsic religiosity is associated with individual negative behaviour (Salsman et al., 2005; Smith et al., 2003; in Vitell et al., 2009).

The results of this study imply that although the possibility of religious orientation of auditors is extrinsic which does not affect or contradict positive behaviour, but pragmatic orientation in the form of imaging motivation can be a control for the auditor to remain independent in the audit assignment of high-risk taxpayers. Therefore, if the planning unit is able to accurately map the risk and it is communicated to the auditor who receives the assignment, the aspect of religiosity is positive.

Wealth

The auditor's wealth in this study is proxied by the total assets notified by the auditor to the corruption eradication committee (KPK) in the *State Official Asset Report* (LHKPN). Wealth is defined as the assets owned by the auditor. The results of this study do not accord with the hypothesis that had predicted that the wealth will positively affect customs audit findings. The lack of influence of wealth on customs audit findings may occur because the wealth of the auditor in the form of assets does not correlate with his financial distress. The failure of wealth to represent financial distress as a form of auditor pressure to conduct fraud (Cressey, 1950; Wolfe & Hermanson, 2004) generates the difficulty in explaining its relation to the customs audit findings.

Individual pressures to commit fraud occur due to the availability of financial resources not being sufficient for the auditor to meet their needs. The financial needs of individuals cannot be standardised with one particular nominal value. The ownership of assets has been proven to have created social classes in societies that greatly affect the

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:14.

lifestyles of individuals in every social class. Coleman (1987) reinforced the possibility of such a phenomenon by claiming that wealth and success are not merely goals to be achieved but are part of an individual's identity.

Research conducted by Piff, Stancato, Côté, Mendoza-Denton, and Keltner (2012) even stated that wealth, freedom and independence in individuals with high social status tend to encourage indifferent behaviour and social nonconformity. Through their seven experiments, Piff et al. (2012) concluded that individuals in higher social classes were more likely to behave unethically in decision making, violate the law, take valuables from others, lie in negotiations and collude.

The result of regression Model 2 shows the variable of wealth (WEALTH) has a significant positive effect on the audit findings value and the interaction variable of customs value and religiosity (CUSTVAL * WEALTH) has no significant effect on the value of the audit findings. Based on these results, the auditor's wealth is different from the result of Model 1's regression directly having a positive direct effect on the value of the audit findings. The study accepts H0 that the auditor's wealth does not affect the relationship between customs value and audit findings.

The absence of a moderation-level wealth effect on the possibility of fraud behaviour by auditors in customs audits can also be explained based on the experimental research of Piff et al. (2012). They states that the wealth, freedom, and independence of an individual with high social status tends to encourage indifferent behaviour and not socially conformity. Through seven experiments, they concluded that individuals in the higher social classes are more likely to behave unethically in decision making, violate the law, take valuables from others, lie in negotiations and collude.

CONCLUSION

The results of the testing and analysis suggest:

1. Large customs values are associated with large audit findings too. Education increase the competence of auditors in conducting audit assignments, rather than some wayward, negative effect manifest in enhancing the capability of auditors to commit fraud.
2. Experience had a negative influence on the customs audit findings. This may be due to an auditor's longer experience; they already know the conditions of the field of their work, so they are more daring to behave opportunistically for their own sake, which means decreasing audit findings (audit quality). The moderating effect shows that if the customs value is greater, experienced auditors will increasingly tend to lower the audit findings value. This result not accordance with the hypothesis.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:14.

3. Religiosity had a negative effect on the value of customs audit findings. Theoretically, there is a compelling reason that religiosity will affect the self-control of the individual to behave in ways that foster social conformity or ethical behaviour. However, environmental religiosity or morality also affects the influence of individual religiosity. Individual religiosity will be a good form of self-control if the individual is in a religious environment.
4. Wealth is not related to an auditor's pressure to commit fraud. Pressure is caused more by the gap between the availability of financial resources and the different needs of each social class with their correspondingly different lifestyles.
5. The external party's motivation which is harmed by the auditor's information is higher if the auditor has an increasingly large nest egg. Richer auditors tend to avoid all forms of litigation by improving the quality of their work.

IMPLICATIONS

1. The DGCE needs to maintain the use of customs values in risk management to target auditees, as well as in the evaluation of audit assignments.
2. The DGCE should support, motivate and facilitate every auditor to improve their formal education, since formal education can improve competence and influence auditors' tendencies to be independent through their ethical sensitivity.
3. The DGCE needs to undertake a good rotation of audit assignments and prepare auditor regeneration through the advanced career planning of the chief auditors and a good system of knowledge transferal to improve the competence of junior auditors.

LIMITATIONS AND FUTURE RESEARCH

1. The sample used in this study is limited to the audit conducted by the DGCE; therefore, any research conclusions cannot necessarily be generalised for audits conducted outside of DGCE agencies. Subsequent studies need to use a wider sample.
2. The simplification of the measurement of variables to be limited to only the chief auditor needs to be understood as part of the study's dilemma, as this means ignoring the influence of other auditors in the audit team composition.
3. Social response biases are likely to occur in the measurement of religiosity due to the culture of Indonesian society that is anti-atheist. Future research should

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:14.

design a questionnaire or other data collection method that can measure factual religiosity effectively.

4. Financial pressures are not linearly correlated with the amount of property owned by an individual. Further research needs to define and use a more accurate approach to measure the financial pressure placed on the auditor.

REFERENCES

Abdolmohammadi, M., & Wright, A. (1987). An examination of the effects of experience and task complexity on audit judgments. *Accounting Review*, 1-13.

Alim, Nizarul. M., Hapsari, Trisni. dan Purwanti, Lilik. (2007). Pengaruh Kompetensi dan Independensi Terhadap Kualitas Audit dengan Etika Auditor Sebagai Variabel Moderasi [The Effect of Competence and Independence on Audit Quality with Auditor Ethics as Moderating Variables]. *Simposium Nasional Akuntansi XII. Palembang*, *3*(2), 1-38.

Ashton, A. H. (1991). Experience and error frequency knowledge as potential determinants of audit expertise. *Accounting Review*, 218-239.

Arens, A. A., Elder, R. J., & Beasley, M. S. (2014). *Auditing and assurance services: an integrated approach* (15th ed). England: Pearson Education Limited.

Arkan, M. M. (2010). *Analisis Penggunaan Benford's Law Dalam Perencanaan Audit pada Direktorat Jenderal Bea dan Cukai* [*Analysis of the Use of Benford's Law in Audit Planning at the Directorate General of Customs and Excise*]. Doctoral dissertation, Yogyakarta: Universitas Gadjah Mada.

Baier, C. J., & Wright, B. R. E. (2001). "If You Love Me, Keep My Commandments": A meta-analysis of the effect of religion on crime. *Journal of Research in Crime and Delinquency*, *38*(1), 3-21. doi: 10.1177/0022427801038001001.

Barkan, S. E. (2006). Religiosity and premarital sex in adulthood. *Journal for the Scientific Study of Religion*, *45*(3), 407-417. doi: 10.1111/j.1468-5906.2006.00315.x.

Bonner, S. E., & Walker, P. L. (1994). The effects of instruction and experience on the acquisition of auditing knowledge. *The Accounting Review*, *69*(January), 157-178.

Cloyd, B. C. (1997). Performance in tax research task: the joint effects of knowledge and accountability. *The Accounting Review*, *72*(January), 111-131.

Coleman, James William. (1987)."Toward an integrated theory of white-collar crime." *American Journal of Sociology* 93, no. 2: 406-439.

Coleman, F. (2013). *The moderating effects of the ethicality on both morality and religiosity concerning the likelihood of tax evasion*. Louisiana Tech University.

Cornwall, M., Albrecht, S. L., Cunningham, P. H., & Pitcher, B. L. (1986). The dimensions of religiosity: A conceptual model with an empirical test. *Review of Religious Research*, *27*(3), 226-244. doi: 10.2307/3511418.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:14.

Choo, F., & Trotman, K. T. (1991). The relationship between knowledge structure and judgments for experienced and inexperienced auditors. *Accounting Review*, 464-485.

Cressey, D. R. (1950). The criminal violation of financial trust. *American Sociological Review, 15*(6), 738-743.

Cressey, D. R. (1953). *Other people's money; a study of the social psychology of embezzlement.* New York, NY, US: Free Press.

DeAngelo, L. E. (1981a). Auditor independence, 'low balling,' and disclosure regulation. *Journal of Accounting and Economics*, *3*(2), 113-127. doi: 10.1016/0165-4101(81) 90009-4.

DeAngelo, L. E. (1981b). Auditor size and audit quality. *Journal of Accounting and Economics*, *3*(3), 183-199. doi: 10.1016/0165-4101(81)90002-1.

Deis Jr, D. R., & Giroux, G. A. (1992). Determinants of audit quality in the public sector. *The Accounting Review*, *67*(July), 462-479.

Dorminey, J., Fleming, A. S., Kranacher, M. J., & Riley Jr., R. A. (2012). The evolution of fraud theory. *Issues in Accounting Education*, *27*(2), 555-579. doi: 10.2308/iace-50131.

Dye, Ronald A. (1993). "Auditing standards, legal liability, and auditor wealth." *Journal of political Economy*. 101(5). 887-914.

Francis, J. R. (2004). What do we know About audit quality? *The British Accounting Review, 36*(4), 345-368. doi: 10.1016/j.bar.2004.09.003.

Francis, J. R., & Krishnan, J. (2002). Evidence on auditor risk-management strategies Before and After the Private Securities Litigation Reform Act of 1995. *Asia-Pacific Journal of Accounting and Economics*, 9(2), (December), 135-157. doi: 10.1080/ 16081625.2002.10510607.

Herliansyah, Y., & Ilyas, M. (2006). Pengaruh Pengalaman Auditor Terhadap Penggunaan Bukti Tidak Relevan Dalam Auditor Judgment [The Effects of the Auditor's Experience on the Use of Irrelevant Evidence, in the Auditor Judgment]. *Simposium Nasional Akuntansi IX Padang*, 23-26.

Howard, John A. "Higher education and a civilization in trouble: Producing a virtuous populace." *Vital Speeches* 55 (1986): 314-318. (Hapus).

Hogness, John R. (1986). "The essence of education: Ethics and morality." *Vital Speeches* 52. 561-563. (hapus).

Kranacher, Mary-Jo, Richard Riley, and Joseph T. 2010. Wells. *Forensic accounting and fraud examination*. John Wiley & Sons.

Lee, D., Bell, D. C., & Moon, C. (2005). Religiosity, tobacco use, and poverty. *American Journal of Health Studies*, *20*, 15-21.

Libby, Robert, and Patricia A. Libby. (1989). "Expert measurement and mechanical combination in control reliance decisions." *Accounting Review* 729-747.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:14.

Mardisar, D., & Sari, N. R. (2007). Pengaruh Akuntabilitas dan pengetahuan terhadap kualitas Hasil kerja auditor [Effect of Accountability and knowledge of the quality of the work of the auditor]. *Simposium Nasional Akuntansi X Makasar*, 1-25.

Merritt, S. (1991). Marketing ethics and education: some empirical findings. *Journal of Business Ethics*, *10*(8), 625-632. doi: 10.1007/BF00382883.

Nasution, D. A. (2015). *Pengaruh Pendidikan, Pengalaman, Gender, dan Kesejahteraan Auditor Terhadap Kualitas Audit Direktorat Jenderal Bea dan Cukai*. [*Effects of Education, Experience, Gender, and Auditor Welfare on Audit Quality of the Directorate General of Customs and Excise*] Skripsi. Akuntansi. Sekolah tinggi Akuntansi negara.

Nasution, H., & Fitriany (2012). *Pengaruh Beban Kerja, Pengalaman Audit, dan Tipe Kepribadian Terhadap Skeptisisme Profesional dan Kemampuan Auditor Dalam Mendeteksi Kecurangan* [*Effect of Workload, Audit Experience, and Type of Personality on Professional Skepticism and the Auditor's Ability to Detect Fraud*] Tesis. Fakultas Ekonomi Program Studi Ilmu Akuntansi. Universitas Indonesia.

Piff, P. K., Stancato, D. M., Côté, S., Mendoza-Denton, R., & Keltner, D. (2012). Higher social class predicts increased unethical behavior. *Proceedings of the National Academy of Sciences of the United States of America*. 109(11)(March), 4086-4091. doi: 10.1073/pnas.1118373109. PubMed: 22371585.

Purwoko, A. B. (2004). *Pemilihan Obyek Audit Kepabeanan Berdasarkan Profil Importir pada DJBC* [*Selection of Customs Audit Object Based on Importer Profile on DJBC*]. Tesis. Fakultas Ekonomi Universitas Indonesia.

Salsman, J. M., Brown, T. L., Brechting, E. H., & Carlson, C. R. (2005). "The link between religion and spirituality and psychological adjustment: The mediating role of optimism and social support." *Personality and social psychology bulletin*, *31*(4), 522-535.

Sembiring, P. A. (2015). *Analisis Penentuan obyek audit Kepabeanan pada Direktorat jenderal Bea dan cukai berdasarkan standar manajemen risiko World Customs Organization (WCO)* [*Analysis of the determination of the Customs audit object on the Directorate General of Customs and Excise, based on World Customs risk management standards*]. Skripsi. Sekolah tinggi Akuntansi negara.

Setyaningrum, D. (2012). *Analisis Faktor-Faktor yang Mempengaruhi Kualitas Audit BPK-RI* [*Analysis of Factors Affecting Audit Quality of BPK-RI*]. Simposium Nasional Akuntansi, 15, 1-28.

Shockley, R. A. (1982). Perception of audit independence: A conceptual model. *Journal of Accounting, Auditing, and Finance*, *5*, 126-143.

Smith, T. B., McCullough, M. E., & Poll, J. (2003). "Religiousness and depression: Evidence for a main effect and the moderating influence of stressful life events." *Psychological bulletin*, *129*(4), 614.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:14.

Stack, S., & Kposowa, A. (2006). The effect of religiosity on tax fraud acceptability: A cross-national analysis. *Journal for the Scientific Study of Religion*, *45*(3), 325-351. doi: 10.1111/j.1468-5906.2006.00310.x.

Sukriah, I. A., & Inapty, B. A. (2009). "Pengaruh Pengalaman Kerja, Independensi, Obyektifitas, Integritas dan Kompetensi Terhadap Kualitas Hasil Pemeriksaan." [The Influence of Work Experience, Independence, Objectivity, Integrity and Competence on Quality of Audit Results]. *Simposium Nasional Akuntansi XII Palembang*, *3*(2), 1-38.

Hartanto, T. (2015). Analisis Terhadap Faktor-Faktor Yang Mempengaruhi Kualitas Audit Kepabean [Analysis of Factors Affecting Customs Audit Quality] *Jurnal BPPK: Badan Pendidikan dan Pelatihan Keuangan*, *8*(2), 141-168.

Treviño, Linda K., Gary R. Weaver, and Scott J. Reynolds. (2006). "Behavioral ethics in organizations: A review." *Journal of management* 32(6), 951-990.

Vitell, S. J., Bing, M. N., Davison, H. K., Ammeter, A. P., Garner, B. L., & Novicevic, M. M. (2009). Religiosity and moral identity: the mediating role of self-control. *Journal of Business Ethics*, *88*(4), 601-613. doi: 10.1007/s10551-008-9980-0.

Watts, R. L., & Zimmerman, J. L. (1978). Toward a positive theory of the determination of accounting standards. *The Accounting Review*, *43*(January), 112-134.

Weaver, Gary R. (2006). "Virtue in organizations: Moral identity as a foundation for moral agency." *Organization studies* 27, no. 3: 341-368.

Welch, M. R., Tittle, C. R., & Grasmick, H. G. (2006). Christian religiosity, self-control and social conformity. *Social Forces*, *84*(3), 1605-1623. doi: 10.1353/sof.2006.0075.

Wolfe, D. J., & Hermanson, D. R. (2004). The fraud Diamond: considering the four elements of fraud. *CPA Journal*, *74*(December), 38-42.

Zulaikha (2006). Pengaruh interaksi gender, kompleksitas tugas dan pengalaman auditor terhadap audit judgment [Effect of interaction of gender, task complexity and auditor experience on audit judgment]. *Simposium Nasional Akuntansi*, *9*(August), 1-22.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:14.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:14.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 14

THE ROLE OF BOARD OF COMMISSIONERS AND AUDIT COMMITTEE ON EARNINGS MANAGEMENT AFTER IFRS CONVERGENCE

Nabella Roma Desi and Aria Farah Mita*
Department of Accounting, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This study examines the effect of the boards of commissioners and audit committee effectiveness on earnings management in the setting of changing the accounting standard regime onto the International Financial Reporting Standards (IFRS). The sample of this study are companies listed on the Indonesian stock exchange during 2010 to 2013. The boards of commissioners and the audit committees effectiveness are measured based on the Association of Southeast Asian Nations corporate governance scorecard (ASEAN CG Scorecard), while the DeChow Model is used to measure the earnings management. The result finds that all the board of commissioners and the audit committee effectiveness has an impact on reducing earnings management. This study also finds that the role has strengthened after the period of IFRS adoption.

Keywords: IFRS, board of commissioners, audit committee, corporate governance, earnings management

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

* Corresponding Author's E-mail: aria.farahmita@ui.ac.id.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:21.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 14

THE ROLE OF BOARD OF COMMISSIONERS AND AUDIT COMMITTEE ON EARNINGS MANAGEMENT AFTER IFRS CONVERGENCE

Nabella Roma Desi and Aria Farah Mita*
Department of Accounting, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This study examines the effect of the boards of commissioners and audit committee effectiveness on earnings management in the setting of changing the accounting standard regime onto the International Financial Reporting Standards (IFRS). The sample of this study are companies listed on the Indonesian stock exchange during 2010 to 2013. The boards of commissioners and the audit committees effectiveness are measured based on the Association of Southeast Asian Nations corporate governance scorecard (ASEAN CG Scorecard), while the DeChow Model is used to measure the earnings management. The result finds that all the board of commissioners and the audit committee effectiveness has an impact on reducing earnings management. This study also finds that the role has strengthened after the period of IFRS adoption.

Keywords: IFRS, board of commissioners, audit committee, corporate governance, earnings management

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

* Corresponding Author's E-mail: aria.farahmita@ui.ac.id.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:31.

INTRODUCTION

Financial statements are structured presentations of the financial position and performance of a corporation. An increasingly global financial market raises the need for comparable standards and regulations worldwide (Zarzeski, 1996), requiring a harmonized reporting format for all countries as codified in international accounting standards. Thus, the International Financial Reporting Standard (IFRS) was formulated by the International Financial Reporting Board under the guidance of the International Accounting Standard Board. The IFRS convergence to financial standards is expected to make it easier for users of financial statements to compare inter-country corporate finances. Furthermore, it is expected to reduce bottlenecks in capital flows caused by reduced costs resulting from differences in financial reporting standards.

The quality of accounting information can be measured by estimating the extent to which financial statements have information reflecting the underlying economic situation (Chen et al., 2010). Financial statements provide valuable information if the user can identify the similarities and differences between the existing economic phenomena. Thus, the quality of the financial statement has the opposite relationship with earnings management. (Platikanova & Perramon, 2012). This refers to the fact that IFRS adoption and convergence is applied to eliminate externalities of information arising from lack of comparability. Accounting information prepared under IFRS has a higher quality of information than accounting information compiled using previous standards (Bartov et al., 2005). Another conclusion explains that IFRS adoption can lower the company's earnings management (Hung and Subramayam, 2007; Barth et al., 2008; Chen et al., 2011; and Chua et al., 2012). However, there are disagreements with the notion that earnings management will decrease with a decrease in differences of the international financial reporting environment (Doupnik and Salter, 1995). Furthermore, some studies suggest that IFRS adoption has little impact on earnings management (Beuselinck et al., 2008; Chalmers et al., 2008; Kabir et al., 2010). In Indonesia, research on the impact of IFRS convergence on earnings management gives results showing that, in the period after the implementation of IFRS (2011–2012), there was an increase in the relevance of the value of profit and book value of corporate equity because of changes in Indonesian accounting standards (Nurafriana, 2014).

The existence of a standard of financial reporting supplies a needed principle of good corporate governance. This principle is one traditionally applied to the roles of boards of commissioners and audit committees. A board is a key to corporate governance because it acts as the representative of the company owner, who oversees the management. Characteristics of boards can affect the quality of financial statements, as measured by the level of earnings management and the level of quality information content (Hermawan, 2009). Other research indicated that the composition of boards could influence management when they prepare financial statements through their role in

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:31.

carrying out supervisory functions, resulting in quality income statements (Budiono, 2005). In support of its duties, a board can form a committee having the responsibility for overseeing financial reporting, external audits, and internal control systems. The Blue-Ribbon Committee in 1999 reported 10 recommendations to improve the functioning of corporate audit committees as one indicator of corporate governance and to improve the credibility and the reliability of financial statements.

The audit committee has the responsibility to oversee the accuracy as well as the integrity of financial report (Sarbanes–Oxley (SOX), 2002). Research conducted by Bryce, Ali, and Mathe, with the scope of 200 companies listed on the Australian stock exchange for 6 years (2003–2008), provided results of accounting quality, indicating that they did not increase significantly with the adoption of IFRS in Australia. It is possible to underlying the results of this research with the fact that Australia is a mandatory adopter and that the previous accounting standards were principle-based. Next, the effectiveness of the audit committee has a positive impact on improving the quality of accounting during the period after IFRS adoption, compared with the Australian generally accepted accounting principles (GAAP) period. This aligns with the research of Marra et al. (2011) from Italy, which stated that IFRS made the audit committees more effective when reducing earnings management. Thus, resulting from this study, the audit committee in Indonesia could be more effective to improve the quality of accounting. Some disagreements by these experts make it necessary to further study the quality of accounting during the period before and after the application of IFRS convergence. The purpose of this study is to examine the effect of IFRS convergence, boards of commissioners, and audit committees, regarding earnings management in Indonesia. This study examines how IFRS convergence strengthens the negative effect of the boards' and committees' effectiveness with earnings management

This differs from prior research, because it adds variable of the role of boards and committees and measures their effectiveness. The effectiveness of the boards and committees in this study was measured using the Association of Southeast Asian Nations (ASEAN) corporate governance (CG) scorecard, a benchmark for assessing corporate governance practices of emitters in Southeast Asian countries. It is an initiative of the ASEAN Capital Market Forum. This study provide contributions to the literature in several ways. First, it complements research examining the accounting quality pre- and post-convergence of IFRS in Indonesia proxied by the earnings management. Additionally, it provide an insight on the CG paradigm. Its results provide more credibility to the link between good corporate governance and earnings management. The remainder of this paper is structured as follows. Section 2 presents an analytical framework, including prior research and hypothesis development with variable measurement. Section 3 presents the methods used. Results and discussions are provided in Section 4. Section 5 contains the conclusion of this research.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:31.

ANALYTICAL FRAMEWORK

Prior Research and Hypothesis Development

Global financial markets demand a harmonized form of reporting for all countries. This can be realized through the harmonization of international accounting standards, as formulated by the IFRS. The application of IFRS requires disclosures of various information about both quantitative and qualitative risks. Levels of disclosure closer to full disclosure will reduce the information asymmetry between participants. Normally, management has more information than other users of financial statements. In accordance with agency theory, information asymmetry arises when agents have more information than principals. The full disclosure of financial statements will reduce earnings management and will reduce the difference in reported information. Therefore, the resulting financial statements should have higher quality. Previous studies found that IFRS adoption in Germany reduced the intensity of earnings management when compared with using GAAP (Glaum et al., 2008). This is also supported by the research of Chen et al. (2010), who examined the effect of IFRS on the quality of accounting in European countries, revealing an increase in accounting quality. This was indicated by fewer earnings disbursements with certain targets and lower absolute discretionary accruals. On the basis of this description, it is expected that IFRS convergence in Indonesia could reduce the level of earnings management, because IFRS encourages more detailed disclosures than previous standards. These more detailed disclosures reduce information asymmetry and improve earnings quality (Zhou, 2008). Therefore, the implementation of IFRS convergence causes it to be more tedious to apply earnings management practices than beforehand. However, research conducted by Anissa (2015) stated that accounting quality in Indonesia declined after the implementation of IFRS convergence. However, the model used to measure the quality of accounting was profit management, per Dechow et al. (1995), and accrual quality, per McNchols (2002). Thus, on the basis of the differences, a hypothesis can be drawn:

H1: IFRS convergence has a negative impact on earnings management.

Agency theory implies the existence of information asymmetry between agents and principals. In one case, information asymmetry appears when the agent has more information than the principal. Here, agents can misuse the excess information they receive. One of the actions an agent often takes is earnings management, during which performance is hastened or slowed to show an end-of-cycle result that better frames expectations next cycle. Most often, performance or production is slowed so that future production expectations will not be higher than manageable. When agents take advantage of existing information gaps to make decisions based on their interests, agency costs rise.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:31.

One solution involves supervision within the company, so that agency activities can be limited and monitored for the purposes of good corporate governance. In this study, corporate governance is ensured by the effectiveness of the boards of commissioners and of the audit committees. The formation of the boards and committees should prevent or reduce problems arising from information gaps. Previous studies linked the impact of implementing corporate governance on earnings management. The studies conducted by Shen and Chih (2007), Xie et al. (2003), Lai (2005), Chen et al. (2007), Liu and Lu (2007), and Chug et al. (2008) concluded that companies had lower earnings management when implementing good corporate governance. Another study concluded that the characteristics of the boards could affect the quality of financial statements, measured either by the level of earnings management or the level of income of information content (Hermawan, 2009). Other research stated that the composition of the board, via its supervisory role, could influence management quality when preparing financial statements (Budiono, 2005). An effective board will carry out its roles and responsibilities to oversee the direction of the company to produce quality financial reports and minimize negative impacts. An effective board makes it difficult for management to get away with earnings management.

H2: The effectiveness of the board of commissioners has a negative impact on earnings management.

Agency theory, according to Jensen and Meckling (1976), is defined as a contract whereby a person(s) principally makes an agreement with another person(s) (agent) to perform a service related to delegation of authority in terms of decision making on behalf of the principal. The audit committee, formed by the board of commissioners (principals), also has the responsibility to oversee the management of the company (agents), especially in terms of the accuracy and integrity of financial statements (SOX, 2002). SOX states that the audit committee must be an independent party and not include any director of the company. It must consist of at least one financial expert. Thus, an independent audit committee can have a significant influence on the presentation of good-quality financial statements. The role of the audit committee is corporate governance, representing investors to prevent the emergence of asymmetric information in the company. Other research shows that audit committee activities, proxied through many meetings, can provide a negative relationship to the possibility of misstatement. Thus, it is expected to produce more accurate financial reports. Bedard et al. (2004) stated that effective audit committees better understand accounting practices and can monitor earnings management and improve the quality of accounting firms. Research conducted by Anissa (2015) mentioned that the audit committee improved the quality of accounting in Indonesia. From the above description, a third hypothesis can be drawn.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:31.

H3: The effectiveness of the audit committee has a negative impact on earnings management.

Corporate governance adheres to a two-tier system: boards and executives (management). According to agency theory, supervision is needed to avoid the emergence of agency costs, because the information gap could trigger managers to change reported financial statements to mislead recipients. The board of commissioners and the audit committee are required to know applicable accounting standards and ensure the production of quality financial reports. The more complex and detailed application of IFRS convergence requires that financial statements be presented in full to minimize earnings management. Several studies (Dechow et al., 1996; Beasly, 1996; Vefeas, 2000; Peasnell et al., 2005; Klein, 2002; Zhou and Chen, 2004) stated that the characteristics of the board of directors could affect the quality of financial statements measured either by the level or earnings management or by the level of earnings information (Hermawan, 2009). Research by Marra et al. (2011) provided evidence that the application of IFRS enhanced the role of the board of commissioners and the audit committee in reducing earnings management. Low earnings management is assumed to improve accounting quality because financial statements are presented more fairly. Other researchers have stated that IFRS could cause financial statement disclosures to have better quality (Daske and Gebhardt, 2006). An increase in financial statement disclosures causes the board of commissioners and the audit committee to obtain a more detailed understanding of accounting policies and reporting.

H4: IFRS convergence strengthens the negative effect of the board's effectiveness on earnings management.

Agency theory states that principals oversee the work of agents to ensure the absence of information asymmetry, resulting in agency costs. The board of commissioners (principal) establishes an audit committee to assist them in supervising the performance of management (agents), particularly in terms of financial reports. The more complex and detailed application of IFRS convergence makes it necessary to understand accounting and reporting policies in detail, so that the board can perform its supervisory roles for earnings management and support better financial disclosures. Previous research conducted by Marra et al. (2011) stated that audit committees were more effective in reducing earnings management when adopting IFRS, compared with United States GAAPs in Italy. Research conducted by Daske and Gebhardt (2006) stated that IFRS improved the quality of financial statement disclosures. The increase in disclosure causes an audit committee to gain more accurate information about accounting regulations and reporting. Thus, a fourth hypothesis can be formulated:

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:31.

H5: IFRS convergence strengthens the negative effect of the audit committee's effectiveness on earnings management.

Variable Measurement

The Measure of Earnings Management

Dependent variables are observed and measured to determine effects caused by the independent variables. The dependent variable in this study is earnings management as calculated using Dechow et al. (1995), which modified the model of Jones (1991). This variant is most often used and is considered the most accurate in determining discretionary accruals (Scott, 2010). Additionally, per Chen (2010), Dechow's model better explains the earnings management than Jones's model:

$$\frac{Xft}{Yft-1} = \phi f\left[\frac{1}{Yft-1}\right] + \phi 2f\left[\frac{\Delta Aft}{Yft-1} - \frac{\Delta Bft}{Yft-1}\right] + \phi 3f\left[\frac{Cft}{Yft-1}\right] + \varepsilon ft \quad (1)$$

where Xft = total accruals in year t; Yft − 1 = total assets in year (t − 1) for company f; ΔAft = income in year t minus income in year (t − 1) for company f; Cft = gross value of property, plant, and equipment in year t for company f; ΔBft = receivables in year t minus receivables in year (t − 1) of company f; and εft = error term in year t for company f.

$$DAft = \frac{Xft}{Yft-1} - \alpha 1f\left[\frac{1}{Yft-1}\right] - \alpha 2f\left[\frac{\Delta Aft}{Yft-1} - \frac{\Delta Bft}{Yft}\right] - \alpha 3f\left[\frac{Cft}{Yft-1}\right] \quad (2)$$

Measuring earnings management via discretionary accrual is done by capturing the error component of the accrual. Residuals of the accrual model represent estimation error caused by management discretion.

The estimation coefficient or residual error for Eq. (1) uses ordinary least squares regression performed cross-sectionally each year for each industry. The value of the discretionary accrual (DA) is the residual error (ε) of the regression model Eq. (1), or the difference between the total accrual and the fitted value of the total accrual. Profits must provide free, unbiased financial information. Thus, they must reflect the true performance of the company (Velury & Jenkins, 2006). A financial statement should reflect the real economic substance occurring within the company. The financial statements should be presented honestly and faithfully. The dimensions of faithful representation are included in the dimensions of reliability. This model is used to detect existing earnings management. The low or high quality of accounting is influenced by the level of earnings management.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:31.

Jones's model, modified by Dechow, Sloan, and Sweeney (1995) reduces the tendency of Jones model error occurring when discretionary is applied to income. Changes in revenues are adjusted for changes in accounts receivable, because, in sales revenue there is a sale of credit. A reduction in the value of the receivables shows that the received revenue is indeed a net income (Dechow et al., 1995). They calculated total earnings accruals and then separated non-discretionary accruals and discretionary accrual to find the rate of abnormal accrual income.

METHODS

This study used 816 annual reports from 204 companies listed on the IDX over a 4 year period (2010–2013). The selection of samples from the existing population used purposive judgment sampling technique with the criteria described previously. The research model used in this study matches the model promulgated by Bryce, Ali, and Mather (2014). However, there are some differences. The absolute value of discretionary accrual was obtained in the original model, because their study only focused on the adjustment, not the direction indicating increasing or decreasing income. The regression models are as follows:

Model 1

$$|\mathrm{DA}| = \alpha_0 + \alpha_1 \mathrm{IFRS_t} + \alpha_2 \mathrm{BOC_{it}} + \alpha_3 \mathrm{AUDCOM_{it}} + \alpha_4 \mathrm{SIZE_{it}} + \alpha_5 \mathrm{GROWTH_{it}} + \alpha_6 \mathrm{ROA_{it}} + \alpha_7 \mathrm{LEV_{it}} + \varepsilon_{it}. \quad (3)$$

The model is used to test H1–H3.

Model 2

$$|\mathrm{DA}| = \alpha_0 + \alpha_1 \mathrm{IFRS_t} + \alpha_2 \mathrm{BOC_{it}} + \alpha_3 \mathrm{IFRS} * \mathrm{BOC_{it}} + \alpha_4 \mathrm{AUDCOM_{it}} + \alpha_5 \mathrm{IFRS} * \mathrm{AUDCOM_{it}} + \alpha_6 \mathrm{SIZE_{it}} + \alpha_7 \mathrm{GROWTH_{it}} + \alpha_8 \mathrm{ROA_{it}} + \alpha_9 \mathrm{LEV_{it}} + \varepsilon_{it}. \quad (4)$$

The model is used to test H4–H5.

|DA| = earnings management of a company measured by the absolute value of the level of discretionary accruals; IFRS = dummy, rated 1 if the country where the company is located has converted IFRS significantly in 2010 and 2011 and rated 0 if otherwise in 2012 and 2013; BOC = scoring assessment of the effectiveness of the board of commissioners; AUDCOM = scoring assessment of the effectiveness of the audit

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:31.

committee; SIZE = natural logarithm of total assets; GROWTH = company growth as measured by the percentage change in total value of current-year sales compared with the previous year's total sales; ROA = ratio of net profit after tax, divided by total assets; LEV = corporate leverage rate, as measured by dividing the total debt value by total assets of firm i in year t.

RESULT AND DISCUSSION

Samples Selection

All financial information was gathered from the Eikon database, financial reports, and annual reports.

Table 1. Sample selection results

	Period			
	Pre- IFRS Convergence		**Post- IFRS Convergence**	
	2010	**2011**	**2012**	**2013**
Companies listed in IDX 2010–2013	518	518	518	518
Less: Financial companies listed in IDX	144	144	144	144
Less: Companies that have incomplete data	170	170	170	170
Samples	204	204	204	204

Table 2. Descriptive statistics

Variable	**Observation**	**Mean**	**Standard Deviation**	**Maximum**	**Minimum**
|DA|	816	0.112634	0.122740	0.696897	0.000665
BOC	816	0.469115	0.124065	0.814815	0.148149
AUDCOM	816	0.729419	0.201632	1.000000	0.100000
IFRS	816	0.500000	0.500307	1.000000	0.000000
SIZE	816	28.22343	1.742537	32.99697	22.90054
GROW	816	0.291899	0.541455	3.369547	− 1.926631
ROA	816	0.052417	0.114062	0.543335	− 0.670088
LEV	816	0.112379	0.541455	3.369547	− 1.926631

The value of earnings management was measured using the discretionary accrual value. The higher the value of discretionary accrual, the higher the earnings management. Statistical testing provided results of our hypothetical regressions. To test the hypotheses, we used a linear regression model, focusing on IFRS convergence, board effectiveness, and audit committee effectiveness. The average score of the board of commissioners was 0.469, indicating that the average company in the sample had not fully provided information related to the board in their financial statements. However, the average score

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:31.

of the committee audit was 0.729, indicating that the average company in the sample fully provided information in their financial statements.

Pearson Correlation Test

The Pearson correlation test finds correlations between dependent and independent variables, using a control variable. The correlation value is said to be high when greater than or equal to 0.8. Thus, such scores can bias the regression result. Table 3 shows that each variable used in this study has no strong correlation, because there is no value greater than or equal to 0.8. Therefore, it can be concluded that there is negligible correlation bias.

Table 3. Pearson correlation

	|DA|	IFRS	BOC	AUDCOM	ROA	SIZE	LEV	GROWTH
|DA|	1.0000							
IFRS	− 0.1172	1.0000						
BOC	− 0.0973	0.0677	1.0000					
AUDCOM	− 0.1042	0.1362	0.3732	1.0000				
ROA	− 0.0100	− 0.0134	0.0852	0.0177	1.0000			
SIZE	− 0.0874	0.0861	0.4443	0.4280	0.1654	1.0000		
LEV	− 0.0100*	− 0.0155	− 0.0008	0.1356	− 0.0200	− 0.0715	1.0000	
GROWTH	0.0010*	0.2223	0.0656	0.0709	0.1375	0.2694	0.0581	1.0000

Table 4. Regression result model 1

$$|\mathbf{DA}| = \alpha_0 + \alpha_1 \mathrm{IFRS}_t + \alpha_2 \mathrm{BOC}_{it} + \alpha_3 \mathrm{AUDCOM}_{it} + \alpha_4 \mathrm{SIZE}_{it} + \alpha_5 \mathrm{GROWTH}_{it} + \alpha_6 \mathrm{ROA}_{it} + \alpha_7 \mathrm{LEV}_{it} + \varepsilon_{it}$$

Variable	Predicted sign	Coefficient	Probability	Significant
|DA|				
IFRS	-	− 0.046706	0.015	**
Boc	-	− 0.6848414	0.000	***
Audcom	-	− 0.2695642	0.084	*
Size	-	− 0.0020665	0.066	*
Growth	+	− 0.160060	0.527	
ROA	+	− 0.238992	0.954	
Lev	+	− 0.3602981	0.159	
Number of Observations	816	R-sq		0.0667
		Prob > F		0.0000

Dependent variable = Earnings Management

*** significant α = 0.01; ** significant α = 0.05; * significant α = 0,1

The fixed effects model was used to test hypotheses. All regressions were also completed using Stata 13, a data research application. The stages of this study comprised three parts in the statistical test. The first part tested the coefficient of determination (goodness of fit) to determine the relationship between independent and dependent

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:31.

variables. The second part tested the significance of the model (F-statistics). The last part tested the partial significance (t-statistics).

The table shows Pearson correlation between discretionary accruals and independent variables.

The higher the value of |DA|, the higher the earnings management. Table 4 shows that IFRS, BOC, and AUDCOM had significantly negative results on earnings management. It also shows that IFRS convergence, board effectiveness, and audit-committee effectiveness had a negative influence on earnings management. Therefore, H1, H2, and H3 are accepted. IFRS convergence in Indonesia lowered the earnings management because of the standardization of financial reporting requiring companies to provide more accurate financial statements. This agrees with research that has suggested that accounting information prepared under IFRS had a higher quality of information than that compiled using previous standards (Bartov et al., 2005). Disclosures related to the performance of boards and audit committees, related to financial statements, have a negative effect, because they share the responsibility of presenting complete financial statements in accordance with the principles of good corporate governance. Shen and Chih (2007), Xie et al. (2003), Lai (2005), Chen et al. (2007), Liu and Lu (2007), and Chug et al. (2008) concluded that firms had lower earnings management when they applied good corporate governance. Variable size also shows significant influence in accordance with the theory that company size had a significant negative effect on the level of earnings management (Purwanti, 2012).

Table 5. Regression result model 2

$$|DA| = \alpha_0 + \alpha_1 IFRS_t + \alpha_2 BOC_{it} + \alpha_3 IFRS * BOC_{it} + \alpha_4 AUDCOM_{it} + \alpha_5 IFRS * AUDCOM_{it} + \alpha_6 SIZE_{it} + \alpha_7 GROWTH_{it} + \alpha_8 ROA_{it} + \alpha_9 LEV_{it} + \varepsilon_{it}$$

Variable	**Predicted sign**	**Coefficient**	**Probability**	**Significant**
|DA|				
IFRS	-	− 0.0498248	0.403	
Boc	-	− 0.6106984	0.001	***
Audcom	-	− 0.2816069	0.033	**
IFRS * Boc	-	− 0.2807788	0.055	*
IFRS * Audcom	-	− 0.0921065	0.935	
Size	-	− 0.0019858	0.065	*
Growth	+	− 0.015354	0.455	
ROA	+	− 0.1243776	0.993	
Lev	+	− 0.3542185	0.159	
Number of Observation	816	R-sq		0.0731
		Prob > F		0.0000

Dependent Variable = Accounting Quality

*** significant α = 0.01; ** significant α = 0.05; * significant α = 0.1

Table 5 shows that IFRS variables significantly reduced the level of earnings management. The effectiveness variable of the board of directors decreased earnings management as predicted by H2. Previous research also stated that the characteristics of

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:31.

the board could affect the quality of financial statements measured by the level of earnings management and by the level of earnings information (Hermawan, 2009).

The moderating variable (i.e., IFRS convergence), which increases the effectiveness of the board of commissioners, reduces earnings management in accordance with H4. This is consistent with research conducted by Marra et al. (2011), who provided evidence that the application of IFRS enhanced the role of the board of commissioners and the audit committee in reducing earnings management. Thus, H4 is accepted. Low earnings management is assumed to improve accounting quality, because financial statements are presented more fairly. The impact of IFRS convergence improves the disclosure of board performance, presented in the company's annual report. The greater the role of the board, the more effective the governance. The effectiveness of the audit committee does not have a significant influence. Thus, it is said that the implementation of IFRS convergence does not provide much change in the audit committee performance disclosure. Thus, H5 is rejected. The fundamental reason for this is that the audit committees in companies in Indonesia are likely to have an effective role before the IFRS convergence period (Bapepam Circular no. SE-03/PM/2000, May 5, 2000). Bapepam requires the establishment of an Indonesian public company audit committee comprising at least three members and chaired by an independent commissioner with two external independent members who have an accounting and financial background. Therefore, the existence of IFRS convergence did not have much effect on the disclosure of audit committee performance in Indonesian companies.

This research produced an R^2 value of 6.67% and 7.31%, indicating that there are other factors outside the given independent and control variables that could help explain the dependent variable. Another study by Sri Hendarti (2013) used more variables, leveraging external auditors and a combination of models by Kaznik (1999) and Kothari (2005) to generating discretionary accruals in accordance with the research of Diyanty (2012), concluding that the combined model has a higher R^2.

CONCLUSION

The purpose of this study was to prove the efficacy of IFRS convergence, board effectiveness, and audit-committee effectiveness on earnings management. This included examining the effects of IFRS convergence as it increased the effectiveness of the governance to reduce earnings management.

The effectiveness of the board of commissioners and the audit committee is measured using the ASEAN CG Scorecard. We used the Dechow model to obtain the absolute value of the residual discretionary accrual. It can be concluded that IFRS convergence, the effectiveness of the board of directors, and the effectiveness of the audit committee significantly reduce earnings management. Furthermore, IFRS convergence increases the

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:31.

effectiveness of the board when reducing earnings management. Therefore, H1, H2, H3, and H4 are supported. The effectiveness of the audit committee does not have a significant influence. Thus, the implementation of IFRS convergence does not cause much change, and H5 is not supported.

The findings of this study will help regulators encourage public companies to be more transparent when presenting public financial statements and to avoid excessive earnings management. For researchers, this study adds new insights and knowledge, which can contribute to the development of theory. For investors and issuers, this research can be used as reference material for investors, especially when assessing the extent to which earnings management practices occur with respect to the effectiveness of governance. This research is also expected to encourage accountants and auditors to increase their knowledge related to changes and more complex accounting standards (i.e., application of IFRS convergence) so that it can produce quality financial reports.

This study has limitations in several respects. First, measurement of the effectiveness of the board of commissioners and the audit committees conducted using a scoring method that does not use all board-related questions in the ASEAN CG Scorecard. Second, the number of samples wasted because of data unavailability lack representation. Future studies should explore more data sources for company information (e.g., official websites). This research was limited in Indonesia during the years 2010–2013. This could have affected because of the small window of time. Future research should be expanded to other countries and for longer durations. Subsequent research should use other models to measure earnings management to produce higher R^2 values.

REFERENCES

ASEAN Corporate Governance Scorecard. (2009). *ASEAN Capital Market Forum*. Available from: http://www.theacmf.org [Accessed January 18th, 2018].

Beuselinck, C., Joos, P. & van der Meulen, S. (2007). *International Earning Comparability*. Working Paper. Tilburg University

Chen, H., Tang, Q., Jiang, Y. & Lin, Z. (2010). The role of international financial reporting standards in accounting quality: Evidence from the European Union. *Journal of international financial management & accounting*, *21*(3), pp. 220-278.

Chen, K. Y., Elder, R. J. & Hsieh, Y. M. (2007). Corporate governance and earnings management: The implications of corporate governance best-practice principles for Taiwanese listed companies. *Journal of Contemporary Accounting & Economics*, *3*(2), pp. 73-105.

Daske, H. & Gebhardt, G. (2006). International financial reporting standards and experts' perceptions of disclosure quality. *Abacus*, *42*(3-4), pp. 461-498.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:31.

Dechow, P. M. & Dichev, I. D. (2002). The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review*, *77*(s-1), pp. 35-59.

Doupnik, T. S. & Salter, S. B. (1995). External environment, culture, and accounting practices: a preliminary test of a general model of international accounting development. *International Journal of Account*, *30*(2), pp. 189-207.

Hermawan, A. A. (2009). *The effect of board of commissioners and audit committee effectiveness, family ownerships, and bank monitoring role, on earnings quality* (Doctoral dissertation, Dissertation, University of Indonesia).)

Lai, L. H. Y. (2006). *Are independent directors effective in lowering earnings management in China?* (Doctoral dissertation, Texas A&M University).

Liu, Q. & Lu, Z. J. (2007). Corporate governance and earnings management in the Chinese listed companies: A tunneling perspective. *Journal of Corporate Finance*, *13*(5), pp. 881-906.

Marra, A., Mazzola, P. & Prencipe, A. (2011). Board monitoring and earnings management pre-and post-IFRS. *The International Journal of Accounting*, *46*(2), pp. 205-230.

Bryce, M., Ali, M. J. & Mather, P. R. (2015). Accounting quality in the pre-/post-IFRS adoption periods and the impact on audit committee effectiveness—Evidence from Australia. *Pacific-Basin Finance Journal*, *35*, pp. 163-181.

Sarbanes, P. (2002, July). Sarbanes-oxley act of 2002. In *The Public Company Accounting Reform and Investor Protection Act.* Washington DC: US Congress.

Van Tendeloo, B. & Vanstraelen, A. (2005). Earnings management under German GAAP versus IFRS. *European Accounting Review*, *14*(1), pp. 155-180.

Xie, B., Davidson, III. W. N. & DaDalt, P. J. (2003). Earnings management and corporate governance: the role of the board and the audit committee. *Journal of corporate finance*, *9*(3), pp. 295-316.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:31.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 15

THE EFFECT OF PRODUCT MARKET POWER AND INDUSTRY COMPETITIVENESS ON FIRMS' EARNINGS QUALITY WITH BOARD OF COMMISSIONER EFFECTIVENESS AS A MODERATING VARIABLE

Jessica Anastasya Mutiarani and Vera Diyanty*
Department of Accounting, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This study examines whether product market power owned by the company and industrial competition affects the quality of firm earnings with Board of Commissioners effectiveness as a moderating variable. This study uses the product market power of the company and the industry competition to measure competition at both firm and industry level, and uses real earnings management as an indicator of earnings quality. By analyzing 651 observations of non-financial companies listed on the Indonesia Stock Exchange during the period 2015–2016, the results show that product market power does not influence the actions of managers in real earnings management. At the industry level, the greater the industry competition the higher the level of earnings management. Industry competition is measured using the Herfindahl–Hirschman Index. The effectiveness of the Board of Commissioners is also found to reduce the possibility of earnings management by a company that is influenced by product market power. This study provides information on the quality of firm earnings based on external factors such as product market power and industrial competition as well as insights for regulators to consider when creating industry competition policies.

* Corresponding Author's E-mail: vera.diyanti@ui.ac.id.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:38.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 15

THE EFFECT OF PRODUCT MARKET POWER AND INDUSTRY COMPETITIVENESS ON FIRMS' EARNINGS QUALITY WITH BOARD OF COMMISSIONER EFFECTIVENESS AS A MODERATING VARIABLE

Jessica Anastasya Mutiarani and Vera Diyanty*
Department of Accounting, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This study examines whether product market power owned by the company and industrial competition affects the quality of firm earnings with Board of Commissioners effectiveness as a moderating variable. This study uses the product market power of the company and the industry competition to measure competition at both firm and industry level, and uses real earnings management as an indicator of earnings quality. By analyzing 651 observations of non-financial companies listed on the Indonesia Stock Exchange during the period 2015–2016, the results show that product market power does not influence the actions of managers in real earnings management. At the industry level, the greater the industry competition the higher the level of earnings management. Industry competition is measured using the Herfindahl–Hirschman Index. The effectiveness of the Board of Commissioners is also found to reduce the possibility of earnings management by a company that is influenced by product market power. This study provides information on the quality of firm earnings based on external factors such as product market power and industrial competition as well as insights for regulators to consider when creating industry competition policies.

* Corresponding Author's E-mail: vera.diyanti@ui.ac.id.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:45.

Keywords: product market power, industry competitiveness, earnings quality, board of commissioners, real earnings management, corporate governance, market structure, firm strategy, market performance, industrial structure

INTRODUCTION

In an increasingly competitive market, companies are required to have superior strategies, resources, and performance among others in the same industry or market to gain market share and become a market leader. As an emerging market, Indonesia has both high potential and high competitiveness. This is indicated by the advances of Indonesia's Global Competitiveness Index 2017–2018 ranking by five places to 36 of 137 countries the (World Economic Forum, 2017); thus, Indonesia's position at the global level demonstrates that market conditions in Indonesia are increasingly competitive. Therefore, under increasingly competitive market conditions, it is necessary for the company to have a competitive advantage in the market (Teece, 2010): competitive advantage can be a strength for companies in the market to cope with competition within markets (Datta et al., 2013).

Product market power is defined as the ability of firms to set higher prices, but has no significant impact on the level of consumer demand (Datta et al., 2013). The strength of the market through the company's competitive advantage can be achieved through the uniqueness and quality of the product line or brand. Market power provides several benefits for the company. Among them is the company can maintain their profit margins better, should there be a change in productivity one day.

The strength of a company's market power is inseparable from the influence of the industrial structure in which it operates. Industrial structure can affect the level of competition from other companies in the industry due to several factors, such as the number of competitor companies, substitution product levels, and barriers to industry entry, and can affect profit generation. The stronger the level of competition, the greater the company's liquidation risk. This can lead to strong incentives for managers to maintain their positions; thus, they are motivated to act in a way that affects the quality of earnings (Schmidt, 1997; Dechow and Dichev, 2002). The pressure of high competition tends to encourage managers to manipulate certain goals, such as changing market perceptions (Karuna et al., 2012) and to maintain the manager's personal advantage.

One form of manipulation that is often done by a firm is earnings management. Earnings management can be differentiated into accrual earnings management and real earnings management. Accrual earnings management is choosing accounting policies that can cover or hide the actual company performance (Dechow and Skinner, 2000). Real earnings management is defined as the actions of managers that deviate from general business practices with the aim of meeting certain profit targets (Roychowdhury, 2006).

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:45.

Real earnings management activities include speeding up sales by cutting prices or providing lighter credit terms, reducing discretionary spending, and increasing production to have a low cost of goods sold (Roychowdhury, 2006). These activities are conducted with the aim of increasing the company's profit in the current period.

In reducing managers' intentions to do earnings management, to ensure that the company has implemented good governance, independent oversight is necessary (OECD, 2015). In countries that use a two-tier board system such as Indonesia, such independent monitoring is undertaken by the Board of Commissioners. The Board of Commissioners has a strategic function within the organizational structure of the company and its duties are regulated in Undang-Undang Perseroan Terbatas No. 40 year 2007. In relation to market power, the Board of Commissioners plays a role to monitor and prevent aggressive or fraudulent actions committed by management (Firth et al., 2007). This study will use the effectiveness of the Board of Commissioners to see its role in reducing real earnings management activities that are influenced by the market power of the company in Indonesia.

THEORETICAL PERSPECTIVES

Market Power

Datta et al. (2013) define market power as the ability of firms to set higher prices, but it does not have a significant impact on the amount of consumer demand, thus providing competitive advantage to the firm. Firms with high market power are considered to be able to maintain better profit margins when facing trends in the external environment (Datta et al., 2011). The magnitude of product differentiation or lack of product substitution can make the company's product more inelastic, thus, providing flexibility for the company to charge customers. In other words, product substitution increases price competition.

The advantage of a company that has market power is also evidenced by Gaspar and Massa (2006) where market power can serve as a natural hedging that can be used to reduce corporate fluctuations. The profit volatility caused by cost changes negatively affects firms with lower market power. In other words, companies tend to be more sensitive and vulnerable to cost changes. The magnitude of market power owned by the company allows investors to understand the underlying profitability of the company. Thus, improving the ability of investors to predict earnings due to the uncertainty of corporate cash flow in the future is quite low. Kale and Loon (2009) show the advantages of the company's market power in terms of liquidity. Companies that have market power show high stock liquidity, resulting in the cost of capital and lower share transaction costs.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:45.

In addition to the company's profits with great market power, there are other consequences for companies that have opposite conditions. Schmidt (1997) shows that high levels of competition can increase the risk of corporate liquidation. Managers must improve the company's financial performance and make the best decisions for the company's future because the failure of managers to do so may result in corporate bankruptcy and job losses (Chou et al., 2011). Companies with lower market power have a number of demands that tend to be volatile because they are less flexible in responding to changes in prices or consumer needs. This condition also makes the company unable to follow price competition from other companies in the industry.

Porter's Five Forces Theory

Porter (1985) developed a conceptual framework that explains the five forces that affect the level of competition within an industry. In an effort to gain a large market share, competition not only comes from competing companies but also can be influenced by economic conditions as well as other factors contained in certain industries. Consumers, suppliers, entry potentials of new companies, and substitution products are competitive forces that can more or less influence competition depending on the nature of the industry in which the company operates. The five forces that can affect competition in the industry have different characteristics, namely:

Threat of New Entry

New companies entering an industry bring the capacity and desire to gain market share. This can put pressure on price, production cost, and the level of investment needed to compete. The existence of a new company can hamper the profit potential of companies that already exist in the industry.

Bargaining Power of Supplier

Powerful suppliers may profit by charging higher prices, limiting the quality or service, or transferring costs to companies in the industry. Strong suppliers, including for labor, can gain more profit from the industry that is unable to continue its own cost increase.

Bargaining Power of Consumer

Consumers can take advantage of pressing prices, demanding better quality or more service (increasing corporate costs), and generally affecting every company in the industry that affects the industry's profitability. Consumers have a strong influence if they have given a relative influence to companies in the industry.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:45.

Threat of Substitute Product

When the potential for substitution products is high, industry profitability can be disrupted. Substitution products may limit the profit potential by imposing a price below the market price (ceiling price).

Rivalry among Existing Competitors

Competition between existing companies can be done in various ways such as discounts, creating new products, marketing, and service improvement. The high level of competition can hamper profits in the industry.

Agency Theory

Managers' actions in affecting earnings quality through manipulation also aim at maintaining managers' utility because there is a conflict of interest between managers acting as agents and shareholders as principals. The agency concept described by Jensen and Meckling (1976) reveals that managers do not always act to fulfill the interests of the principals but also to maximize the manager's personal utility. With the authority that managers have in making decisions, managers can act as if they fulfill the principal's interests. The agency problem resulting from a conflict of interest raises the costs of the principal to ensure that the manager acts in the best interests of the principal and reduces the transfer of company wealth to the manager's welfare.

In ensuring that managers are always acting on the principal's behalf, the principal also forms protection through remuneration mechanisms (Godfrey et al., 2010). Under such a mechanism, managers are remunerated based on the extent to which the manager's behavior is in line with the expectations of the principal. The remuneration mechanism makes managers also bear the cost of the principal-formed protection because the manager receives a small amount of remuneration if they do not act according to the principal's expectations; therefore, the manager will work hard to maintain their welfare even though the incentive leads the manager to manipulation. The manager manipulates the principal to judge the manager has worked to increase the value of the company through the profit obtained. This causes the information presented as profit to possibly not represent the actual situation.

Real Earnings Management

Schipper (1989) became the first to incorporate real earnings management in defining earnings management. It is said that earnings management is a deliberate intervention in the process of presenting financial statements with a view to personal gain, one of which

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:45.

can be done by changing the investment time or other financing decision to change the reported profit or some part of it, or so-called "real earnings management." Roychowdhury (2006) also defines real earnings management with the same understanding of manager actions that deviate from general business practices aimed at achieving specific profit targets. Based on this definition, real earnings management stems from the company's operational activities, which are then driven by the manager's desire to mislead some stakeholders to believe that certain objectives in the financial statements have been achieved through the company's operational activities. Some methods of manipulation through real activity, such as price cuts and discretionary spending reductions, may be considered the best course of action in the face of certain economic situations. However, if managers engage in these activities more widely than normal and knowingly intend to meet certain profit targets, it is considered to be real earnings management.

Corporate Governance

Corporate governance is a mechanism that aims at creating market confidence and business integrity; thus, it is important for companies that need access to capital markets for long-term investments (OECD, 2015). Corporate governance is considered essential to create an efficient, transparent, and harmonized market in accordance with legislation (KNKG, 2006), and serves as a link between the company and all share/stakeholders to determine and guide the company's strategy and performance. The implementation of good governance is deemed to reduce agency problems between managers as agents and shareholders as principal due to supervisory functions that limit manager behavior to maximize personal well-being (Godfrey et al., 2010). This supervision power restricts managers to act in the best interests of the principal.

In a two-tier board system, such as in Indonesia, the supervisory function is undertaken by the Board of Commissioners. The management of the company between the Board of Commissioners and the Board of Directors has different functions and responsibilities but has the same objective of maintaining long-term company sustainability (KNKG, 2006). Under the Undang-Undang Perseroan Terbatas No. 40 year 2007 article 108, the Board of Commissioners oversees the management policy, the running of the company and the business of the company, and gives advice to the Board of Directors. Thus, it can be said that the Board of Commissioners is responsible for supervising managerial performance and reducing conflicts of interest so that the company can perform well. Thus, the oversight function undertaken by the Board of Commissioners becomes an important component of corporate governance to prevent managers from taking aggressive or manipulated actions caused by various internal and external factors.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:45.

HYPOTHESIS DEVELOPMENT

The extent to which firms have the ability to follow the price competition potentially affects the level of earnings management for several reasons (Datta et al., 2013). First, price power can be a mechanism that protects companies in the face of unexpected changes in the market by charging consumers, reducing fluctuations in cash flows, and, thereby, reducing the need for earnings management. Second, given the fact that the market will penalize if the company does not achieve earnings expectations, companies with weak price strengths will tend to manipulate through earnings management to meet market expectations.

In addition to the situation enjoyed by companies with large market power, there are other consequences for companies that have to face pressure to achieve profit targets. Companies with low market power will have higher distress; thus, one way to overcome these is through earnings management. Datta et al. (2013) uses an accrual approach in testing the effect of market power on earnings management and shows that firms with low market power have high levels of earnings management. However, it is possible that managers will also use earnings management for real activities to reduce fluctuations in earnings and affect stock prices (Graham et al., 2005).

H1: The company's market power negatively affects its real earnings management.

The industrial structure in which the company operates can influence the extent to which the company can generate profits. The industrial structure includes the number of competitor companies in the industry, the potential for entry of new entrants, and substitution products to the bargaining power of consumers and suppliers (Porter, 1985). The level of competition in the industry also makes the company compete to get favorable and limited financing from the capital market (Hoberg and Phillips, 2010). The amount of pressure created by the market and the expectations of shareholders on the performance of firms encourage managers to engage in earnings management activities. Managers will take actions that can improve the viability of companies in the industry, affect financing to improve liquidity (Feinberg, 1995), and increase competitive advantage (Christie et al., 2003). Real earnings management is more difficult to detect by auditors and regulators, thus, providing less risk than accruals. Therefore, in the face of pressure in industrial competition, companies in competitive industries are expected to earn profit through real earnings management.

H2: Industry competition has a positive effect on the real earnings management of the company.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:45.

The role of the Board of Commissioners is to conduct supervisory functions on how the company aims to increase transparency and reduce conflicts of interest of managers. The Board of Commissioners may also provide advice or views deemed necessary to the Board of Directors related to the interests of the company (KNKG, 2006). Thus, it can be said that the Board of Commissioners can serve to ensure the long-term sustainability of the company. Therefore, effective supervision by the Board of Commissioners, in addition to creating good corporate governance, is also thought to affect the strength of the company in the market.

Dechow et al. (2010) states that if managers are monitored more carefully, managers will have less chance of using earnings management. The motivation of managers in using earnings management can be triggered by various factors both market expectations and the manager's desire to maximize personal utility. Although real earnings management is considered more difficult to detect, effective oversight by the Board of Commissioners can limit managers' aggressive action. Therefore, the oversight function of the Board of Commissioners is expected to strengthen the negative relationship between market power and earnings management.

H3: Effectiveness of the Board of Commissioners strengthens the negative relationship of market power to the real earnings management of the company.

The effectiveness of the Board of Commissioners is also expected to weaken the positive relationship between industry competition and real earnings management because the effectiveness of the Board of Commissioners of each company shows the quality of governance. A good quality of governance indicates that the company does not carry out aggressive earnings management in achieving certain objectives. Therefore, the quality of governance reflects the effectiveness of the Board of Commissioners from every company in the industry as they are expected to create healthy competition in the industry to keep real earnings management at a low level. Although based on Undang-Undang Perseroan Terbatas No. 40 years 2007, the Board of Commissioners is only authorized to conduct supervision; however, Boards of Commissioners in Indonesia are expected to have a significant role in improving the quality of corporate governance including the reduction of earnings management.

H4: Effectiveness of the Board of Commissioners weakens the positive relationship of industry competition to the real earnings management of the company.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:45.

DATA AND METHODS

This study uses non-financial companies listed on the Indonesia Stock Exchange during the period 2015–2016 as the study population. The selection of the period 2015–2016 is due to the completeness and novelty of data of companies listed on the Indonesia Stock Exchange. This study also uses secondary data obtained from several sources such as the company's annual report and Thomson Reuters from the FEB UI Economic and Business Data Center (PDEB). In addition, this study uses journals and theses as references in formulating the theory used.

Research Model

The following model is used to test Hypotheses 1 and 2:

$$REMi,t = \beta_0 + \beta_1 MPi,t + \beta_2 INDCOMPi,t + \beta_3 COMMi,t + \beta_4 SIZEi,t + \beta_5 LEVi,t + \beta_6 MBVi,t + \beta_7 ROAi,t + \varepsilon i,t$$

The following model is used to test Hypotheses 3 and 4:

$$REMi,t = \beta_0 + \beta_1 MPi,t + \beta_2 (MP*COMM)i,t + \beta_3 (INDCOMP*COMM)i,t + \beta_4 INDCOMPi,t + \beta_5 COMMi,t + \beta_6 SIZEi,t + \beta_7 LEVi,t + \beta_8 MBVi,t + \beta_9 ROAi,t + \varepsilon i,t.$$

Dependent Variable

The dependent variable used in this study is real earnings management. The measurement of real earnings management in this study uses a model introduced by Roychowdhury (2006):

Measurement of Abnormal Production

$$PRODt/At\text{-}1 = \alpha 0 + \alpha 1(1/At\text{-}1) + \alpha 2(St/At\text{-}1) + \alpha 3(\Delta St/At\text{-}1) + \alpha 4(\Delta St\text{-}1/At\text{-}1) + \varepsilon t$$

PRODt is the cost of goods sold in year *t* and changes in inventory amount in year *t* of *t*−1; *A*t−1 represents total assets in year *t*−1; *S*t is sales in year *t*; Δ*S*t is a sales change from year *t* to year *t*−1.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:45.

Measurement of Abnormal Discretionary Expenses

$$DISXt/At\text{-}1 = \alpha 0 + \alpha 1(1/At\text{-}1) + \alpha 2(St\text{-}1/At\text{-}1) + \varepsilon t$$

*DISX*t is total discretionary expenses such as advertising costs, R&D, and SG&A costs. This measurement uses *S*t−1 to prevent the possibility of very low residual values when the firm increases sales to increase earnings in that period even though the company does not reduce discretionary costs (Roychowdhury, 2006).

This study uses only abnormal production cost measurement and abnormal discretionary cost reduction as previous research done by Zang (2012). Both earnings management activities are then summed as a proxy measure of real earnings management.

Independent Variable

Market Power

Market power, also called "pricing power," is measured using the Lerner Index, or price–cost margin and can be calculated through

$$PCM = LI = \frac{Sales - COGS - SG\&A}{Sales} \quad (1)$$

However, measurement using the Lerner Index or price–cost margin alone is considered unable to separate company-specific factors that may affect the price power in the market within the industry. The above metrics may fluctuate due to industry-specific factors that are unrelated to the firm's price strength and different profit margin structures in each of the indices. Therefore, to measure the association of earnings management with the market power of firms in the industry, the industry-adjusted Lerner Index is used to capture the market power of the company specifically. Thus, the industry-adjusted Lerner Index is the difference of the company's price–cost margin with the average sales and price–cost margin of all companies in the industry. Industry-adjusted measurements of the Lerner Index can be formulated into

$$\text{Market Power} = LIi - \sum_{i=1}^{n} \omega i LIi \quad (2)$$

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:45.

Information:
LIi = Lerner Index in Equation (1) for firm *i*
ωi = Proportion of sales of firm *i* to total industry sales
N = Number of companies in the industry

Industry Competition

The second dependent variable in this study is industrial competition. High industry competition affects the company in obtaining profit. Thus, a high level of competition in an industry can influence a company to use earnings management in order to increase company value (Datta et al., 2013; Karuna et al., 2012). Measurement of the level of competition in the industry uses INDCOMP as measured using the Herfindahl–Hirschman Index (Datta et al., 2013). The Herfindahl–Hirschman Index measures the level of concentration within an industry and uses the market share level of companies in the industry. A smaller value of the Herfindahl–Hirschman Index shows that more competitive companies exist in the industry, creating more intense competition. In contrast, a larger Herfindahl–Hirschman Index indicates that only a few large companies dominate the industry, making the level of competition in the industry low. The Herfindahl–Hirschman Index can be calculated through:

$$\text{H-index}_i = \sum_{j=1}^{J} s_{ij}^2,$$

Information:
Sij = Market share listed company in industry

Moderating Variables

In assessing the effectiveness of the Board of Commissioners, scoring refers to the ASEAN Corporate Governance Scorecard introduced by the ASEAN Capital Market Forum. Assessment through scoring will be compiled with questions relating only to the Board of Commissioners. The questions to be used in this scoring are only in the aspect of the responsibility of the board. Thus, there are 59 questions used out of a total of 63 questions where each question is given a value of 1 if it meets the requirement and 0 otherwise. The higher the company's score the more effective the Board of Commissioner's oversight.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:45.

Control Variables

There are several control variables that used in this study. Those are company size, leverage, market-to-book value, and ROA. Company size becomes the control variable in this research to observe business complexity. In measuring company size, this study uses the natural logarithm of total sales. Total sales are used as a company's measure to capture its ability to compete (Dang et al., 2018). Leverage levels can make managers tend to manipulate through earnings management if the company is unlikely to meet the debt agreement. The leverage rate is measured by dividing total debt by total assets (Klein, 2002; Stelk, 2017). Measurements of growth opportunities include the market-to-book value as calculated based on the ratio of the firm's market capitalization to the firm's book value (Datta et al., 2013). This study also includes return on assets (ROA) as a control variable in measuring company performance.

RESULTS

Descriptive Statistics Analysis

As seen below, Table 1 shows descriptive statistics for each variable. Market power (MP) is an independent variable intended to describe the market power owned by the company. The greater the MP that the company has in its industry indicates the ability of the company to earn profits among its competitors and vice versa.

INDCOMP is a proxy for measuring competition at the industry level. It was mentioned earlier that the MP of the company is inseparable from the industrial conditions in which the company operates. Therefore, industry-level measurements are also conducted to capture the conditions of competition more broadly. INDCOMP measures the level of industry competition by looking at industry concentration levels using the Herfindahl–Hirschman Index. A greater the index value indicates that there are only a few large companies that control the industry. Thus, the level of competition in the industry can be quite low. By contrast, a smaller index value indicates many competitive firms in the industry and none dominate the market. Thus, the level of competition in the industry tends to be more intense. The smaller value also indicates that each firm in the industry has a small market share only. Thus, the level of industry concentration tends to spread to more companies. The spread of industrial concentration gives greater opportunities for companies to achieve the highest profits and dominate the market.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:45.

Table 1. Descriptive Statistics

Variable	Obs	Mean	Median	Min	Max	StDev	Skewness
REMTOTAL	651	- 0.034924	0.001260	- 0.985309	0.921391	0.316379	- 0.913336
MP	651	- 0.045826	- 0.024625	- 1.947770	1.523566	0.276209	- 2.758274
INDCOMP	651	0.176131	0.056344	0.029900	0.717968	0.222822	1.669225
COMM	651	0.429092	0.4126984	0.142857	0.857142	0.123796	0.436718
SIZE	651	6 Trillion	1 Trillion	99 Million	206 Trillion	16 Trillion	6.448529
LEV	651	0.2445100	0.2320540	0	0.8088766	0.18707413	0.4494608
ROA	651	0.0630806	0.0555010	-0.718568	0.64061696	0.10247956	0.6732277
MBV	651	2.714284	1.286654	0.007695	38.18727	4.892043	4.930354

Information: REMTOTAL: Total abnormal production costs and abnormal discretionary expense; MP: Market power; INDCOMP: Industry competition measured by Herfindahl–Hirschman Index. COMM: Effectiveness of the Board of Commissioners as measured using the ASEAN CG Scorecard scoring and is proportional to the maximum value; SIZE: Company size is measured using the natural logarithm of sales; LEV: ratio of total debt to total assets; ROA: Measure of company performance using return on assets; MBV: Market-to-book value that describes the growth of the company.

Table 2. Regression Result Model 1

Variable	Prediction	Coefficient	Prob t-stat
MP	-	- 0.0200921	0.3585
COMM	-	- 0.0258178	0.0075***
INDCOMP	-	- 0.1858204	0.006***
SIZE	+	0.0540811	0.000***
LEV	+/-	0.141443	0.0115**
ROA	+/-	- 0.5362885	0.000***
MBV	+/-	- 0.0072891	0.017**
CONS		- 1.389956	0.000
R Squared	0.1426		
Prob >F	0.0000		
Obs	651		

Information: **REMTOTAL:** Total of abnormal production costs and abnormal discretionary expense; **MP:** Market power; **INDCOMP:** Industry competition measured by Herfindahl–Hirschman Index; **COMMS:** Effectiveness of the Board of Commissioners is measured through ASEAN CG Scorecard scoring and is proportional to the maximum value; **SIZE:** Company size is measured using the natural logarithm of sales; **LEV:** Ratio of total debt to total assets; **ROA:** Measures of company performance use return on assets; **MBV:** Market-to-book value that describes the growth of the company.

COMM is the effectiveness of the supervision of the Board of Commissioners and is the moderating variable. This study examines whether the effectiveness of the role of the Board of Commissioners in conducting supervision affects the relationship of market forces to the company with real earnings management.

Hypothesis Testing

The Influence of Market Power to Real Earnings Management

Based on hypothesis testing on Model 1 that can be seen on Table 2, the regression results show that MP has no effect on REMTOTAL. This shows that MP owned by the company alone does not affect the actions of managers in real earnings management. In

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:45.

addition, it also shows that companies in Indonesia do not have MP that can make companies set prices higher. In the absence of firms that charge higher prices to put pressure on competing companies, it does not trigger real earnings management activities. When the MP of companies tends to be low, companies in Indonesia tend to be price-takers instead of price-makers. If viewed from the perspective of competitive advantage, the competitive advantage owned by companies in Indonesia is ineffective in promoting the company to dominate the market.

MP is defined as the ability of a firm to set a higher price, but it does not affect the amount of demand from its customers (Datta et al., 2013). In other words, MP reflects the ability to earn higher returns than rival firms in an industry. Every company wants to achieve the highest profit. Profit earnings achieved by the company can describe the productivity and efficiency of the company. Companies with high MP can arise through competitive advantage that is difficult for competing companies to imitate. Competitive advantage of the company can be shaped in several ways. First, the company can have competitive advantage through the quality and uniqueness of the products owned. The quality and uniqueness of the company's products that are difficult to imitate by other companies can bind consumer confidence so that the company has a larger consumer group. Competitive advantage can also be achieved by the company through product differentiation. In addition, Porter (1985) describes competitive advantage for first-mover companies in an industry. Firms that are first-movers in an industry can have a difficult advantage for new entrant companies to surpass. This advantage is not in the context of a company's ability to achieve economies of scale. The advantages in question are, for example, distribution channels, access to preferred raw materials, technology ownership, superior geographical location, and the company's experience to learn how to produce efficiently. Competitive advantage of the company can also exist through lower production costs so that the company can achieve economies of scale. By having various forms of competitive advantage, the company can have a high MP and become an industry leader.

The Influence of Industrial Competition to Real Earnings Management

Based on data that described in Table 2, industrial competition has a positive effect on real earnings management. The results of this test support Hypothesis 2, namely, higher levels of industry competition induce higher real earnings management. The level of industry competition is measured using the Herfindahl–Hirschman Index in each industry classified according to JASICA *(Jakarta Stock Industrial Classification).* The level of concentration of an industry can indicate whether the industry has perfect competition or tends to be monopolistic. Therefore, it can be interpreted that a lower Herfindahl–Hirschman Index value indicates that the level of concentration is spreading and there are many competitive companies in the industry so that the level of competition is increasingly high. Conversely, a higher the Herfindahl–Hirschman Index value shows

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:45.

company concentration to be centralized with only a few companies that have market share; thus, the level of competition in the industry tends to be low. Therefore, it can be concluded that the Herfindahl–Hirschman Index value has a negative influence on the level of competition so that INDCOMP has a negative effect at $\alpha = 1\%$ with a *p*-value of 0.006.

Competition conditions at the industry level become one of the factors that can affect the performance of the company. Porter (1985) describes five forces capable of forming competition at the industry level, starting with new entrants, suppliers, consumers, and substitution products to competition between companies that already exist in the industry. Therefore, the conditions of competition in an industry affect the extent to which the company can make a profit and, then, determine the best strategy for the company. The more intense the industry competition, the greater the pressure on the company to achieve the maximum profit. In addition, companies compete for funding from limited capital markets. Thus, the intensity of industrial competition is expected to affect the company's earnings management activities.

In Indonesia, the Business Competition Supervisory Commission (KPPU) ensures the absence of monopolistic practices undertaken by companies and prevents unhealthy business competition. The function and purpose of KPPU are regulated in Law Number 5 Year 1999. With this level of supervision and management of business competitive practices, it is expected every company can compete efficiently and effectively without any pressure to use earnings management aggressively. The prevention of monopolistic practices provides an opportunity for every company to maximize profits in the absence of a dominating firm. Therefore, the existence of regulation and supervision to the condition of competition in Indonesia is expected to reduce earnings management.

Effect of Effectiveness of Board of Commissioner as a Moderating Variable

Based on the results of regression testing on Model 2 that showed in Table 3, the effectiveness of BOC supervision proved able to strengthen the negative relationship between MP and real earnings management. In other words, the supervision of the Board of Commissioners may limit the conflict of interest of managers to use earnings management in order to meet their personal welfare. The existence of separate committees, such as the Audit Committee and the Nomination & Remuneration Committee, is one of the components that can assist the effectiveness of the supervision of the Board of Commissioners. This is also shown by Laux and Laux (2009) where the existence of separate committees responsible for the supervision and compensation of CEOs can reduce earnings management. Although real earnings management has characteristics that are difficult to detect because managers have considerable authority over the company's operational decisions, it turns out that the supervisory role of the Board of Commissioners can reduce the chances of managers using earnings management. The effective supervisory function of the Board of Commissioners can then

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:45.

improve the quality of corporate governance. By providing advice or views deemed necessary to the Board of Directors (KNKG, 2006), the existence of the Board of Commissioners component helps maintain the company's long-term sustainability.

Therefore, the supervisory function of the Board of Commissioners is one of the mechanisms to restore and integrate the manager's performance objectives by fulfilling the company's interests and maximizing the company's performance.

Table 3. Regression Result Model 2

Variable	Prediction	Coefficient	Prob t-stat
MP	-	0.4131511	0.0105**
COMM	-	- 0.3360959	0.035***
MP*COMM	-	- 1.139285	0.0065***
INDCOMP*COMM	-	0.415811	0.247
INDCOMP	-	- 0.3482955	0.1025
SIZE	+	0.0517939	0.000***
LEV	+/-	- 0.1335891	0.016**
ROA	+/-	- 0.5182289	0.000***
MBV	+/-	- 0.0069483	0.019**
CONS		- 1.289641	0.000
R Squared	0.1554		
Prob >F	0.0000		
Obs	651		

Information: **REMTOTAL:** Total of abnormal production costs and abnormal discretionary expense; **MP:** Market power; **INDCOMP:** Industry competition measured by Herfindahl–Hirschman Index; **COMMS:** Effectiveness of the Board of Commissioners is measured through ASEAN CG Scorecard scoring and is proportional to the maximum value; **SIZE:** Company size is measured using the natural logarithm of sales; **LEV:** Ratio of total debt to total assets; **ROA:** Measures of company performance use return on assets; **MBV:** Market-to-book value that describes the growth of the company.

The last hypothesis tested explored whether the effectiveness of the Board of Commissioners is able to weaken the positive relationship between the industry competition and the real earnings management activity. The effectiveness of the Board of Commissioners is expected to improve the quality of corporate governance, which can then reduce earnings management of every company in the industry. The quality of good corporate governance from every company in the industry is then expected to reduce the level of real earnings management in the industry, which is influenced by the level of competition in the industry. Based on the results of regression testing on Model 2, the regression results show that INDCOMP*COMM has no effect on REMTOTAL. Thus, it can be said that the Board of Commissioners cannot reduce the level of real earnings management that is influenced by industry competition. This is because the Board of Commissioners is not having a significant role in influencing the level of competition in the industry. The Board of Commissioners only supervises within the scope of the company. Therefore, external factors such as industrial competition are something that cannot be determined only from the quality of the governance of each company. As Porter (1985) explained that the forces that make up industrial competition come from

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:45.

external factors such as threat of new entry, bargaining power of supplier, bargaining power of consumer, threat of substitute product, and rivalry among existing competitors.

CONCLUSION

This study aimed to obtain empirical evidence in view of the influence of the market power of the company and the level of industrial competition on real earnings management activities. Market power illustrates the extent to which companies are able to earn higher profits than competing companies. Industrial competition is also one of the factors that affect the performance of the company because the higher the level of competition the more challenges that companies face to obtain maximum profit. In addition, this research also uses the role of supervision of the Board of Commissioners to see its influence on the relationship of market forces and real earnings management.

The results of this study have not succeeded in proving market power affecting managers performing real earnings management. It does show that Indonesian firms still tend to be price-takers instead of price-makers. Industry competition in this research uses the Herfindahl–Hirschman Index, which has negative correlation with the level of competition. A lower Herfindahl–Hirschman Index value shows many competitive companies and increasing competition. Increasingly intense industry competition provides greater challenges and obstacles to the company's profitability. It can then trigger a real earnings management action by the company to maintain the desired profit level. This test is in accordance with the hypothesis that has been developed. For the third hypothesis, effective oversight by the Board of Commissioners' can strengthen the negative influence between market forces and real earnings management. This indicates that better quality supervision conducted by the Board of Commissioners can reduce the aggressive actions of managers such as earnings management. Finally, the results of this study have not succeeded in proving that the Board of Commissioners can weaken the positive relationship between the industry competition and the real earnings management activity. This is because the Board of Commissioners does not have the authority to influence the level of industry competition. The Board of Commissioners only has the authority to supervise only within the scope of the company.

REFERENCES

Chou, J., Ng, L., Sibilkov, V. & Wang, Q. (2011). Product market competition and corporate governance. *Review of Development Finance*, *1*(2), 114-130.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:45.

Christie, A. A., Joye, M. P. & Watts, R. L. (2003). Decentralization of the firm: theory and evidence. *Journal of Corporate Finance*, *9*(1), 3-36.

Dang, C., Li, Z. F. & Yang, C. (2018). Measuring firm size in empirical corporate finance. *Journal of Banking & Finance*, *86*, 159-176.

Datta, S., Iskandar-Datta, M. & Sharma, V. (2011). Product market pricing power, industry concentration and analysts' earnings forecasts. *Journal of Banking & Finance*, *35*(6), 1352-1366.

Datta, S., Iskandar-Datta, M. & Singh, V. (2013). Product market power, industry structure, and corporate earnings management. *Journal of Banking & Finance*, *37*(8), 3273-3285.

Dechow, P. M. & Dichev, I. D. (2002). The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review*, *77*(s-1), 35-59.

Dechow, P. M. & Skinner, D. J. (2000). Earnings management: Reconciling the views of accounting academics, practitioners, and regulators. *Accounting Horizons*, *14*(2), 235-250.

Dechow, P., Ge, W. & Schrand, C. (2010). Understanding earnings quality: A review of the proxies, their determinants and their consequences. *Journal of Accounting and Economics*, *50*(2-3), 344-401.

Feinberg, R. M. (1995). In defense of corporate myopia. *Managerial and Decision Economics*, *16*(3), 205-210.

Firth, M., Fung, P. M. & Rui, O. M. (2007). Ownership, two-tier board structure, and the informativeness of earnings–Evidence from China. *Journal of Accounting and Public Policy*, *26*(4), 463-496.

Gaspar, J. M. & Massa, M. (2006). Idiosyncratic volatility and product market competition. *The Journal of Business*, *79*(6), 3125-3152.

Godfrey, J., Hodgson, A., Tarca, A., Hamilton, J. & Holmes, S. (2010). *Accounting Theory*.

Graham, J. R., Harvey, C. R. & Rajgopal, S. (2005). The economic implications of corporate financial reporting. *Journal of Accounting and Economics*, *40*(1-3), 3-73.

Hoberg, G. & Phillips, G. (2010). Product market synergies and competition in mergers and acquisitions: A text-based analysis. *The Review of Financial Studies*, *23*(10), 3773-3811.

Jensen, M. C. & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305-360.

Kale, J. R. & Loon, Y. C. (2009). Market power and stock liquidity. Working Paper. Georgia State University.

Karuna, C., Subramanyam, K. R. & Tian, F. (2012). Industry product market competition and earnings management. In *American Accounting Association Financial Accounting and Reporting Section Mid-Year Conference*.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:45.

Klein, A. (2002). Audit committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics*, *33*(3), 375-400.

KNKG. (2006). *Pedoman Umum Good Corporate Governance di Indonesia* [*General Guidelines for Good Corporate in Indonesia*].

Laux, C. & Laux, V. (2009). Board committees, CEO compensation, and earnings management. *The Accounting Review*, *84*(3), 869-891.

OECD. (2015). Principle of Corporate Governance.

Porter, M. E. (1985). Competitive advantage: creating and sustaining superior performance. 1985. *New York: FreePress*, *43*, 214.

Regulation Undang-Undang Perseroan Terbatas, UU No. 40 tahun 2007.

Roychowdhury, S. (2006). Earnings management through real activities manipulation. *Journal of Accounting and Economics*, *42*(3), 335-370.

Schipper, K. (1989). Earnings management. *Accounting Horizons*, *3*(4), 91.

Schmidt, K. M. (1997). Managerial incentives and product market competition. *The Review of Economic Studies*, *64*(2), 191-213.

Skinner, D. J. & Sloan, R. G. (2002). Earnings surprises, growth expectations, and stock returns or don't let an earnings torpedo sink your portfolio. *Review of Accounting Studies*, *7*(2-3), 289-312.

Stelk, S., Park, S. H., Medcalfe, S. & Dugan, M. T. (2017). An additional analysis of estimation techniques for the degree of financial leverage. *Review of Financial Economics*, *36*(3), 220-31.

Teece, D. J. (2010). Business models, business strategy and innovation. *Long Range Planning*, *43*(2-3), 172-194.

Zang, A. Y. (2011). Evidence on the trade-off between real activities manipulation and accrual-based earnings management. *The Accounting Review*, *87*(2), 675-703.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:45.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:45.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 16

ANALYSIS OF AUDIT RISK AND AUDIT FEES OF FAMILY FIRMS IN INDONESIA

Rahmat Nugraha and Desi Adhariani*
Department of Accounting, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This study aims to analyse the impact of family ownership on audit fees and audit risk level. Using non-financial companies listed on the Indonesian Stock Exchange (IDX) from 2012 to 2014, the result shows that family ownership is not a significant determinant for audit fees. Moreover, the audit risk level is found to be significant and positively associated with family ownership, meaning that family firms tend to have a higher audit risk level. This is in line with the initial theoretical framework of family firms in Asian countries. Additional analysis is conducted by putting audit risk as a variable in the audit fee model, and the result shows that the audit risk level is not a determinant of audit fees. This finding supports the main result stating that family ownership does not impact the audit fee, regardless of the higher audit risk level of family-owned firms.

Keywords: family firms, audit fees, audit risks

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

* Corresponding Author's E-mail: desi.adhariani@ui.ac.id, desiadharis@gmail.com.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:53:53.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 16

ANALYSIS OF AUDIT RISK AND AUDIT FEES OF FAMILY FIRMS IN INDONESIA

Rahmat Nugraha and Desi Adhariani*
Department of Accounting, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This study aims to analyse the impact of family ownership on audit fees and audit risk level. Using non-financial companies listed on the Indonesian Stock Exchange (IDX) from 2012 to 2014, the result shows that family ownership is not a significant determinant for audit fees. Moreover, the audit risk level is found to be significant and positively associated with family ownership, meaning that family firms tend to have a higher audit risk level. This is in line with the initial theoretical framework of family firms in Asian countries. Additional analysis is conducted by putting audit risk as a variable in the audit fee model, and the result shows that the audit risk level is not a determinant of audit fees. This finding supports the main result stating that family ownership does not impact the audit fee, regardless of the higher audit risk level of family-owned firms.

Keywords: family firms, audit fees, audit risks

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

* Corresponding Author's E-mail: desi.adhariani@ui.ac.id, desiadharis@gmail.com.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:00.

INTRODUCTION

Auditors review and offer opinions regarding the quality of financial reporting as a way to ensure that companies report their financial statements properly and present financial statements that are free from material misstatements. In performing the audit procedures, auditors incur various costs such as gathering and verification of data; these costs can differ from one company to another, which then influences the effort of auditors in executing the audit procedure.

In Asia, family-owned firms are common and play a significant role in the economy. However, most studies focusing on family firms have been conducted in the scope of developed countries, such as the United States of America. Previous research conducted by Ghosh and Tang (2015) noted that family firms tend to have better control and information transfer flow and higher integrity, which contributes to better control inside the company (Ali et al., 2007; Wang, 2006). Family firms are believed to have lower risks in operation due to tight supervision from the owners (which is in line with the alignment effect). This level of control connects to a lower potential for audit risk, and audit firms tend to charge family firms lower prices compared to non-family firms (Ghosh and Tang, 2015).

However, family firms in Asia are complicated, with succession issues and controversies ranging from nepotism and anti-meritocracy to mishandling of stakeholders and minorities (in line with the opposite effect, namely, the entrenchment effect). These issues question whether the condition depicted in the study of Ghosh and Tang (2015) is universally applied, especially whether family firms have lower risks of an audit due to higher integrity and lower operating risks. Moreover, for developing countries in Asia like Indonesia, the nature of family firms is to keep the hierarchy of the family inside the business. A 2015 Harvard Business Review article on family firms in East Asia noted that only 30% of family firms lasted to the second generation; the majority of family firms failed to continue due to a lack of control and poor succession preparation.

This research analyses the impact of family ownership on the audit risk level and audit fees charged by auditors. First, it investigates whether family firms have lower or higher audit risks level compared to non-family firms. Second, it tests the impact of family ownership on audit fees. Third, it performs additional analysis to investigate the impact of family firms' audit risk on audit fees.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:00.

THEORETICAL FRAMEWORK

Hofstede's Theory

This study uses Hofstede's cultural dimension theory to challenge the facts and assumptions in studies on the conditions and characteristics of family firms in the context of developed countries. Hofstede's theory states that, in society, culture has an effect on the values of its members, which is related to the behavior of people in that region (Hofstede, 2015).

Hofstede's cultural dimension theory implies that the Western culture focuses more on the dimension of individualism, where independence is emphasized in all forms of living. For example, in family businesses and company succession, Western culture promotes meritocracy and personal capacity; Westerners tend to neglect the entitlement of family in the context of selecting or recruiting people to be part of a company. In contrast, Asian cultures promote collectivism, especially close relations between people and involving family and colleagues in all forms of life. This includes business operation and succession. Collectivism also relates to loyal relationships between people, supporting others in times of conflict or decision-making, exemplifying the close bond of a family. Moreover, in Asian cultures, positions and entitlement are sacred, whereas, in Western cultures, people tend to have lower power distance, meaning that people relate to each other as relatively equals, regardless of position. When companies recognize a high power distance, the owner's family has a very distinctive recognition within the company and may hold major power inside the firms. This could be vulnerable to the abuse of power and priority of self-interest.

Furthermore, Western culture has a longer-term orientation, in which various outcomes are considered in a long-term scenario. In the context of family firms, the selection of family for succession within Asian firms is seen as a shift of mandate to the next generation of family; meanwhile, in Western firms, succession is seen as an integral part of a company's future, a continuance to survive, and as a basis of the going concern principle of the company. This difference in perspective separates the way companies work and organize businesses in different cultures as explained by Hofstede's theory. Hence, this study argues that because of the different cultures, the level of control and risk are different in Asian firms, which impacts the audit risk and audit fees.

Family Firms

The definition used for this particular study comes from Arifin (2003), who defines a family firm as all individuals and listed companies, except foreign companies, public

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:00.

companies, nation, financial institutions, and public entities. The reason for the exclusion of foreign companies is that a foreign company can be public in other countries, but not in Indonesia. This definition better encapsulates the dimension of family ownership and is used to locate and obtain the data for this study.

Family Firms in Indonesia

As the largest economy in Southeast Asia, Indonesia's wealthiest billionaires have come from family businesses. The contribution of family businesses to the national income is tremendous (BBC, 2014). In Indonesia, until 2014, almost 95% of businesses could be classified under the category of family firms. Moreover, in Southeast Asia, 60% of public companies (Tbk) are family firms (PwC Indonesia Report, 2014). Family firms have a strong influence on the shaping of culture in Indonesian society; in the context of firms, family involvement cannot be separated from educational level and human development.

Hypothesis Development

Hypothesis 1

Although previous studies showed that the impact of family firms on audit risk level is negative, implying that family firms possess a lower audit risk than non-family firms (Ghosh & Tang, 2015), that study took place in Western countries. Based on Hofstede's theory, this study predicts possible differences in the behavior and characteristics of family firms in Asia countries, especially Indonesia. Based on cultural differences, this study expects to see a different impact: that family firms in Indonesia would have a higher audit risk level. From this explanation, the first hypothesis is:

H1: The audit risk of family firms is higher than that of non-family firms.

Hypothesis 2

The fees paid to audit providers reflect the financial reporting quality of a company since auditors determine a fee after a preliminary investigation of the firm's financial report. Furthermore, Ghosh and Tang (2015) found that audit risk plays an important role in determining audit pricing because the risk level reflects the amount of effort an auditor must make in performing the audit service.

Although Ghosh and Tang (2015) also suggested that family firms have lower audit fees compared to non-family firms, as mentioned earlier, their study reflected the characteristics of Western firms. The significant and contrasting nature of family firms in

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:00.

Asian and Western countries, including the existence of nepotism, anti-meritocracy systems, and the priority of the family's interests, leads to the next hypothesis. To test whether family firms in Indonesia have higher audit fees than non-family firms, Hypothesis 2 is as follows:

H2: The audit fees of family firms are higher than those of non-family firms.

After testing Hypothesis 1 with Model 1 and Hypothesis 2 with Model 2, the study will try to metric an additional model to strengthen the results of the first two models. The study will map the connection between the two models by plotting Model 1 into Model 2.

RESEARCH METHOD

Model 1

The first model tests the dependent variable of audit risk (RISK), with a focus on seeing whether being a family firm (FAMILY) has an implication on the level of audit risk; this model was first introduced by Dechow and Dichev (2002). Model 1 is as follows:

$$RISK = \beta_0 + \beta_1 FAMILY + \beta_2 SIZE + \beta_3 LEVERAGE + \beta_4 LOSS + \beta_5 CF + \beta_6 ROA + \beta_7 ROA_{-1} + \varepsilon$$

Where:
FAMILY is 1 for family-controlled firm and 0 otherwise
SIZE is total assets
LEVERAGE is the ratio of inventory to total assets
LOSS is 1 if the firm has negative income, 0 for otherwise
Cash flow (CF) is OCF/beginning total assets
ROA is the ratio of operating income to total assets
ROA-1 is one year before the current fiscal year

Model 2

Model 2, using Simunic's (1980) model, presents factors that impact the decision of pricing on audit fees. The focus of the model is to see a difference in audit fees charged

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:00.

between family and non-family firms. This research is modified due to a consideration of the accessibility of data. The model is as follows:

$$FEE = \beta_0 + \beta_1 FAMILY + \beta_2 SIZE + \beta_3 CACL + \beta_4 INVENTORY + \beta_5 ROA + \beta_6 LOSS + \beta_7 OPINION + \varepsilon$$

where (in addition to the variables explained in Model 1)

FEE is the total fee charged by the audit firm

CAtoCL is the ratio of current assets to current liabilities

INVENTORY is the ratio of inventory to total assets

OPINION is the audit opinion expressed by the auditor with 1 for an unqualified opinion and 0 for otherwise

FINDINGS

From the distribution of the data, there are some interesting things to note in the dispersion of variables. For audit risk level, the mean is distributed evenly between the minimum and maximum values of the data. In addition, the family firms have a smaller portion compared to non-family firms among the data. From the total firms in the sample, 35.06% are family firms.

Table 1. Descriptive statistics - Model 1

Variables	Mean	Median	Standard Deviation	Minimum	Maximum
RISK	0.00146	0.00133	0.0242	0.00711	0.0182
SIZE (LOG)	12.62	12.60	0.69	10.11	14.15
LEVERAGE	0.30	0.24	0.43	0	4.83
CF	-0.08	-0.01	0.78	- 10.17	0.34
ROA	0.67	0.06	0.15	- 0.93	0.95
ROA-1	0.77	0.06	0.14	- 0.51	0.95
DUMMY VARIABLES		**% of 1**		**% of 0**	
FAMILY		35.06		64.94	
LOSS		12.07		87.93	

RISK is the firm's audit risk level thorough the parsimonious accrual quality model used by Dechow and Dichev, 2002. FAMILY is the dummy variable that shows the firm as family-owned or a family firm through stock ownership, where 1 stands for family firm (ownership > 50%) and 0 for a non-family firm (ownership < 50%). SIZE is the total assets of the company. LEVERAGE is total assets/total equity. LOSS is the dummy variable from net income, where 1 stands for negative net income and 0 for positive net income. CF is the operating cash flow/beginning total assets. ROA is the return on assets (net income/total assets). ROA-1 is the ROA in the previous year. * significant at 1%, ** significant at 5%, *** significant at 10%.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:00.

Table 2. Descriptive statistics - Model 2

Variables	Mean	Median	Standard Deviation	Minimum	Maximum
FEE (LOG)	8.97	8.98	0.50	7.85	10.50
SIZE (LOG)	12.61	12.60	0.69	10.11	14.15
CACL	1.20	1.57	1.36	0.03	7.70
INVENTORY	0.13	0.09	0.14	0	0.53
ROA	0.07	0.06	0.15	-0.92	0.95
DUMMY VARIABLES		**% of 1**		**% of 0**	
FAMILY		35.06		64.94	
OPINION		69.54		30.46	
LOSS		12.07		87.93	

FEE is defined as the amount of the audit fee charged by the audit firm. FAMILY is the dummy variable that shows the firm as a family firm or family firm through stock ownership where 1 stands for a family firm (ownership > 50%) and 0 for a non-family firm (ownership < 50%). SIZE is the total asset of the company. CACL is the current ratio of the company (current asset/current liabilities). INVENTORY is the proportion of inventory from total assets. ROA is the return on assets (net income/total asset). OPINION is the opinion expressed by audit firm in the same year, expressed as a dummy variable: 1 for unqualified, 0 for other. LOSS is the dummy variable from net income: 1 for negative net income and 0 for positive net income. * significant at 1%, ** significant at 5%, ***significant at 10%.

Table 3. Regression result – Model 1

Regression Results - Model 1			
Hausman Test	**Fixed effect**	**Selected model**	**Fixed effect, Robust**
	Random effect		
Audit risk $= \beta_0 + \beta_1 FAMILY + \beta_2 SIZE + \beta_3 LEVERAGE + \beta_4 LOSS + \beta_5 CF + \beta_6 ROA + \beta_7 ROA_1 + \varepsilon$			
Dependent variable: RISK			
Variable	**Expected sign**	**Coefficient**	***p-value***
FAMILY	+	3.07	**0.000*** **
SIZE	+/-	- 1.40	0.000***
LEVERAGE	+/-	- 5.09	0.008***
LOSS	+	1.50	0.320
CF	-	- 1.10	0.544
ROA	+/-	3.97	0.015**
ROA-1	+/-	6.06	0.831
R2 (within)	**27.24%**		
F-stat	**41.36**		
p-value (F-stat)	**0.0000**		
N	**174**		

RISK is the firm's audit risk level measured through the parsimonious accrual quality model. FAMILY is the dummy variable that shows the firm as family-owned or a family firm through stock ownership, with 1 for family firm (ownership > 50%) and 0 for non-family firm (ownership < 50%). SIZE is the total assets of the company. LEVERAGE is total assets/total equity. LOSS is the dummy variable from net income, with 1 for a negative net income and 0 for a positive net income. CF is the operating cash flow/beginning total asset. ROA is the return on asset (net income/total asset). ROA-1 is the ROA of the previous year. * significant at 1%, ** significant at 5%, *** significant at%.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:00.

For Model 2, the value of the variable of FEE is distributed through its mean, which is located between the minimum and maximum values of the variable. Moreover, for the audit opinion, the data is closer to a score of 1, indicating that most of the companies, about 70%, have an unqualified opinion from their external auditors.

For Model 1, the result indicates that there are several factors that significantly influence the determination of audit risk level by the auditor. Notably, the variable FAMILY significantly influences the audit risk level. This shows that family firms possess a higher audit risks level. This is in line with this study's initial theory and the literature stating that Asian firms' characteristics and behaviors are different due to cultural differences, as explained by Hofstede. Moreover, the size of a company is also a significant factor influencing the audit risk level with a negative correlation, meaning the smaller a company, the higher its audit risks level. This might be due to the inability of a small company to establish and develop internal controls and a risk management framework to minimize its audit risk. Other significant variables are leverage and ROA. Leverage has an implication on audit risk level in a negative correlation, meaning the lower the leverage ratio, the higher the audit risk. This could be explained by saying that a higher leverage ratio resulting from higher debt, implies a firm's high reliability and credibility. Lastly, for ROA, a higher ROA indicates a growing company. In fact, a previous study in Malaysia found that managers are more likely to play with numbers to manipulate ROA for personal motives such as bonuses; thus, there may be a questionable situation and possible risk when a company has a higher ROA.

The result from Model 2 shows that FAMILY has no implication on the audit fee charged by the auditor. The insignificance of family entitlement for auditors in deciding pricing for audit service might be due to the nature of the audit market in Indonesia. The audit market in Indonesia is concentrated on Big 4 audit firms, which are Ernst and Young, Deloitte, KPMG, and PwC. From the data, most of the sample firms (listed firms in Indonesia) choose Big 4 auditors as their preferred external auditors. A study conducted by Kallapur et al. (2008) showed that the high competitiveness in the audit market might impact the ability of audit firms to charge higher audit fees, because clients may move at any time. Audit firms have low bargaining power in setting audit fees. In Indonesia, 88% of the audit market is held by the Big 4; this shows a very centralized and very competitive audit market (Anggraita et al., 2008).

In contrast, the variable that is significant in the decision in determining audit fees is SIZE, denoted by the total assets of the firm. This is aligned with the prior theoretical approach stating that a bigger company requires extensive investigation and more effort by audit firms to conduct the audit procedures. Therefore, they are subject to a higher price. Another variable that has a significant value toward determining the audit fee is INVENTORY, which has a negative correlation. This implies that companies with a low inventory proportion to total assets pay higher audit fees. This might be due to the condition where a low level of inventory to total asset poses a risk to fulfilling customer

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:00.

demand. This risk is also known as a shortage in supply and can influence a firm's level of profitability.

Table 4. Regression result – Model 2

Regression Results - Model 2			
Chow Test	**PLS**	**Selected model**	**Fixed effect, Robust**
Hausman Test	**Fixed effect**		
Breusch Pagan Test	**Random effect**		
$FEE = \beta_0 + \beta_1 FAMILY + \beta_2 SIZE + \beta_3 CACL + \beta_4 INVENTORY + \beta_5 ROA + \beta_6 LOSS + \beta_7 OPINION + \varepsilon$			
Dependent variable: FEE			
Variable	**Expected sign**	**Coefficient**	**p-value**
FAMILY	**+**	**0.010121**	**0.268**
SIZE	+	0.2629314	0.002***
CACL	-	0.0320147	0.344
INVENTORY	+/-	- 0.6309227	0.064*
ROA	+/-	0.0563751	0.479
OPINION	+/-	- 0.0418142	0.269
LOSS	+	- 0.0024654	0.960
R2 (within)	**17.03%**		
F-stat	**4.76**		
p-value (F-stat)	**0.0003**		
N	**174**		

FEE is defined as the amount of the audit fee charged by the audit firm. FAMILY is a dummy variable that shows the firm as family-owned or a family firm through stock ownership, where 1 stands for a family firm (ownership > 50%) and 0 for a non-family firm (ownership < 50%). SIZE is the total assets of the company. CACL is the current ratio of the company (current asset/current liabilities). INVENTORY is the proportion of inventory from total assets. ROA is the return on asset (net income/total assets). OPINION is the opinion expressed by the audit firm in the same year, expressed as the dummy variable with 1 for unqualified, 0 for other. LOSS is the dummy variable from net income, where 1 is a negative net income and 0 for positive net income. * significant at 1%, ** significant at 5%, *** significant at 10%.

In this model, the focus is on the variable RISK. It is concluded from Model 3 that the variable is not even significant with a p-value of 0.470. Therefore, this implies that the audit risk level is not a significant consideration for audit firms in deciding the amount of audit fees to charge. This is in line with and also supports the result of the regression in Model 2. In Model 2, it was clear that being a family firm does not have an implication in determining the audit fees. Now, Model 3 supports the result in Model 2, showing that risk itself actually does not have an implication as a determinant for audit fees. Hence, the models indicate that family firms possess higher audit risk level than non-family firms, but being a family firm does not affect audit fees. This is supported by the fact that audit risk level does not have an effect on audit fees.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:00.

Table 5. Regression result – Additional Model (Model 3)

Regression Results - RISK X FEE			
Chow Test	**PLS**	**Selected model**	**GLS**
Hausman Test	**Fixed effect**		
Breusch Pagan Test	**Random effect**		
$FEE = \beta_0 + \beta_1 FAMILY + \beta_2 RISK + \beta_3 SIZE + \beta_4 CACL + \beta_5 INVENTORY + \beta_6 ROA + \beta_7 LOSS + \beta_8 OPINION + \varepsilon$			
Dependent variable: FEE			
Variable	**Expected sign**	**Coefficient**	***p-value***
RISK	+	-7.36E-14	0.**470**
FAMILY	+	0.0135428	0.798
SIZE	+/-	0.5437152	0.000***
CACL	+/-	-0.0242444	0.202
INVENTORY	+/-	-0.2753002	0.188
ROA	+/-	0.3428226	0.075*
OPINION	+/-	0.1330784	0.015**
LOSS	+	0.0777003	0.384
F-stat	**252.49**		
p-value (F-stat)	**0.0000**		
N	**174**		

CONCLUSION

This study found that being a family firm, as in family entitlement (majority of stock owned by family members), is not a significant consideration used by auditors in determining the amount of audit fees to charge a firm. The audit risk level in family firms is found to be higher than non-family firms. This explains the components of inherent risk, detection risk, and control risk, which conclude that family firms are riskier for auditors. The level of audit risk level (determined by the parsimonious model of accrual quality by Dechow and Dichev (2002) is in fact, not a significant consideration for auditors as a determinant in audit pricing. This supports the fact that being a family firm has no implication as a significant determinant of audit fee.

The findings highlighted several implications. Because the level of audit risk is positively correlated with family firms, family firms possess higher audit risk. Moreover, being a family firm does not correlate with audit fee due to the concentrated audit market in Indonesia, resulting in low bargaining power for auditors in charging fees. Whether a company is a family or non-family firm cannot affect the fee. This study gives insight to auditors on how they might construct ways to assess firms' risk level in the audit process.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:00.

LIMITATIONS AND SUGGESTIONS

This study has some limitations and suggestions for future study. First, the study used only one definition of family firms by Arifin (2008) for convenience, although the research discovered at least four varying definitions of family firms. This study's strict definition may have limited the implication of the study and further research should include many definitions of the variable family firm, or use the exact identification of the ultimate owner to give more perspectives and interpretation based on different definitions of what constitutes a "family firm".

The proxy used to draw conclusions on whether a company is a family or non-family firm in this model is not precise, since it only uses stock ownership as a very broad definition family ownership, instead of tracing the founding family involvement in each company.

The model used to reflect audit risk is the parsimonious variable of accrual quality measured by Dechow and Dichev (2002). This model is very limited in reflecting audit risk because the dimension of audit risk is very broad, covering inherent risk, control risk, and detection risk. Although accrual quality can reflect poor management practices, and the quality from numbers in the context of estimation, it does not fully reflect all dimensions in the audit risk model. Therefore, for further study, it is important to consider introducing a more detailed audit risk model to trace the specific type of risk (i.e., control risk, inherent risk), rather than the parsimonious general risk.

REFERENCES

Ali, A., Chen, T. & Radhakrishnan, S. (2007). Corporate disclosures by family firms. *Journal of Accounting of Economics*, *44*, 238-286.

Arifin, Z. (2003). Agency problem and control mechanism in companies with family-concentrated ownership structure: Evidence from Indonesia. *Dissertasion Postgraduate in Management*, Universitas Indonesia, *Depok*.

British Broadcast Corporation. (2016). *Family Firms Boost Indonesian Wealth. BBC News.*

Dechow, P. & Dichev, I. D. (2002). The quality of accruals and earnings: the role of accrual estimation errors. *The Accounting Review*, *77*, 35-59.

Ghosh, A. & Tang, Charles Y. (2015). Assessing financial reporting quality of family firms: The auditors' perspective. *Journal of Accounting and Economics*, *60*(1), 95-116.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:00.

Harvard Business Review. (2015). Why family firms in East Asia struggle with succession. *Harvard Business Review, 24.* https://hbr.org/2015/03/why-family-firms-in-east-asia-struggle-with-succession.

HKSA 200. (2013). Overall Objectives of the Independent Auditor and the Conduct of an Audit in Accordance with Hong Kong Standards on Auditing. *Hong Kong Institute of Certified Public Accountants.*

HKSA 315 (Revised). (2012). Identifying and Assessing the Risk of Material Misstatement through Understanding the Entity and Its Environment. *Hong Kong Institute of Certified Public Accountants.*

Hofstede, G. (1991). *Cultures and Organizations: Software of the Mind*. London: McGraw-Hill. ISBN 9780077074746.

Hofstede, G. (2015). Dimensionalizing cultures: The Hofstede model in context. *Online Readings in Psychology and Culture*., Vol. *1*, issue 8, pp. 1-26.

PwC Indonesia. (2014). *Report on family business survey*. PwC Indonesia Report.

Simunic, D. A. (1980). The pricing of audit services: Theory and evidence. *Journal of Accounting Research, 18,* 161-190.

Suharli, M. (2008). *Audit concentration and audit fee in state-owned companies*.

Wang, D. (2006). Founding family ownership and earnings quality. *Journal of Accounting Research, 44,* 619-656.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:00.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 17

THE EFFECTS OF TAX AVOIDANCE AND AUDIT QUALITY ON TAX AMNESTY

Ni Kadek Rahayu Nadi* and Dwi Martani
Department of Accounting, Universitas Indonesia, Depok, Indonesia

ABSTRACT

The purpose of this study is to analyze the effect of a company's tax avoidance and audit quality on its probability to participate in tax amnesty. This study focuses on companies that participate in tax amnesty based on Law No. 11 year 2016. This study used a logistic regression method with 149 samples of listed companies and found that companies audited by Big Four accounting firms had a lower probability of participating in tax amnesty. We found no significant effect of tax avoidance on the probability of participating in tax amnesty.

Keywords: tax amnesty, tax avoidance, audit quality, big four

INTRODUCTION

Through its 2016–2017 tax amnesty program, Indonesia managed to achieve the highest amount of collected tax in the world. According to data from the Directorate General of Taxes (DJP—Direktorat Jenderal Pajak) in 2017, Indonesia's tax amnesty program had collected redemption money amounting to 0.9% of Indonesia's GDP and

* Corresponding Author's E-mail: rahayunady@gmail.com.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:08.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 17

THE EFFECTS OF TAX AVOIDANCE AND AUDIT QUALITY ON TAX AMNESTY

Ni Kadek Rahayu Nadi* and Dwi Martani
Department of Accounting, Universitas Indonesia, Depok, Indonesia

ABSTRACT

The purpose of this study is to analyze the effect of a company's tax avoidance and audit quality on its probability to participate in tax amnesty. This study focuses on companies that participate in tax amnesty based on Law No. 11 year 2016. This study used a logistic regression method with 149 samples of listed companies and found that companies audited by Big Four accounting firms had a lower probability of participating in tax amnesty. We found no significant effect of tax avoidance on the probability of participating in tax amnesty.

Keywords: tax amnesty, tax avoidance, audit quality, big four

INTRODUCTION

Through its 2016–2017 tax amnesty program, Indonesia managed to achieve the highest amount of collected tax in the world. According to data from the Directorate General of Taxes (DJP—Direktorat Jenderal Pajak) in 2017, Indonesia's tax amnesty program had collected redemption money amounting to 0.9% of Indonesia's GDP and

* Corresponding Author's E-mail: rahayunady@gmail.com.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:16.

declared assets amounting 34.4% from its GDP, making Indonesia the country with the highest amount of tax money collected from its tax amnesty program. The program gives amnesty facilities to taxpayers in the form of write-off tax payables as well as administrative and criminal sanctions in taxation by disclosing assets and paying redemption money (Article 1 section 1 on the Tax Amnesty Law or *UU Pengampunan Pajak*). The accounting practice on the effects of tax amnesty itself is regulated in the Indonesian Framework of Accounting Standards number 70 about Accounting for Tax Amnesty Assets and Liabilities.

Previous research has found that tax amnesty gives noncompliant taxpayers a chance to repay their unreported income taxes without the fear of penalty or prosecutions (Bayer, Oberhofer, & Winner, 2015; Sawyer, 2005; Alm, McKee, & Beck, 1990). This is aligned with Baer and Leborgne's (2008) view that tax amnesty is a form of stimulus to tax avoiders to be compliant taxpayers. Andreoni, Erard, an Feinstein (1998) emphasize that alternative information on tax noncompliance can be obtained from tax amnesty, because those who took part in the tax amnesty voluntarily stated that they have been evading tax. Consequently, tax amnesty is one way to bring tax avoiders into compliance (Leonard & Zeckhauser, 1987).

Companies who avoided taxes in the past are likely to benefit from tax amnesty, which prevents tax officers from reinvestigating past tax avoiders. Hanlon and Heitzman (2010) define tax avoidance as any act of reducing tax explicitly that reflected all transactions related to company's tax payable. This definition is analogous to that of Dyreng, Hanlon, and Maydew (2010) who define tax avoidance as the ability to pay tax payables relatively low when compared with profit before tax. Therefore, one of the aims of this research is to analyze the effect of tax avoidance on the probability to join tax amnesty.

The 2016 tax amnesty program differs from that of previous years in that it is compulsory to report assets and liabilities that have not yet been disclosed. Companies that took part by reporting assets and liabilities not yet disclosed indirectly admit that their financial statements are incomplete. With this condition in mind, the company does not comply with the conceptual framework's completeness aspect in order to achieve reliability (Kieso, Weygandt, & Warfield, 2014). Accordingly, joining the tax amnesty increases the risk relating to the reliability of the company's financial statements. The reliability of financial statements is judged by an external auditor, because the aim of an audit is to give reasonable assurances that a financial statement is free from any material misstatements (Gray, Manson, & Crawford, 2015). According to DeAngelo (1981), the Big Four auditors give higher reliability reports to financial statements with higher audit quality when compared with other audit firms because they are larger and more reputable. As the reliability of a company's financial statement increases, the company is less likely to join the tax amnesty program.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:16.

The huge benefit offered by the tax amnesty program is not always enough to tempt companies to join the program, especially those audited by big audit firms or the Big Four. Lawrence, Meza, and Zhang (2011) state that large audit firms have higher audit quality because they have a reputation to protect and larger resources for training auditors. With higher reliability, the tendency for unrecorded assets or liabilities will be lower, obviating the need to join the tax amnesty program. Hence another aim of this research is to analyze the impact of audit quality on a company's probability to join tax amnesty.

Indonesian or international research about tax amnesty is limited. International research mainly focuses on the theory, direction, compliance, and enforcement of the tax amnesty program, specifically in the United States, while Indonesian research focuses more on amnesty's implementation, effectiveness, and history as well as the sunset policy. Preceding research mostly states that tax amnesty gives tax avoiders the chance to pay past tax payables, but none have specifically studied the relationship between tax avoidance, audit quality, and tax amnesty.

We conducted an empirical study of the impact of prior tax amnesty and audit quality on the probability of companies to join Indonesia's tax amnesty program. To our knowledge, previous research has not conducted an empirical test on the relationship among tax avoidance, audit quality, and the probability to join tax amnesty. Indonesia's recent implementation of a tax amnesty program makes this research particularly opportune.

This research consists of five parts. Following the introduction in part 1, part 2 presents the literature review and hypothesis development, part 3 presents research methodology, part 4 presents empirical results, and part 5 contains conclusion, limitations, and suggestions.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

ANALYTICAL FRAMEWORK

Tax Amnesty

Baer and LeBorgne (2008) define tax amnesty as an invitation to tax avoiders to join in the list of those who pay tax. Some researchers also state that tax amnesty gives an individual a chance to pay their unpaid taxes without any penalty or prosecution, which are the risks of tax avoidance (Bayer et al., 2015; Sawyer, 2005; Alm et al., 1990). Specifically, the program gives amnesty to taxpayers in the form of a write-off of tax payables as well as administrative and criminal sanctions in taxation by disclosing assets and paying redemption money (Article 1 section 1 Tax Amnesty Law—UU Pengampunan Pajak).

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:16.

Having implemented tax amnesty successfully in 1964 and 1984 and establishing the sunset policy, Indonesia implemented a tax amnesty program again in 2016 based on *Undang-Undang no. 11 tahun 2016 tentang Pengampunan Pajak* (Law no. 11 year 2016 about Tax Amnesty). The government's goals in carrying out the policy were accelerating economic growth and restructuring, urging tax reform, and increasing tax revenue (Article 2 section 1 Tax Amnesty Law).

As in 1964 and 1984, every taxpayer was given the chance in 2016 to disclose their assets in a Statement Letter and pay redemption money in order to receive a write-off of tax payables and avoid administrative and criminal sanctions. Taxpayers who were involved in an audit or dispute or under criminal tax sanction were not eligible for tax amnesty. Tax amnesty covered tax obligations not completely settled by the end of the tax year. These obligations include Income Tax (PPh), Value Added Tax (PPN), and Sales Tax on Luxury Goods (PPnBM). The period of tax amnesty was divided into three parts: July-September 2016, October-December 2016, and January-March 2017.

Apart from disclosing their assets, taxpayers were also obligated to pay redemption money in an amount obtained by multiplying the redemption money tariff with the net value of the disclosed asset. The redemption money tariff varies by the region of the asset's residence and the participance period. When the Approval Letter of Tax Amnesty was issued, the taxpayer received tax amnesty facilities in the form of: (a) write-off of tax payables; (b) write-off of administrative sanctions; (c) not being tax audited; and (d) the ceasing of tax audit.

Of the tax amnesty facilities obtained, the tax payers were not eligible to do the following: (a) compensating fiscal loss otherwise compensable; (b) compensating tax overpayment; (c) appealing for the return of tax overpayment; and (d) obtain corrections on PPh, PPN, and PPnBM notification letters. If a taxpayer did not make use of tax amnesty or had participated in a previous tax amnesty, but the Directorate General of Taxes (DGT) finds unreported assets, then those assets were taken into account as income in the tax return (SPT) and were taxed with an additional administrative sanction and tax increase according to the applicable law. The tax amnesty period is valid for a maximum of three years after the implementation of the Tax Amnesty Law.

From the accounting side, PSAK 70 was used as the foundation of recognition, presentation, and disclosure of assets and liabilities of tax amnesty. PSAK 70 gave two options for entities in the initial recognition of the assets and liabilities from tax amnesty. The first option was to apply initial recognition according to other relevant accounting standards (SAK) with each asset and liability. The second option was the initial recognition for the tax amnesty's asset based on its acquisition cost according to that which is recorded on the certificate and recording liabilities based on the contractual obligation to settle the liability that are directly related with the acquisition of the tax amnesty's assets. The assets and liabilities that emerge from tax amnesty are considered new assets and liabilities.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:16.

Tax Avoidance

Because tax payment is an expense to a company, it is sometimes intentionally or uninentionally avoided in order to maximize the company's profit. To minimize tax payables, companies reduce profit before tax calculation by doing tax planning (Richardson and Taylor, 2012). Companies will attempt to minimize tax payables through tax planning of both a legal and illegal nature (Rahayu, 2009). According to Hanlon and Heitzman (2010), tax avoidance is legal tax planning, and tax evasion is illegal tax planning. Hanlon and Heitzman (2010) define tax avoidance as an act to reduce taxes that explicitly reflects all transactions that affect the company's tax payables. Dyreng, Hanlon, and Maydew (2008) emphasize that tax avoidance is not wrongdoing, because some tax regulations urge companies to reduce tax payments, and many regulations are vague on this point, especially for complex transactions.

Hanlon and Heitzman (2010) stated that there are several measurements of tax avoidance used in various tax research. Effective Tax Rate (ETR), which divides tax obligation estimation with profit before tax or cash flow, is the most commonly used measurement for tax avoidance. Specifically, ETR calculation can be divided into three methods: (1) GAAP ETR, calculated by dividing total tax expense by profit before tax; (2) Current ETR, calculated by current tax expense divided by profit before tax; and (3) Cash ETR, calculated by tax payments divided by profit before tax. Dyreng Dyreng, Hanlon, and Maydew (2008) further developed the concept of *long-run cash ETR* to avoid yearly ETR volatility.

Besides ETR, another commonly used tax avoidance measurement is the book-tax difference (BTD). BTD shows the difference between accounting profit and profit according to tax regulations. BTD is measured by taxable income from profit before tax, while taxable income is calculated by current tax expense divided by the tax rate. The bigger the BTD, the greater the tax shelter and the likelihood that a company will be audited by tax officials (Hanlon & Heitzman, 2010). Another method to measure tax avoidance is abnormal book-tax difference (ABTD) developed by Desai and Dharmapala (2006, 2009). According to Tang and Firth (2012), BTD shows the difference in regulations between accounting and taxation, while ABTD focuses on profit management and tax management activities. Hanlon and Heitzman (2010) also state that ABTD can explain the difference in accounting profit and profit according to tax that cannot be explained by BTD.

Audit Quality and Tax Amnesty

According to Lawrence et al. (2011), large audit firms deliver higher audit quality because they have a reputation to protect. Boone, Khurana, and Raman (2010) state that

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:16.

two drivers for audit quality are litigation fees and the risk of reputation loss. With larger investment and expense to build a brand, large audit firms have the incentive to lower litigation risk and protect their reputation by delivering reliable audits. The size of the audit firm is one determinant of audit quality, because larger size means larger expense for audit training and audit technologies and ensures the firm's independent from a specific client, rendering them better to withstand pressure from clients in producing an unbiased audit opinion.

According to DeAngelo (1981) and Beasley, Clune, and Hermanson (2005), Big Four auditors (Deloitte, PwC, EY, and KPMG) give more reliable financial statements with higher audit quality when compared with other audit firms due to their large size and good reputation. Audits conducted by the Big Four, on average, are of higher quality than other (smaller) audit firms, according to output evidence of an external auditor, which is the independent auditor report and audited financial statements (Francis, 2004). According to Khurana and Raman (2004), the concern about reputation is quite a big incentive for Big Four auditors to provide high quality audits, despite operating in an environment where litigation is a rare occurrence.

Reliable financial statements should fulfill the conceptual framework on financial reporting, one of it being completeness. Completeness means that all information has been disclosed in the financial statements as they are (Kieso et al., 2014), including all assets and liabilities owned. A tax amnesty program that requires companies to report unreported assets and liabilities therefore imposes a risk on the reliability of the financial statements.

Hypotheses

The success of a tax amnesty program in general is measured by the revenue generated and the increase of the tax basis, particularly by drawing out the underground sector taxpayers to the legal sector (Bose & Jetter, 2012). Ross and Buckwalter (2015) also posit that to extract tax payables from noncompliant taxpayers, tax amnesty can potentially prompt those taxpayers to voluntarily fulfill their duties. To put it simply, tax amnesty aims to encourage tax avoiders to disclose their tax payables to gain a tax write-off.

The tax amnesty program gives noncompliant taxpayers the chance to pay all tax payables without any persecution or penalties (Bayer et al., 2015). Tax amnesty is attractive to taxpayers, who are aware that noncompliant acts in the past can cause a negative impact in the future in the form of tax fines (Bayer et al., 2015). Danny Darussalam Tax Center (2016) also asserts that tax amnesty gives noncompliant taxpayers a chance to report their income and pay their taxes voluntarily through inventives.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:16.

The government's tax amnesty policy provides remission for companies' noncompliance to tax regulations in the form of write-off of tax payables as well as freedom from administrative and criminal sanctions in exchange for the company disclosing assets and paying redemption money. This exchange incentivizes companies with a history of tax avoidance to join the tax amnesty. Our first hypothesis (H1) is therefore: Companies with higher tax avoidance are more likely to participate in tax amnesty.

Tax amnesty can be obtained if companies report assets and liabilities that have not been previously disclosed. Companies that participate in the tax amnesty indirectly admit that their financial statements are incomplete and that they do not comply with the financial reporting conceptual framework to achieve reliability (Kieso et al., 2014). Accordingly, participation in tax amnesty puts the reliability of a company's financial statements at risk.

External auditors judge the reliability of financial statements with the aim of giving sufficient confidence that the financial statements are free from material misstatements (Gray et al., 2015). It is commonly thought that audits by the Big Four bestow higher reliability to financial statements because on average, they perform higher quality audits than other firms (Lawrence et al., 2011; Beasley et al., 2005; Francis, 2004; DeAngelo, 1981). For the Big Four, their reputation and brand are professional assets that are exteremely important in retaining their current audit clients, attracting bigger clients, and retaining qualified employees (Khurana & Raman, 2004). Higher audit quality therefore leads to more reliable financial statements.

Reliable financial statements are of higher quality, because the company has complied with the conceptual framework of financial reporting. Because it is less likely that these companies have undisclosed assets and liabilities, they may be less likely to participate in tax amnesty, Our second hypothesis (H2) is therefore: Companies with higher audit quality are less likely to participate in tax amnesty.

RESEARCH METHODOLOGY

Research Framework

This research's goal is to give empirical evidence of the impact of tax avoidance and audit quality to the probability that a company will join tax amnesty. Based on the hypotheses detailed above, the scheme of the relationship among the independent and control variables to dependent variables are shown in Figure 1:

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:16.

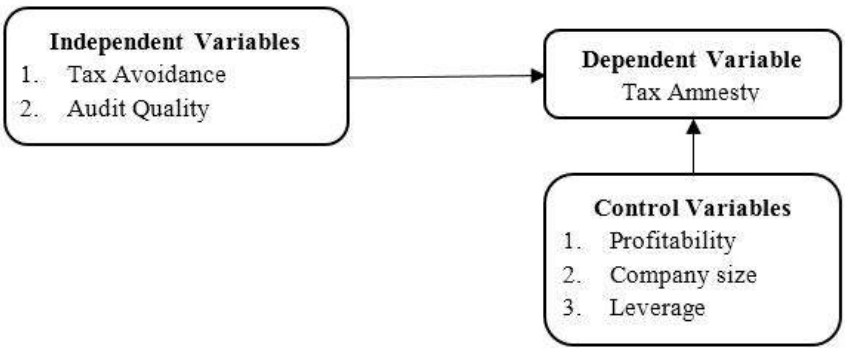


Figure 1. Research Framework.

Research Model

Research heretofore has not undertaken an empirical test to verify the relationship between tax avoidance, audit quality, and tax amnesty. The model that is used in this research is thus as follows:

$$TA_i = \alpha_0 + \beta_1 TAV_i + \beta_2 AUD_i + \beta_3 ROA_i + \beta_4 LEV_i + \beta_5 SIZE_i + \varepsilon_i \quad (1)$$

Annotations:

TA	=	tax amnesty, which is the participation in the tax amnesty program, using a dummy variable "1" for companies joining the tax amnesty and "0" for companies not joining the tax amnesty;
TAV	=	tax avoidance, measured with abnormal book-tax difference (ABTD), the rate of tax avoidance it the absolute value of the residual from the regression result of book-tax difference (BTD);
AUD	=	audit quality, using dummy variables "1" for companies audited by Big Four and "0" for companies not audited by Big Four;
ROA	=	company's profitability rate, measured by income before tax divided by total assets;
LEV	=	company's leverage rate, measured by total liabilities divided by total assets;
SIZE	=	the size of the company, measured by the natural logarithm of total assets.

Variable Operationalization

The dependent variable in this research is the tax amnesty, particularly the company's decision to whether or not join the tax amnesty. Because of that, the measurement uses the dummy variable "1" for companies joining the tax amnesty and "0" for companies not joining the tax amnesty. Companies classified as joining the tax amnesty are those who

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:16.

turn in a Statement of Assets (*Surat Pernyataan Harta*) in a tax amnesty period from 2016 until 2017, and disclose such in their financial statements.

The independent variables in this research are tax avoidance and audit quality. The proxy used to measure tax avoidance is ABTD. According to Tang and Firth (2012), ABTD, more indicative of profit management and tax management activities, is a sophisticated proxy for tax avoidance, while BTD only shows the difference of regulations between accounting and taxation. ABTD is the absolute amount of the residual value from the regression model of BTD, because neither positive nor negative affects the position of tax avoidance. The higher the ABTD, the higher the management manipulation on the accounting profit and taxes owed, indicating tax avoidance. Therefore, the higher the tax avoidance measured by the ABTD proxy, the bigger the company's incentive to participate in tax amnesty. Consequently, the research result on ABTD variable is expected to result a positive (+) coefficient.

Below is the BTD model developed by Tand and Firth (2012):

$$BTD_i = \alpha_0 + \beta_1 CapINT_i + \beta_2 \Delta REV + \beta_3 LEV_i + \beta_4 SIZE_i + \beta_5 PrevBTD_i + \varepsilon_i \quad (2)$$

Annotations:

BTD	=	book-tax difference, measured by profit before tax deducted by taxable income divided by total assets;
CapINT	=	capital intensive, measured by total fixed assets divided by total assets;
ΔRev	=	change of revenue from year t−1 to year t;
LEV	=	the company's leverage rate, measured by total liabilities divided by total assets;
SIZE	=	the size of the company, measured by the natural logarithm of total assets;
PrevBTD	=	book-tax difference, measured by profit before tax deducted by taxable income divided by total assets in the year t−1.

The variable audit quality is measured by the dummy variable "1" for companies audited by the Big Four and "0" for companies not audited by the Big Four. In this research, if a company is audited by the Big Four, then the less likely that company is to participate in tax amnesty, because the audit quality is high enough to create a more reliable financial statement with no unrecorded assets or liabilities (Boone et al., 2010; DeAngelo, 1981). The research result on the Big Four variable is expected to result in a positive (+) coefficient.

There are three control variables in this research, which are presented below:

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:16.

1) Profitability is measured by return on asset (ROA), which is calculated from profit before tax divided by total assets (Richardson & Lanis, 2012). The ROA variable is used to control a company's profitability variance. De la Fuente Sabaté and De Quevedo Puente (2003) found a strong relationship between a company's profitability and its reputation. A company with a good reputation is less likely to participate in the tax amnesty, which requires admitting the existence of undisclosed assets and liabilities. Due to this, it is expected that the ROA variable will have a negative (−) coefficient.
2) The size of the company is measured by the natural logarithm of the total assets (Richardson & Lanis, 2012). The size of a company has a strong relationship with its reputation (Schultz et al., 2001; Roberts & Dowling, 2002). Companies with a good reputation are less likely to participate in tax amnesty, which requires them to admit the existence of undisclosed assets and liabilities. It is therefore expected that the size variable will have a negative (−) coefficient.
3) The company's leverage rate shows how much funding used by a company that originated from debts, which is calculated as total liabilities divided by the company's total assets. Companies with higher leverage are more likely to engage in tax avoidance of the interest expense of the debts deductible from the profits used to calculate tax (Richardson & Lanis, 2012). The higher the leverage, the more likely it is for the company to join the tax amnesty program. It is therefore expected that the LEV variable will have a positive (+) coefficient.

Data and Sample

This research uses secondary data from companies' financial statements downloaded from the Indonesia Stock Exchange (IDX) site and Thomson Reuters Eikon. Data obtained includes quantitative and qualitative statements of financial positions, statements of profit or loss, and notes on financial statements. This research uses avaliable data from 2014 to 2017. The tax amnesty data is based on company participation in the 2016–2017 tax amnesty program. Meanwhile, other data uses the year 2015 because the tax amnesty regulation was executed in 2016. The use of 2015 data is therefore more representative of the company's condition before joining the tax amnesty.

Our research utilized the purposive sampling method, which is limited to certain criteria relevant to the research, including:

1) Companies listed in the Indonesia Stock Exchange (IDX) up to the year 2017,
2) Companies not belonging to sectors that have special tax regulations, such as banking, mining, property and real estate, construction, and sailing,
3) Companies with fiscal year ending on December 31 for sample comparability,

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:16.

4) Companies that do not have a negative balance for pretax profit, total tax expense, current tax amount, and amount of paid taxes, and
5) Companies having complete data needed for this research that is available on the financial statements from 2015 to 2017.

Data Processing Methods

This research conducted a quantitative data analysis that tried to prove the influence of the independent variables on the dependent variable tested in this research. The dependent variable used is binary (dummy), so the data is analyzed using a logistic regression model. Logistic regression is used to observe the influence of the independent variables on the probability of the variable dependent's occurrence (Gujarati, 2004). The statistical software used in this research was STATA 13. This research also used descriptive statistical analysis, logistic regression analysis, a multicoliniearity test, a model feasibility test, a pseudo r^2 test, and a hypothesis test.

RESULT AND DISCUSSION

Sample Selection

Based on the criteria from the sample selection method in part 3, there were 149 companies selected to be this research's sample. Table 1 shows the steps in acquiring the samples.

Table 1. Sample research selection

Criteria	Total
Companies listed in IDX as of 2017	556
Deducted by:	
Companies in the financial sector	98
Companies in the mining sector	42
Companies in the property, real estate, and construction sector	67
Companies in the sailing sector	15
Companies with a negative pretax income	107
Companies that do not use December 31 as fiscal year	2
Companies with unobtainable data	14
Companies with negative, zero, more than one, or unavailable ETR	47
Companies with unavailable data to calculate the ABTD	15
Number of samples	149

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:16.

Descriptive Statistics

Descriptive statistics analysis describes the characteristics and spread of each variable in the research. Table 2 shows the summary of the descriptive statistics in this research.

Table 2. Descriptive statistics

Variable	N	Average	Min	Max	Standard Deviation
TAV	149	0,0187	0,000139	0,1386	0,0222
ROA	149	0,1025	0,000008	0,5779	0,0973
LEV	149	0,4668	0,070742	0,8912	0,1949
SIZE	149	28,5489	24,5877	33,1341	1,5949
Dummy variable		N	Score of 1 (%)	Score of 0 (%)	
TA		149	65 (44%)	84 (56%)	
AUD		149	60 (40%)	89 (60%)	

Annotations: TA = tax amnesty, a dummy variable, the score of 1 is for companies joining the tax amnesty and the score of 0 is for companies not joining the tax amnesty; AUD = audit quality, a dummy variable, the score of 1 is for companies audited by the Big Four and the score of 0 is for companies not audited by the Big Four; TAV = tax avoidance, measured by abnormal book-tax difference, the residual value of the regression of book-tax difference (BTD); ROA = profitability, the pretax profit divided by total assets; LEV = leverage, total liabilities divided by total assets; SIZE = the size of the company, the natural logarithm of the total assets.

Logistic Regression Result

In this research, logistic analysis is used to observe the impact of tax avoidance, audit quality, and the control variables on the probability of participance in the tax amnesty program. The test of multicolinearity attempts to discover a strong relationship between the independent variables in the regression model through the Pearson correlation test and the VIF test. Referring to Table 3, the result of the Pearson correlation test shows that there are no variables that have a score above +/− 0.8. This result shows that there is no strong correlation among the variables, which means that there is no multicolinearity issues in the variables in the research model. The result of the Pearson correlation test is also an early indication of the relationship of every independent and control variable to the dependent variables in the research model. The results in Table 3 show that all independent and control variables (TAV, AUD, ROA, LEV, and SIZE) have a negative correlation with the dependent variable TA.

Apart from the Pearson correlation test, the multicolinearity test can also be done with the VIF test. The result of the VIF test shows that there are no variables that have a

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:16.

score above 8. This means that there exists no multicolinearity issues in the variables in the research model, which means that this research model is stable enough to subject to a further regression test. The table that depicts the result of the VIF test can be seen in Appendix 2.

Table 3. Pearson correlation test result

	TA	**ABTD**	**BIG4**	**ROA**	**LEV**	**SIZE**
TA	1					
TAV	−0.0954	1				
AUD	−0.3359	0.0328	1			
ROA	−0.1290	0.2283	0.2892	1		
LEV	−0.0146	−0.0712	−0.0153	−0.2473	1	
SIZE	−0.2851	−0.0658	0.5081	0.0854	0.1274	1

Table 4. Regression result

Variable	**Sign Prediction**	**Coef.**	**Odds Ratio**	**Significance (P>|z|)**
TAV	+	−11.16312	0.0000142	0.224
AUD	-	−1.083248	0.3384944	0.013**
ROA	?	−0.6074991	0.5447114	0.779
LEV	+	−0.1215265	0.8855676	0.900
SIZE	-	−0.2555837	0.7744643	0.065*

Prob > chi2 = 0.0004.

Pseudo R2 = 0.1102.

N = 149.

Significance rate, ***= 1%; ** = 5%; *=10%.

Annotations: TA = tax amnesty, a dummy variable, the score of 1 is for companies joining the tax amnesty and the score of 0 is for companies not joining the tax amnesty; AUD = audit quality, a dummy variable, the score of 1 is for companies audited by the Big Four and the score of 0 is for companies not audited by the Big Four; TAV = tax avoidace, measured by abnormal book-tax difference, the residual value of the regression of book-tax difference (BTD); ROA = profitability, the pretax profit divided by total assets; LEV = leverage, total liabilities divided by total assets; SIZE = the size of the company, the natural logarithm of the total assets.

The regression test, especially the logistic regression, is done to test the hypothesis of this research through global and individual tests. Table 4 shows the regression result of the research model.

The global test in this research shows the score of *Prob > chi2* = 0.0004. The score 0.0004 is smaller than the significance rate of 1%, so it can be concluded that the overall model is appropriate. In this case, overall, the independent variables have a significant influence on the research's dependent variable. The regression test result also shows that the score of *Pseudo R2* is 0.1102. The *Pseudo R2* score shows that the research's

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:16.

independent variables altogether are capable to explain the variation of the dependent variable as much as 11.02% from the research model.

Hypothesis Test

The Impact of Tax Avoidance on the Probability to Join Tax Amnesty

Table 4 shows non-significant influence of tax avoidance on the probability to join tax amnesty. It can be concluded that tax avoidance does not influence a company's probability of participating in tax amnesty. Consequently, the regression test result has invalidated the first hypothesis of the research, which is that companies with higher tax avoidance have a higher probability of participating in the tax amnesty.

Based on the theoretical foundation from the previous discussions, tax avoidance is the act of minimalizing tax legally that makes use of blind spots in the tax regulation. This is entirely different from tax evasion, which is considered illegal. A company may thus not require tax amnesty but may need to avoid tax disputes arising from previous tax avoidances. Added to that, there is a possibility that the aim of joining the tax amnesty is to gain tax certainty in the future. Article 13 section 4 *UU Ketetapan Umum Perpajakan* states that new taxpayers will gain certainty regarding the amount of tax payables reported in the tax return for five years from the period in which the taxes are payable. By participating in tax amnesty, errors prior to the year 2015 will not be investigated, so the company's taxes will be certain without having to wait for the certainty period as regulated in the UU KUP.

The Impact of Audit Quality on the Probability to Join Tax Amnesty

Table 4 shows a significant influence of audit quality on the probability to join tax amnesty, specifically a 5% significance rate. The coefficient resulting from the regression shows a negative value, which means that audit quality has a negative influence on tax amnesty, with the change of odds rate of −66% [(0,3384944–1) x 100]. This shows that companies audited by the Big 4 are 66% less likely to join tax amnesty than those that are not audited by the Big Four. The second hypothesis that companies with higher audit quality are less likely to participate in the tax amnesty is thus accepted.

Companies audited by the Big Four have a higher quality audit that ensures a higher level of reliability in their financial statements (Lawrence, Meza, Zhang, 2011; Beasley, Clune, & Hermanson, 2005; Francis, 2004; DeAngelo, 1981). According to DeAngelo (1981), there exists a strong relationship between the sizes of the audit firm with the quality of audit produced, because the firm has a reputation to protect. The more reliable a company's financial statements, the more unlikely it is to join tax amnesty, because the probability of undisclosed assets or liabilities is low.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:16.

The Impact of the Control Variable on the Probability of Joining Tax Amnesty

Referring to Table 4, profitability (ROA) does not have a significant influence on the probability to join tax amnesty. This can be seen from the score P>|z| ROA of 0.779, higher than the significance rate of 10%, which means that the company's profitability does not have a significant influence on a company's probability of joining tax amnesty.

The leverage (LEV) variable also does not have a significant influence on the probability of joining tax amnesty. This can be seen from the score P>|z| LEV of 0.900, higher than the significance rate of 10%, which means that the company's leverage does not have a significant influence on the probability of joining tax amnesty.

The size of the company (SIZE) variable has a significant influence on a company's probability to join the tax amnesty with a significance rate of 10%. The coefficient resulting from the regression test shows a negative value, which means that the size of the company has a negative significant influence with the change of odds rate of −23% [(0.7744643–1) x 100]. This regression result shows that the change of one unit of the SIZE causes the probability of joining the tax amnesty to decrease 23%.

Sensitivity Analysis on the Tax Avoidance Variable

In Table 5, the regression result shows that tax avoidance does not have a significant influence on the probability of joining tax amnesty. The sensitivity analysis of the tax avoidance variable is conducted to observe the consistency of the regression result by changing the tax avoidance proxy. In model 3.1, tax avoidance is measured by using ABTD, while in the sensitivity analysis, three proxies are used, which are Cash ETR, BTD, and SKP. Presented below is the regression result of the sensitivity analysis.

Table 5. Sensitivity analysis result

Variable	**Sign Prediction**	**CashETR**		**BTD**		**SKP**	
		Odds Ratio	P>|z|	*Odds Ratio*	P>|z|	*Odds Ratio*	P>|z|
CashETR	+	0.507	0.519				
BTD	+			0.003	0.287		
SKP	+					1.048	0.908
AUD	-	0.326	0.012**	0.334	0.012**	0.343	0.014**
ROA	-	0.422	0.700	0.326	0.607	0.276	0.553
LEV	+	0.787	0.806	0.777	0.795	0.849	0.867
SIZE	-	0.790	0.085*	0.777	0.067*	0.788	0.086*

Prob (%)=*Probability percentage; P*>|*z*| = significance rate, ***= 1%; ** = 5%; *=10%.

Annotations: CashETR = paid taxes divided with pretax profit; BTD = book-tax difference, pretax income deducted with taxable income divided by total assets; SKP= *Surat Ketetapan Pajak* (Notice of Tax Assessment), is a dummy variable, the score "1" indicating companies that receive SKP from 2012 to 2015, "0" for companies that do not receive SKP from 2012 to 2015. SKP must be in a form of *Surat Ketetapan Pajak Kurang Bayar* (SKPKB—Notice of Tax Underpayment Assessment) or *Surat Ketetapan Pajak Lebih Bayar* (SKPLB—Notice of Tax Overpayment Assessment) that differs from the appeal and the resolution.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:16.

Referring to Table 5, there is no significant influence among tax avoidance, CashETR, BTD, and SKP on the probability of joining tax amnesty. Meanwhile, the AUD variable has a significant influence on the probability of joining tax amnesty with a 5% significance rate. Moreover, for control variables, only the SIZE variable, with 10% significance, has a negative correlation on all three types of model. The result of sensitivity analysis therefore shows a consistent result that is in line with the discussion in subsection 4.4.

CONCLUSION

This research aims to analyze the impact of tax avoidance and audit quality on the probability of a company joining tax amnesty. The result of this research is that a company's past tax avoidance does not influence their probability of joining tax amnesty. This is due to the fact that tax avoidance is a legal act, so the company may not need tax amnesty but only instead to avoid a tax dispute. There is a further probability that the aim of joining tax amnesty is to gain tax certainty in the future. By joining tax amnesty, a company can shield any errors committed prior to 2016 from investigation, so that their taxation will be certain without having to wait for the certainty period as regulated in the UU KUP.

Companies audited by large audit firms are less likely to join tax amnesty. They are 66% less likely to join tax amnesty when compared with those who are not audited by the Big Four. This is because the company audits conducted by the Big Four are higher quality, leading to increased reliability in their financial statements. The more reliable the financial statements, the more unlikely it is for the company to join tax amnesty, because the probability of having undisclosed assets or liabilities is low.

This research fails to prove that tax avoidance affects participation in tax amnesty. Since this research only use ABTD as the proxy for tax avoidance, therefore the literature implication is the need to develop another tax avoidance proxies such as Long-Run ETR, DTAX, Tax Shelter, *Surat Ketetapan Pajak*, and others. For the Directorate General of Taxes (DGT), it is crucial to take into account the fact that companies do not merely join tax amnesty to receive remission on their noncompliance or tax avoidance done in the past, but instead for other goals such as to receive tax certainty in the future. It is thus important for the DGT to increase tax certainty. Moreover, this research proves that the audit quality influences a company's participation in tax amnesty. For regulators such as the DGT and the Financial Services Authorities (OJK—*Otoritas Jasa Keuangan*), companies not audited by the Big 4 should receive special attention because it could be that their financial statements are of lower quality. For investors, this research provides factors to consider in choosing companies in which to invest, particularly taking into

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:16.

account the reliability of financial statements of companies joining tax amnesty and the risk to reputation they cause.

This research can be developed further. In a future study, the data on long-term tax avoidance can be used as did in Dyreng et al. in their 2008 research, so that it will more accurately portray the tax avoidance situation prior to joining tax amnesty. Also, further explorative analysis regarding tax amnesty should be done, for example by examining more closely a particular company that joins tax amnesty.

REFERENCES

Alm. J., McKee. M., & Beck. W. (1990). Amazing grace: Tax amnesties and compliance. *National Tax Journal.* 23-37.

Andreoni. J., Erard. B., & Feinstein. J. (1998). Tax compliance. *Journal of Economic Literature.* 36(2). 818-860.

Bayer. R. C., Oberhofer. H., & Winner. H. (2015). The occurrence of tax amnesties: Theory and evidence. *Journal of Public Economics.* 125. 70-82.

Beasley. M. S., Clune. R., & Hermanson. D. R. (2005). Enterprise risk management: An empirical analysis of factors associated with the extent of implementation. *Journal of accounting and public policy.* 24(6). 521-531.

Boone. J. P., Khurana. I. K., & Raman. K. K. (2010). Do the big 4 and the second-tier firms provide audits of similar quality?. *Journal of Accounting and Public Policy.* 29(4). 330-352.

Bose. P., & Jetter. M. (2012). Liberalization and tax amnesty in a developing economy. *Economic Modelling.* 29(3). 761-765.

Buckwalter. N. D., Sharp. N. Y., Wilde. J. H., & Wood. D. A. (2014). Are state tax amnesty programs associated with financial reporting irregularities?. *Public Finance Review.* 42(6). 774-799.

Danny Darussalam Tax Center (DDTC). (2016). *"Pentingnya Peran Tax Amnesty di 2016*" [The Importance of Tax Amnesty in 2016]. *Inside Tax.* edisi 37.

De la Fuente Sabaté, J. M., & De Quevedo Puente, E. (2003). Empirical analysis of the relationship between corporate reputation and financial performance: A survey of the literature. *Corporate Reputation Review.* 6(2). 161-177.

DeAngelo. L. E. (1981). Auditor size and audit quality. *Journal of Accounting and Economics.* 3(3). 183-199.

Desai. M. A., & Dharmapala. D. (2006). Corporate tax avoidance and high-powered incentives. *Journal of Financial Economics.* 79(1). 145-179.

Desai. M. A., & Dharmapala. D. (2009). Corporate tax avoidance and firm value. *The Review of Economics and Statistics.* 91(3). 537-546.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:16.

Dewi, M. (2017). *The role of social capital on child stunting in Indonesia*. Skripsi: Universitas Indonesia.

Direktorat J. P., (2017). *Reformasi fiskal: Necessary condition untuk mendorong pertumbuhan ekonomi yang berkelanjutan dan berkualitas* [*Fiscal reform: Necessary conditions to encourage sustainable and quality economic growth*].

Dyreng. S. D., Hanlon. M., & Maydew. E. L. (2008). Long-run corporate tax avoidance. *The Accounting Review*. 83(1). 61-82.

Dyreng. S. D., Hanlon. M., & Maydew. E. L. (2010). The effects of executives on corporate tax avoidance. *The Accounting Review*. 85(4). 1163-1189.

Francis. J. R. (2004). What do we know about audit quality?. *The British Accounting Review*. 36(4). 345-368.

Gray. I., Manson. S., Crawford. L. (2015). The Audit Process: Principles. *Practice and Cases.* Cengage Learning EMEA.

Gujarati, D. N. (2004). *Basic econometrics (fourth edition).* Tata McGraw-Hill Education.

Hanlon. M., & Heitzman. S. (2010). A review of tax research. *Journal of Accounting and Economics*. 50(2-3). 127-178.

Keputusan Presiden Nomor 26 Tahun 1984 tentang Pengampunan Pajak [*Pesidential Decree Number 26 of 1984 concerning Tax Amnesty*].

Khurana. I. K., & Raman. K. K. (2004). Are big four audits in ASEAN countries of higher quality than non-big four audits?. *Asia-Pacific Journal of Accounting & Economics*. 11(2). 139-165.

Kieso. D. E., Weygandt. J. J., & Warfield. T. D. (2010). *Intermediate accounting: IFRS edition (Vol. 2)*. John Wiley & Sons.

Lanis. R., & Richardson. G. (2012). Corporate social responsibility and tax aggressiveness: An empirical analysis. *Journal of Accounting and Public Policy*. 31(1). 86-108.

Lawrence. A., Minutti-Meza. M., & Zhang. P. (2011). Can Big 4 versus non-Big 4 differences in audit-quality proxies be attributed to client characteristics?. *The Accounting Review*. 86(1). 259-286.

Le Borgne. E., & Baer. K. (2008). *Tax amnesties: Theory trends and some alternatives.* International Monetary Fund.

Leonard. H. B., & Zeckhauser. R. J. (1987). Amnesty enforcement and tax policy. *Tax Policy and the Economy.* 1. 55-85.

Penetapan Presiden Nomor 5 Tahun 1964 tentang Peraturan Pengampunan Pajak [*Presidential Decree Number 5 of 1964 concerning Tax Amnesty Regulations*]

Pernyataan Standar Akuntansi Keuangan (PSAK) 70 tentang Akuntansi Aset dan Liabilitas Pengampunan Pajak. [*Statement of Financial Accounting Standards (PSAK) 70 concerning Accounting for Tax Amnesty Assets and Liabilities*.]

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:16.

Rahayu, N. (2009). *Praktik penghindaran pajak (tax avoidance) pada foreign direct investment yang berbentuk subsidiary company (PT PMA) di indonesia (suatu kajian tentang kebijakan anti tax avoidance)* [*The practice of tax avoidance (investment tax) on foreign direct investment that forms a subsidiary (PT PMA) in Indonesia (an overview of anti-tax avoidance policies)*]. Doctoral dissertation, Universitas Indonesia.

Roberts. P. W., & Dowling. G. R. (2002). Corporate reputation and sustained superior financial performance. *Strategic Management Journal*. 23(12). 1077-1093.

Ross. J. M. & Buckwalter. N. D. (2013). Strategic tax planning for state tax amnesties: Evidence from eligibility period restrictions. *Public Finance Review*. 41(3). 275-301.

Sawyer. A. (2005). Targeting amnesties at ingrained avoidance-a New Zealand initiative warranting wider consideration. *Journal of the Australasian Tax Teachers Association* 1. 84.

Schultz. M., Mouritsen. J., & Gabrielsen. G. (2001). Sticky reputation: Analyzing a ranking system. *Corporate Reputation Review*. 4(1). 24-41.

Tang. T. Y., & Firth. M. (2012). Earnings persistence and stock market reactions to the different information in book-tax differences: Evidence from China. *The International Journal of Accounting*. 47(3). 369-397.

The Institute of Chartered Accountants in England and Wales (ICAEW). (2017). *Deloitte overtakes PwC as world's largest firm.* https://economia.icaew.com/en/news/february-2017/deloitte-overtakes-pwc-as-worlds-largest-firm. Diakses terakhir pada 29April 2018.

Undang-Undang Pengampunan Pajak Nomor 11 Tahaun 2016 tentang Pengampunan Pajak [*Law of Tax Amnesty Number 11 of 2016 concerning Tax Amnesty*.].

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:16.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:16.

SECTION 4: FINANCE AND BANKING

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:23.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:23.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 18

THE EFFECT OF COST STICKINESS BEHAVIOUR ON EXECUTIVES COMPENSATION: THE CASE OF INDONESIAN LISTED BANKS

Ivone Wardhani and Hilda Rossieta*
Department of Accounting, Universitas Indonesia, Depok, Indonesia

ABSTRACT

Cost stickiness behaviour relates to asymmetric cost behaviour where costs do not change in accordance with the volume of activity. When costs are sticky, they decrease by a smaller percentage when income falls compared to the percentage by which they increase when income rises (Anderson, 2003). This study indicates how companies are planning cost stickiness behaviour and also undertakes more specific research into the cost of bank executive compensation. The study hypothesises that the banking industry is characterised by cost stickiness behaviour and that this has a positive influence on bank executive compensation. However, when there is an increase in selling, general and administrative (SGA) costs indicated by stickiness, the compensation cost also increases, signifying that a cost stickiness policy can enable executives to enjoy the double benefit of both a business empire and compensation even when income falls. Using a sample of 35 banking companies listed on the Indonesian Stock Exchange from 2013 to 2016, empirical models representing the hypotheses are formulated and tested using a linear regression statistic technique. The test delivers empirical evidence consistent with the hypotheses, namely that, overall, banks in Indonesia demonstrate the phenomenon of cost stickiness and that this increases the incidence of bank executives in Indonesia being awarded double benefits.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

* Corresponding Author's E-mail: hilda.rosieta@ui.ac.id.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:30.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 18

THE EFFECT OF COST STICKINESS BEHAVIOUR ON EXECUTIVES COMPENSATION: THE CASE OF INDONESIAN LISTED BANKS

Ivone Wardhani and Hilda Rossieta*
Department of Accounting, Universitas Indonesia, Depok, Indonesia

ABSTRACT

Cost stickiness behaviour relates to asymmetric cost behaviour where costs do not change in accordance with the volume of activity. When costs are sticky, they decrease by a smaller percentage when income falls compared to the percentage by which they increase when income rises (Anderson, 2003). This study indicates how companies are planning cost stickiness behaviour and also undertakes more specific research into the cost of bank executive compensation. The study hypothesises that the banking industry is characterised by cost stickiness behaviour and that this has a positive influence on bank executive compensation. However, when there is an increase in selling, general and administrative (SGA) costs indicated by stickiness, the compensation cost also increases, signifying that a cost stickiness policy can enable executives to enjoy the double benefit of both a business empire and compensation even when income falls. Using a sample of 35 banking companies listed on the Indonesian Stock Exchange from 2013 to 2016, empirical models representing the hypotheses are formulated and tested using a linear regression statistic technique. The test delivers empirical evidence consistent with the hypotheses, namely that, overall, banks in Indonesia demonstrate the phenomenon of cost stickiness and that this increases the incidence of bank executives in Indonesia being awarded double benefits.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

* Corresponding Author's E-mail: hilda.rosieta@ui.ac.id.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:37.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 18

THE EFFECT OF COST STICKINESS BEHAVIOUR ON EXECUTIVES COMPENSATION: THE CASE OF INDONESIAN LISTED BANKS

Ivone Wardhani and Hilda Rossieta*
Department of Accounting, Universitas Indonesia, Depok, Indonesia

ABSTRACT

Cost stickiness behaviour relates to asymmetric cost behaviour where costs do not change in accordance with the volume of activity. When costs are sticky, they decrease by a smaller percentage when income falls compared to the percentage by which they increase when income rises (Anderson, 2003). This study indicates how companies are planning cost stickiness behaviour and also undertakes more specific research into the cost of bank executive compensation. The study hypothesises that the banking industry is characterised by cost stickiness behaviour and that this has a positive influence on bank executive compensation. However, when there is an increase in selling, general and administrative (SGA) costs indicated by stickiness, the compensation cost also increases, signifying that a cost stickiness policy can enable executives to enjoy the double benefit of both a business empire and compensation even when income falls. Using a sample of 35 banking companies listed on the Indonesian Stock Exchange from 2013 to 2016, empirical models representing the hypotheses are formulated and tested using a linear regression statistic technique. The test delivers empirical evidence consistent with the hypotheses, namely that, overall, banks in Indonesia demonstrate the phenomenon of cost stickiness and that this increases the incidence of bank executives in Indonesia being awarded double benefits.

* Corresponding Author's E-mail: hilda.rosieta@ui.ac.id.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:44.

Keywords: Executive compensation, Indonesian listed banks, cost stickiness behaviour, conventional cost-efficient policy, empire-building theory, agency theory, bonus hypothesis theory.

INTRODUCTION

As institutions engaged in the economic arena, banks, through their series of economic efforts, play a major role as intermediaries connecting economic units in both the creation of financial markets and in wealth creation (Mishkin, 2001). Performance in the banking sector has maintained a relative rise in line with global trends, which has led management to expect some form of reward for achieving their performance targets. One such type of expected reward is greater compensation. It is known that compensation is a component of selling, general and administrative costs (SGA) which, according to Anderson (2013), are one of the cost components closely related to cost stickiness behaviour. This behaviour is best illustrated using a scenario where, when a firm's level of activity increases, its costs also increase in the form of an adjustment for the increased activity. Thus, there is a positive relationship between an increase in SGA expenses and an increase in corporate activity. However, some doubt remains with regard to what happens to this positive relationship when there is a decline in corporate activity. In theory, when a company's level of activity falls, so the costs involved therein should also fall if one considers that no additional activities are being undertaken by companies to support those additional costs. However, when corporate activity declines, managers are reluctant to lower costs. One of the factors contributing to this phenomenon is optimistic management in predicting future corporate earnings. They assume that by lowering or eliminating some resources directly as revenue decreases, they would incur higher adjustment costs and uncertainty over the period of declining revenue. In addition, in both agency theory and empire-building, this phenomenon also features motivation spurred by moral hazard behaviour. On the one hand, when earnings decrease and yet SGA costs are maintained or cut only slightly, benefits will be accrued both in the form of compensation as well as tangentially through empire-building itself. Even if corporate earnings fall, managers will continually increase the company size and build business empires to satisfy their self-interest for status, power and prestige (Masulius, 2007). On the other hand, the orientation of traditional cost behaviour, cost-efficient behaviour, is to achieve optimal revenue targets by minimising costs and building high corporate value. Therefore, managers who adopt cost stickiness behaviours run the risk of receiving lower compensation associated with a lower level of revenue, compared to the revenue level that would be obtained with traditional cost accounting.

This unique and irrational behaviour has attracted researchers to investigate the matter further in a bid to explain it. Many previous studies have focused on researching

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:44.

these cost behaviours in different countries, such as the United States, Britain, Germany and France (Calleja, 2006); Brazil, Chile and Mexico (Pamplona, 2016); 39 countries (Kitching, 2016); 22 European countries (Prabowo and Dirks, 2017); and Iran (Taherkhani, 2017). However, there is still a relative lack of research on such cost behaviour in Indonesia. One study examining this irrational cost behaviour was conducted by Sugiri et al. (2014), who examined cost stickiness behaviour in the banking industry, along with focusing on executive compensation and bank earnings in four countries in South East Asia. One of those countries was Indonesia, but they only observed whether or not the compensation of executives was characterised by stickiness behaviour. Accordingly, this research makes several contributions. First, it examines whether cost stickiness behaviour exists in the Indonesian banking industry by relating SGA costs and sales. Second, this research investigates the impact of this stickiness behaviour on the compensation paid to bank executives. Other studies that have examined such cost behaviours include Anderson et al. (2003), Subramaniam and Weidenmier (2003), Calleja et al. (2006) and He (2003). Indonesia is a member of the G20 countries that together account for around 85% of the world's GDP (http://www.telegraph.co.uk/business, accessed on, June 2017). Thus, it can be said that the Indonesian economy has played an important role in the global context. Moreover, understanding the rigidity of managerial costs in the Indonesian context will increase our understanding of the cost behaviour that represents agency cost associated with managers' game to maximise their self-interest.

Research on cost stickiness behaviour in the banking industry becomes more interesting when one considers the fact that banking is a highly regulated industry in various additional aspects compared to the non-financial industry. Acting on this phenomenon, banks are required to establish nomination and remuneration committees as independent parties that are obliged to disclose the compensation that they pay to their bankers. In Indonesia, the regulation covering this requirement is set forth in Bank of Indonesia Regulation Number 8/4/PBI/2006, Article 12, wherein it is stated that it is mandatory for the board of commissioners to form a remuneration and nomination committee as a means of keeping compensation proportionate to overall success. These nomination and remuneration committees are not only found in the banking industry but also in the non-financial industry, yet they are different in nature. Such committees are voluntary in non-financial industries, while in the banking industry, they are mandatory for regulatory oversight. This suggests that granting executive compensation is one of the main focuses of creating good corporate governance in the banking industry. Therefore, this research looks for empirical evidence to prove the existence of cost stickiness behaviour in the Indonesian banking industry, given that banking is a highly regulated industry and cost stickiness is contrary to a conventional-cost orientation, yet it is has a significant effect on bank executive compensation.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:44.

THEORETICAL FOUNDATION AND HYPOTHESES DEVELOPMENT

Cost Stickiness Behaviour and the Empire-Building Motive in the Banking Industry

In line with Anderson's (2003) research on the behaviour of cost asymmetries in the manufacturing industry, especially SGA costs, this study examines the behaviour of cost stickiness in the banking industry, which is generally excluded from research samples.

The banking industry is highly regulated, especially with respect to the interest rate paid on deposits (i.e., the funding rate) as well as lending interest rates. This firm oversight is due to the key role banks play in the national economy as the parties responsible for collecting and channelling funds to the public. This role has a direct impact on the financial stability of a country. Thus, the cost structure in the banking industry can be said to resemble the cost structure in the manufacturing industry, whereby, in the short term, it is relatively difficult to change a bank's component cost of production (i.e., the interest rate on deposits for third parties).

To realise financial stability, effective and efficient company activity is required, which is reflected in the company's cost levels. Interest cost is a major component of a bank's cost structure that is strictly regulated by the monetary authorities through Regulation Number 6/11/PBI/2004 concerning the 'Interest Rate for Deposit and Inter Bank Money Market Guarantee'. Thus, when a bank's main revenue, i.e., that earned from interest, falls, while it is relatively difficult to adjust the interest cost, the most likely cost adjustment will be to SGA expenses. However, given the major financial intermediary role of banks in contributing to the financial stability of a country, it is probable that the banking industry will retain a high level of SGA activity in order to maintain the quality of service to customers, despite the fact that their primary revenue from loan interest has fallen. Based on these arguments, this study proposes Hypothesis 1:

H1: The increases in costs when bank earnings are rising are of a greater magnitude than the decreases in costs when bank revenue is falling (i.e., there is a cost stickiness phenomenon present).

Bank Executive Compensation and Cost Stickiness Behaviour

Cost stickiness behaviour will reduce the level of bank profitability due to the fact that any decrease in SGA costs is relatively low compared to the decline in revenue. Furthermore, if such behaviour is associated with the bonus hypothesis of agency theory,

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:44.

such that executive incentive compensation is linked to the company's profit level, then this type of cost stickiness behaviour will lead to a fall in a bank management's incentive compensation. That is, sticky SGA is expected to negatively affect incentive compensation for banking executives.

Since banks serve as financial intermediaries, maintaining public trust in the funds they manage also requires them to make efforts to maintain financial stability. Thus, it is likely that sticky SGA costs will be seen as positive. When viewed from the empire-building motive theory, it can be expected that executives will receive incentives for their efforts to maintain the stability of the company's activities even when facing a decrease in the company's revenue. Thus, the possibility of sticky SGA costs positively affects bank executives' compensation incentives. Based on these two arguments, this research proposes Hypothesis 2:

H2: Sticky SGA costs are associated with bank executive compensation incentives.

RESEARCH METHODS

Sample Selection

This study samples all banking companies listed on the Indonesian Stock Exchange (IDX) during the period 2013–2016, which amounts to a total of 35 banks and 140 firm-year observations. However, the data used begin in 2012 as the research required the previous year's data in order to calculate the increase or decrease of SGA costs. Some of the data were incomplete and hence were excluded from the sample. The overall sample is used to answer Hypothesis 1 and Hypothesis 2. The sample selection performed for each hypothesis was the same because the two hypotheses have the same variables and are related to each other. The details of the sample selection can be seen in Table 1:

Table 1. Research Sampling Process

Sample Selection	**Year**				**Total Sample**
	2013	2014	2015	2016	
Banking companies listed on the BEI	42	42	42	42	168
Companies that have negative selling, general and administrative (SGA) value and revenue	0	0	0	0	0
Companies with incomplete data	(7)	(7)	(7)	(7)	(28)
Total Sample	35	35	35	35	140

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:44.

Hypotheses Testing

Hypothesis 1

Empirical Model (1) was adopted from Anderson et al. (2003) to test Hypothesis 1. The model was used to identify the effect of revenue changes (i.e., those which are classified into increasing and decreasing revenue) on costs (i.e., sales, general and administrative costs), which may be used to detect whether cost stickiness is adopted by listed banking companies in Indonesia. The evidence indicates that cost stickiness exists when $\beta1 > 0$ and $\beta2 < 0$.

Research Model (1) is given as follows:

$$\Delta SGA_{i,t} = \beta_0 + \beta_1 \Delta REV_{i,t} + \beta_2 DEC * \Delta REV_{i,t} + \varepsilon_{i,t} \quad \text{(Model 1)}$$

Hypothesis 2

Hypothesis 2 reveals the effect of cost stickiness on the executive compensation of listed banks in Indonesia. Theoretically, according to the bonus hypothesis, cost stickiness can be expected to have a negative effect on executive compensation. Yet, given that banks play a role as financial intermediaries, then maintaining their activities during periods of falling revenue is perceived to be the right policy and thus would reveal a positive association with managers' compensation. To test Hypothesis 2, we employed a model using multiple linear regression equations adopted from Anderson et al. (2003). Research Model (2) is:

$$\Delta KOMP_{i,t} = \beta_0 + \beta_1 E(\Delta SGA_{i,t}) + \varepsilon_{i,t} \quad \text{(Model 2)}$$

The notation of the variables in research Model 1 and research Model 2 is given as follows:

Dependent Variable

Δ SGAi,t = changes in sales, general and administrative costs

$\Delta KOMP_{i,t}$ = changes in executive compensation costs

Independent Variables

Δ REVi,t, = change in revenue

DEC = dummy variable; value of 1 if revenue decreased this year (REVi,t < REVi.t-1), and value of 0 otherwise (REVi,t > REVi.t-1)

DEC * Δ $REV_{i,t}$ = interaction of dummy variables when revenue declines due to capturing the construct of cost stickiness

$E(\Delta SGA_{i,t})$ = expected value of Δ $SGA_{i,t}$ derived from Model 1.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:44.

This research uses regressions with panel data. To estimate the model parameters with panel data, the best estimate was chosen from the results of three approaches: pooled least squares and fixed-effect and random-effect models. Classical assumption testing was also performed to verify there was no multi-collinearity, heteroscedasticity or autocorrelation.

RESEARCH RESULTS

Descriptive Statistics

First, we will explain the descriptive information on SGA expenses, the compensation paid to bank executives and the revenues of banking companies listed on the IDX during the period 2013–2016. The basic information is presented in Table 2.

Based on the descriptive statistical data above, it can be seen that the average of all Indonesian banking companies during 2013–2016 has seen an increase with respect to revenue, compensation and SGA costs. This is illustrated by the fact that the mean ΔSGA, ΔKOMP and ΔREV have values greater than 0, with the respective values of 0.12874, 0.15319 and 0.11574. The maximum (minimum) values of the $\Delta SGA_{i,t}$ and $\Delta KOMP_{i,t}$ variables are 2.40399 (–2.29703) and 2.41727 (–2.45699), respectively. The greatest increase in SGA cost was found at PT Bank Mandiri (Persero) Tbk, while the greatest decrease in SGA cost was seen at Bank Permata. Meanwhile, PT Bank Central Asia Tbk had the largest compensation cost, with the biggest decline recorded by Bank Danamon. Next, the variable ΔREV also had a fairly variable spread of data with significant imbalances, with the highest revenue increase generated by Bank Rakyat Indonesia and the lowest by the Banten Regional Development Bank.

Table 2. Descriptive Statistics

Pool Sample (N = 140)						
Variable	**N**	**Mean**	**Median**	**Standard Deviation**	**Maximum**	**Minimum**
ΔSGAi,t	140	0.12874	0.11404	0.34981	2.40399	–2.29703
ΔKOMPi,t	140	0.15319	0.11290	0.69560	2.41727	–2.45699
ΔREVi,t	140	0.11574	0.12800	0.47385	1.40585	–4.55216
Variable	N	Frequency		Percentage		
		0	1	0	1	
DEC	140	118	22	84.29%	15.71%	

Variables:

ΔSGAi,t change in SGA costs. ΔKOMPi,t change in executive compensation. ΔREVi,t change in revenues. DEC dummy variable; value of 1 if revenue decreased this year (REVi,t < REVi.t-1), 0 otherwise (REVi,t > REVi.t-1).

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:44.

The DECREV dummy variable has a value of 1 for a banking company that saw a decrease in revenue, and a value of 0 for a bank that experienced an increase in revenue by comparing the years t and t–1. There was a lower frequency of DECREV having a value of 1 than of it having a value of 0, which supports the previous statement that, during the period 2013–2016, Indonesian banks experienced a general increase in revenue. Moreover, given that the banking industry is highly regulated, its revenue was maintained so that the companies could remain healthy and thus capable of responsibly managing the public funds of the depositors.

Empirical Test Results

The regression results were derived from the pooled least squares (PLS) method described in Table 3. The value of the probability F-statistic for the first model is 0.0000, meaning it is below the 1% significance level or in the 99% confidence level. This result demonstrates that the model is very reliable and that the independent variables correctly affect the dependent one. Furthermore, the adjusted R-squared value in this first model is 0.4716, which indicates that 47.16% of the movement of the independent variables can be explained by the dependent variable, while the other 52.84% is determined by variables not covered in the model. The regression results for Model 1 to test Hypothesis 1 are presented in Table 3.

Table 3. Empirical Test Results of Model 1

Variable	Predicted Sign	Coefficient	Prob	Sig
ΔREVi,t	+	0.5356098	0.000	***
ΔREVi,t*DEC	-	–0.5220078	0.009	***
N (Number of Observations)		140		
Adjusted R-Squared		0.4716		
Prob. (F-statistics)		0.0000		

*** Sig ≤1%.

Based on Table 3, it can be explained that in Model 1, both of the independent variables, $\Delta REV_{i,t}$ and $\Delta REV_{i,t}$ * DEC, have a significant influence on the dependent variable and have values that indicate a direction consistent with the prediction. Next, the value of the revenue variable coefficient ($\Delta REV_{i,t}$), or β1, is 0.5356098, which indicates that an increase in bank revenue equal to 1% will be followed by an increase in SGA costs equal to 0.5356%, *ceteris paribus*. The coefficient of interaction between the revenue and the dummy variables ($\Delta REV_{i,t}$* DEC) has a coefficient value, β2, which carries a negative sign that is equal to –0.5220078. This indicates that if we do not consider the direction of revenue change (i.e., decreased or increased revenue), a 1%

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:44.

change in SGA cost derived from a 0.536% change in revenue, is consistent with conventional-cost behaviour. Yet, when we do take into account the direction of revenue change, then revenue change has a drastically less severe effect on SGA change, at only 0.014% (i.e., 0.536% -0.522). Therefore, the negative value on the coefficient $\Delta REV_{i,t}$* DEC indicates the presence of cost stickiness in the Indonesian banking industry.

The evidence suggested by the empirical test result for Model 1 is consistent with Hypothesis 1 (H1). Hence, there was cost stickiness behaviour among listed banking companies in Indonesia during the period 2013–2016. This was marked by a change in SGA costs due to a change in revenue that was significantly lower once the fact that it related to a decreasing change in revenue was also considered. This indicates that the cost of banking SGA is sticky. The features of cost stickiness behaviour suggest that companies will readily increase the amount of resources expended when revenue increases, such as adding branch offices and employees, but that they are reluctant to reduce such resources when revenue decreases. Such reluctance at companies may be partially due to the fact that doing so would result in the company having to pay expensive adjustment costs. In addition, if a company is optimistic in predicting a speedy recovery of revenues in the near future, this will enable management to justify maintaining SGA expenses at a stable level during the period of decreasing revenue. The test results pertaining to Model 1 also support the findings reported by Anderson et al. (2003), which show that the cost of SGA has sticky features. In addition, these results support the outcome of research by Balakrishnan et al. (2010) stating that fixed costs and scale diseconomies on variable costs drive SGA costs to become sticky. Then, given that there is cost stickiness behaviour in the banking industry, the notion also supports empire-building theory. Accordingly, a company will choose to adopt stickiness behaviour pertaining to SGA costs when revenue decreases, despite the fact that this would result in a fall in profits due to the retention of resources that are considered inefficient. However, such cost stickiness does not serve as a barrier to management continuing to consume the benefits that may meet their self-interest. They will continue to benefit from the great corporate conditions, power and wealth until the negative effect of cost stickiness on compensation exceeds the benefit (Zagita and Rossieta, 2017). The empirical results for Hypothesis 2, which investigated the association between sticky cost SGA and compensation using Model 2, are presented in Table 4.

Table 4. Empirical Test Results of Model 2

Variable	Predicted Sign	Coefficient	Prob	Sig
ΔSGAi,t	+	1.163227	0.007	***
N (Number of Observations)		140		
Adjusted R-Squared		0.0420		
Prob. (F-statistics)		0.0086		

*** Sig ≤1%.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:44.

Table 4 shows that in Model 2, the independent variable $\Delta SGA_{i,t}$ is positively associated with the dependent variable $\Delta KOMP_{i,t}$. As explained earlier, the independent variables in Model 2 are the result of interaction with the stickiness tested in Model 1. Thus, $\Delta SGA_{i,t}$ already contains a stickiness component that can explain the effect of the cost stickiness behaviour on bank executive compensation. Referring to the regression result from Model 1, it is mentioned that SGA costs have stickiness properties, thus indicating that the percentage increase in SGA costs when revenue rises is greater than the percentage decrease in SGA costs when revenue falls. Theoretically, based on a conventional-cost orientation, cost stickiness would result in lower profitability as the main performance indicator. As profitability is used as the basis for determining executive compensation, cost stickiness will have a negative association with the change in executive compensation. However, the test results for Model 2 demonstrate that the coefficient $\beta 1$ shows there is a positive association between a change in compensation and a change in sticky SGA costs. This finding shows that even when a company's revenue declines, executives will continue to receive increased compensation. This means that executives receive double benefits. Firstly, benefits are derived from empire-building with large corporate conditions in the form of facilities for use by executives such as residences, vehicles and other perks due to executive power and the key roles they play in the company. Thus, even if revenues decrease, executives are likely to still have access to these facilities. Second, there are the benefits obtained by executives in the form of incentive compensation. Considering the asymmetric change in SGA costs seen during periods of revenue decrease, which contrasts with the case found when revenue increases, a positive association exists either way with regard to executive compensation. Thus, it can be concluded that executives will continue to be compensated even when revenue declines, with the value of the benefits derived not being much different from those obtained when revenue rises. Therefore, from the result of Hypothesis 2 (H2) testing, it can be deduced that the behaviour of cost stickiness has a positive influence on the compensation of bank executives in Indonesia. Therefore, the results of this research are contrary to those from Sugiri et al. (2014), who found no effect of cost stickiness behaviour on bank executive compensation, especially in Indonesia.

CONCLUSION, IMPLICATIONS, STUDY LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

This study finds that, in general, listed Indonesian banking companies have adopted cost stickiness behaviour. Accordingly, increases in SGA costs during periods of increasing revenue tend to be greater than any decreases in SGA costs during periods of decreasing revenue. Cost stickiness behaviour in the banking industry is consistent with

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:44.

empire-building theory, wherein a company will choose to adopt stickiness behaviour with respect to SGA costs when revenue decreases, resulting in a loss of profit from the retention of resources that are considered inefficient when revenue decreases. However, such unfavourable changes do not prevent management from continuing to enjoy benefits that satisfy their self-interested desires, such as luxurious corporate conditions, power and wealth.

Interestingly, cost stickiness behaviour is positively associated with executive compensation. Consequently, even when a bank's revenue declines, the executive will continue to receive double benefits. First, benefits are derived from empire-building with respect to large corporate conditions. Thus, even if revenues decrease, executives will continue to enjoy these facilities. Second, executives continue to obtain benefits in terms of executive compensation in the case of both increasing and decreasing revenue. For the banking industry, this relates to the role of banks as financial intermediaries through which they are expected to contribute to the maintenance of financial stability. Therefore, banks are expected to maintain the stability of their activities regardless of revenue trends (i.e., during increasing as well as decreasing revenue trends).

The findings of this study generate various implications for research. First, as a highly regulated industry, asymmetric cost behaviour exists among managers of Indonesian listed banking companies. Presumably, the behaviour can be justified when looking at the role of banks as financial intermediaries that are responsible for maintaining financial stability. Hence, banks should maintain the same level of activity regardless of any increase or decrease in revenue. For this behaviour, the managers of banks are rewarded through incentive compensation. Double benefits are derived from the size of the banks' empires as well as the positive incentive compensation accrued regardless of the change in SGA cost relative to the revenue change, thereby running the risk of excessive agency cost. Therefore, banks' immediate stakeholders (i.e., depositors, the general public, bank's oversight and regulators) should be aware of the potential for excessive agency cost favourable to the managers of banks. Such increased awareness would lead to more effective and efficient monitoring and control of banking activities. Further, executive compensation for banks' managers should be carefully balanced between the banks' financial performance and their contribution to maintaining financial stability.

However, this study also has some limitations, mainly due to the compensation of bank executives that comprised a fixed salary plus bonus (tantiem) as the sole factor. Further studies should separate fixed salary from the bonus aspect while considering the context of this study. Also, further studies should seek to explore more deeply the role of banks' managers in maintaining financial stability through the stability of activities associated with cost stickiness behaviour in contrast to conventional cost-efficient policies, which are assumed to be positively associated with profitability.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:44.

REFERENCES

Anderson, M. C., Banker, R. D., & Janakiraman, S. N. (2003). Are selling, general, and administrative costs "sticky"?. *Journal of Accounting Research*, *41* (1), 47-63.

Argilés, J. M., & García-Blandón, J. (2009). Cost stickiness revisited: empirical application for farms. *Spanish Journal of Finance and Accounting/Revista Española de Financiación y Contabilidad*, *38*(144), 579-605.

Balakrishnan, R., & Gruca, T. S. (2008). Cost stickiness and core competency: A note. *Contemporary Accounting Research, Forthcoming.*

Calleja, K., Steliaros, M., & Thomas, D. C. (2006). A note on cost stickiness: Some international comparisons. *Management Accounting Research, 17*(2), 127-140.

He, D., Teruya, J., & Shimizu, T. (2010). *Sticky selling, general, and administrative cost behavior and its changes in Japan.*

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*, *3*(4), 305-360.

Kallapur, S., & Eldenburg, L. (2005). Uncertainty, real options, and cost behavior: evidence from Washington State Hospitals. *Journal of Accounting Research*, *43*(5), 735-752.

Kitching, K., Mashruwala, R., & Pevzner, M. (2016). Culture and cost stickiness: a cross-country study. *The International Journal of Accounting*, *51*(3), 402-417.

Masulis, R. W., Wang, C., & Xie, F. (2007). Corporate governance and acquirer returns. *The Journal of Finance*, *62*(4), 1851-1889.

Mishkin, F. S. (2001). *The transmission mechanism and the role of asset prices in monetary policy* (No. w8617). National bureau of economic research.

Mohammadi, A., & Taherkhani, P. (2017). Organizational capital, intellectual capital and cost stickiness (evidence from Iran). *Journal of Intellectual Capital*, *18*(3), 625-642.

Pamplona, E., Fiirst, C., de Jesus Silva, T. B., & da Silva Zonatto, V. C. (2016). Sticky costs in cost behavior of the largest companies in Brazil, Chile and Mexico. *Contaduría y Administración*, *61*(4), 682-704. [*Accounting and Administration*]

Prabowo, R., Hooghiemstra, R., & Van Veen-Dirks, P. (2017). State Ownership, Socio-political Factors, and Labor Cost Stickiness. *European Accounting Review*, 1-26.

Subramaniam, C., & Weidenmier, M. L. (2003). Additional evidence on the sticky behavior of costs. *Social Science Research Network.*

Sugiri, S., Febrianto, R., & Kresnawati, E. (2017). Sticky cost behavior of bank's executive compensation in four South East Asian countries. *Journal of Economics, Business & Accountancy Ventura*, *19*(3), 363-376.

Yasukata, K. (2011). Are'Sticky Costs' the Result of Deliberate Decision of Managers?. *Browser Download This Paper.*

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:44.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 19

DO SYSTEMS OF COMMON LAW VERSUS CIVIL LAW AND THE PERCENTAGE OF MUSLIMS ENHANCE THE EFFECT OF CSR DISCLOSURES ON ISLAMIC BANKS' PERFORMANCE?

Agus Maulana[1,*], Dodik Siswantoro[2] and Miranti Kartika Dewi[2]

[1]Department of Accounting, Universitas Pembangunan Nasional Veteran Jakarta, Jakarta, Indonesia

[2] Department of Accounting, Universitas Indonesia, Depok, Indonesia

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

ABSTRACT

This paper examines whether the systems of common law and civil law and the percentage of Muslims in the population enhance the effect of CSR disclosures on the financial performance of Islamic banks. Using a CSR index of six dimensions and 56 items, we analyze the disclosures of 26 Islamic banks in Indonesia, Malaysia, Bahrain, and Jordan spanning 2013–2015 and measure performance as return on assets. We find that CSR disclosures enhance the banks' financial performance only in countries with common law systems. In countries governed by civil law, CSR disclosures impair the financial performance of Islamic banks. We find also that the higher the percentage of Muslims in the population, the more CSR disclosures benefit financial performance. Our research yields insights into how the legal systems and the concentrated Muslim populations enhance the effect of CSR disclosures on the Islamic banks' performance.

* Corresponding Author's E-mail: agus.maulana61@ui.ac.id.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:51.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 19

DO SYSTEMS OF COMMON LAW VERSUS CIVIL LAW AND THE PERCENTAGE OF MUSLIMS ENHANCE THE EFFECT OF CSR DISCLOSURES ON ISLAMIC BANKS' PERFORMANCE?

Agus Maulana[1,*], Dodik Siswantoro[2] and Miranti Kartika Dewi[2]

[1]Department of Accounting, Universitas Pembangunan Nasional Veteran Jakarta, Jakarta, Indonesia

[2] Department of Accounting, Universitas Indonesia, Depok, Indonesia

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

ABSTRACT

This paper examines whether the systems of common law and civil law and the percentage of Muslims in the population enhance the effect of CSR disclosures on the financial performance of Islamic banks. Using a CSR index of six dimensions and 56 items, we analyze the disclosures of 26 Islamic banks in Indonesia, Malaysia, Bahrain, and Jordan spanning 2013–2015 and measure performance as return on assets. We find that CSR disclosures enhance the banks' financial performance only in countries with common law systems. In countries governed by civil law, CSR disclosures impair the financial performance of Islamic banks. We find also that the higher the percentage of Muslims in the population, the more CSR disclosures benefit financial performance. Our research yields insights into how the legal systems and the concentrated Muslim populations enhance the effect of CSR disclosures on the Islamic banks' performance.

* Corresponding Author's E-mail: agus.maulana61@ui.ac.id.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-23 06:54:58.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 19

DO SYSTEMS OF COMMON LAW VERSUS CIVIL LAW AND THE PERCENTAGE OF MUSLIMS ENHANCE THE EFFECT OF CSR DISCLOSURES ON ISLAMIC BANKS' PERFORMANCE?

Agus Maulana[1,*], Dodik Siswantoro[2] and Miranti Kartika Dewi[2]

[1]Department of Accounting, Universitas Pembangunan Nasional Veteran Jakarta, Jakarta, Indonesia

[2] Department of Accounting, Universitas Indonesia, Depok, Indonesia

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

ABSTRACT

This paper examines whether the systems of common law and civil law and the percentage of Muslims in the population enhance the effect of CSR disclosures on the financial performance of Islamic banks. Using a CSR index of six dimensions and 56 items, we analyze the disclosures of 26 Islamic banks in Indonesia, Malaysia, Bahrain, and Jordan spanning 2013–2015 and measure performance as return on assets. We find that CSR disclosures enhance the banks' financial performance only in countries with common law systems. In countries governed by civil law, CSR disclosures impair the financial performance of Islamic banks. We find also that the higher the percentage of Muslims in the population, the more CSR disclosures benefit financial performance. Our research yields insights into how the legal systems and the concentrated Muslim populations enhance the effect of CSR disclosures on the Islamic banks' performance.

* Corresponding Author's E-mail: agus.maulana61@ui.ac.id.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:50:45.

We describe also the differences in CSR disclosures in countries with different legal origins.

Keywords: common law, civil law, CSR disclosure, Islamic banking, firm performances

INTRODUCTION

Corporate social responsibility (CSR) is a deeply rooted concept in today's financial service industry (Scholtens, 2009). Practitioners and researchers acknowledge that banks respond to public demand for transparency and accountability regarding social responsibility, and financial institutions have begun to incorporate CSR into their organizational strategies. Yet, what today is called corporate social responsibility emerged in Islam millennia ago. The duty to pay zakah, give alms, and honor the environment are taught in the Koran. It is not surprising, therefore, that studies investigate the influence of the Islamic identity on CSR reporting by Islamic financial institutions (Aribi and Gao, 2011; Haniffa and Hudaib, 2007).

Research into CSR practices of Islamic banks yields inconsistent results. Mallin et al. (2014) find that CSR disclosures enhance the financial performance of 90 Islamic banks from 13 countries. Nobanee and Elli (2016) find that they significantly influence the performance of the conventional banks in the UAE but not the Islamic banks. Aribi and Gao (2010) compare CSR disclosures of 21 shariah and 21 conventional financial institutions in Gulf countries. The results show a discrepancy between the disclosures by the non-Islamic and Islamic institutions, mostly related to religious themes such as the reports of Shariah Supervisory Boards (SSB), zakah, charitable donations, and interest-free loans (qard al-hasan).

Although many studies examine CSR in Islamic banking, none addresses whether legal origin (civil law/common law) and public relevance (percentage of Muslim population) enhance the influence of CSR on financial performance. Grassa and Gazdar (2014) argue that Islamic financial institution develops better in countries with common law than civil law because civil law is less responsive to the development of Islamic finance. They show also that greater concentrations of Muslims in the population encourage Islamic banking.

This study is motivated by the inconsistency of the results concerning the influence of CSR disclosures on the performance of Islamic banks and by the absence of research into the effects of legal systems and how Muslims in the population enhance the influence of CSR disclosures on the performance of Islamic banks. We seek to fill that gap in the literature. Our research yields insights into how the legal systems and the concentrated Muslim populations enhance the effect of CSR disclosures on the Islamic

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:50:45.

banks' performance. We describe also the differences in CSR disclosures in countries with different legal origins.

This paper proceeds as follows. Section 2 reviews the literature and hypothesis development. Section 3 is an overview of the research methods and sample selection. Section 4 presents the results and discusses the findings.

LITERATURE REVIEW

CSR and Corporate Performance

CSR is defined as an engagement in interests outside those of the company itself (McWilliams and Siegel, 2001). It represents a shift from corporate emphasis on the single bottom line of financial achievement to the triple bottom line of economic, social, and environmental performance.

Table 1 shows the results from previous studies concerning CSR disclosures and financial performance in Islamic financial institution. The differences in the results arise from the differing methods, time spans, and measures of CSR and performance. Mallin et al. (2014) and Platonova et al. (2015) find a positive relation between the disclosures and performance proxied by ROE and ROA. Nobanee and Ellili (2016) find CSR disclosure correlates negatively to firm value.

Table 1. Previous Studies

Author / Year	Title	Research Purpose	Journal
Mallin et al. (2014)	Corporate Social Responsibility And Financial Performance In Islamic Banks	Examine the relationship between CSR and financial performance in Bank Islam	Journal of Economic Behavior and Organization
Platonova et al. (2015)	The Impact of Corporate Social Responsibility Disclosure on Financial Performance: Evidence from the GCC Islamic Banking Sector	Examine the effect of CSR disclosure on financial performance in the Gulf Countries	Journal of Business Ethics
Grassa and Gazdar (2014)	Law And Islamic Finance: How Legal Origins Affect Islamic Finance Development?	Examine the effect of legal origin on the development of Islamic financial institution.	Borsa Istanbul Review

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:50:45.

The literature offers four theories to explain why companies undertake and disclose CSR activities: Stakeholder Theory, Agency Theory, Legitimacy Theory, and Signaling Theory (Fama and Jensen, 1983; Hahn and Kuhnen, 2013; Clarkson, 1995). The agency theory holds that costs arise from conflicts of interest and informational asymmetry between a firm's management and owners (Fama and Jensen, 1983). CSR disclosures reduce information asymmetry. The legitimacy theory holds that companies must reveal their activities to merit community support. CSR disclosures attest that companies observe community norms (Deegan, 2002). According to the stakeholder theory, satisfying stakeholders is critical to corporate success, and CSR disclosures are an effort to achieve it (Clarkson, 1995). The signaling theory regards CSR disclosures as management's message to owners that the company acknowledges its responsibility to a triple bottom line (Hahn and Kuhnen, 2013).

Aribi and Gao (2011) find that Islamic identity influences Islamic financial institutions to disclose CSR information. Under the stakeholder theory and the legitimacy theory, companies that engage in CSR and disclose their activities gain support from stakeholders that pays off in financial performance. Therefore, our first hypothesis is:

H1: The degree of CSR disclosure relates positively to Islamic banks' financial performance.

Legal Systems, Muslim Concentration, and Islamic Banks' Performance

Whether nations operate under common law or civil law affects the development and performance of Islamic banks. Common law systems are more flexible in responding to social and economic conditions, whereas the latter require time-consuming legislation and regulation—including those governing the disclosures of CSR activities in financial reports. La Porta et al. (1997) and La Porta (1999) find that countries with civil law systems have weaker investor protections and less-developed equity markets. Grassa and Gazdar (2014) find that Islamic financial institutions develop better in common law countries. Given these considerations, our second hypothesis is:

H2: Operating within a system of common law strengthens the positive effect of CSR disclosures on financial performance of Islamic banks.

Muslims are the primary consumers of sharia financial products and stakeholders of Islamic banks. The stakeholder theory argues that management discloses CSR information to earn support from stakeholders. Grassa and Gazdar (2014) find that the concentration of Muslims in a population enhances development of Islamic banking. Therefore, a greater concentration of Muslims in a population suggests greater

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:50:45.

disclosures of CSR activities and benefits for performance. Accordingly, our third hypothesis is:

H3: The concentration of the Muslim population strengthens the positive effect of CSR disclosures on Financial performance of Islamic banks.

METHODOLOGY AND MEASUREMENT

Sample Selection and Data

We examine the effect of CSR disclosures on financial performance and the moderating role of legal origin and public relevance on its relation. We sample Islamic banks in Indonesia, Malaysia, Bahrain, and Jordan that published CSR reports or annual reports during 2013–2015 in Bahasa or English. The data for CSR disclosures and financial performance are from annual reports available on the companies' websites. Muslim population data are from the CIA World Factbook.

Variables

Our dependent variable is the financial performance of Islamic banks. Platonova et al. (2015) uses ROA to measure performance, whereas Mallin et al. (2014) use ROA and ROE. We use ROA, as it represents the return on assets under management.

Our independent variable is CSR disclosures. We proxy it using the CSR index developed by Platonova et al. (2015) based on AAOIFI standard No. 7. It has six dimensions: (1) Vision and Mission Statements, (2) Products and Services, (3) Alms, Donations, and Funds, (4) Commitment to Employees, (5) Commitment to Debtors, (6) Commitment to Community. Each dimension is specified further, creating 56 disclosure items (AAOIFI, 2015).

To avoid potential bias and scoring, the CSR index is weighted as follows:

$$〖CSR〗_i = (\sum_{t=1}^{n} X_{ijt})/N$$

CSRi is the CSR score of Firm i. Xijt is disclosure of index item X by firm i at time t and dimension j. It takes the value of 1 if the firm reported the item in CSR disclosures and 0 otherwise. N is the total of items from all six index dimensions.

To test the moderating role of legal systems, our classification of countries obeying common law or civil law follows La Porta et al. (1997), La Porta (1999), and Grassa and Gazdar (2014). Indonesia and Jordan are civil law countries; Malaysia and Bahrain are

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:50:45.

common law countries. We used the percentage of Muslims among the total population to measure public relevance.

Research Model

We use a panel data regression model. To avoid multicollinearity, we used Generalized Least Squares (GLS) and tested the effect of legal origin and public relevance separately with STATA software version 14.0.

Model 1

Model 1 examines the effect of CSR disclosures on financial performance of Islamic banks in common law and civil law countries.

$$〖ROA〗_{it} = \beta_0+\beta_1 〖CSRD〗_{it}+\beta_2 〖SIZE〗_{it}+\beta_3 〖AGE〗_{it}+\beta_4 〖SSB〗_{it} \quad (1)$$

Model 2 - Panel A

This model examines also the effect of CSR disclosures on financial performance of Islamic banks in common law and civil law countries, but it combines both legal systems in one pool to analyze interactions of variables CSRD and LEGAL and its effect on financial performance (ROA).

$$〖ROA〗_{it} = \beta_0+\beta_1 〖CSRD〗_{it}+\beta_2 〖CSRD〗_{it}* 〖LEGAL〗_{it}+\beta_3 〖SIZE〗_{it}+\beta_4 〖AGE〗_{it}+\beta_5 〖SSB〗_{it} \quad (2)$$

Model 2–Panel B

This model examines whether public relevance strengthens the impact of CSR on profitability.

$$〖ROA〗_{it} = \beta_0+\beta_1 〖CSRD〗_{it}+\beta_2 〖CSRD〗_{it}* 〖PUBLIC〗_{it}+\beta_3 〖SIZE〗_{it}+\beta_4 〖AGE〗_{it}+\beta_5 〖SSB〗_{it} \quad (3)$$

where,

ROA it = Return on assets of firm i in year t.
CSRD it = CSR disclosure index in year t.
LEGAL it = Dummy variable, 1 if common law, 0 otherwise.
PUBLIC it = Percentage of Muslim population.
SIZE it = Natural logarithm of total assets in year t.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:50:45.

AGE it = Age of bank in year t.
SSB it = Number of members SSB in year t.
β0 = Constant.
β1, β2, …, β5 = Coefficient.

RESULT AND DISCUSSION

Descriptive Statistics

Information from stock exchanges and central banks indicates that 26 Islamic banks meet the criteria for this study: 13 in Indonesia, five in Malaysia and Bahrain, and three in Jordan. There are 76 observations for the period 2013–2015.

Table 2. Descriptive Statistics

	N	MIN	MAX	MEAN	MEDIAN	STD
CSRD	76	0.2500	0.8214	0.5538	0.5714	0.1328
ROA	76	-0.0751	0.0524	0.0084	0.0080	0.0160
PUBLIC	76	0.6130	97.2000	12.1982	0.8720	31.3610
LEGAL	76	0.0000	1.0000	0.3816	0.0000	0.4890
SIZE	76	20.0855	31.8848	25.9740	26.2709	4.0710
AGE	76	1.0000	36.0000	10.8947	9.0000	8.6419
SSB	76	2.0000	7.0000	3.3684	3.0000	1.3841

Table 2 presents data for each variable. It presents each and the distribution of maximum values (MAX), minimum values (MIN), averages (MEAN), and standard deviations (STD). The highest (lowest) CSR disclosure score is 0.82 (0.25). That is, the bank disclosed 82% (25%) of the information captured by the CSR index. Average CSR disclosure is high at around 55%.

Table 3 shows that the highest average total CSR disclosures are in Jordan (62%) and Bahrain (61%). The lowest average score is Malaysia (46%). Indonesia leads in disclosures about commitment to employees (71%). Malaysia leads in disclosures about products and services (67%). Bahrain leads in disclosures related to commitment to community and charitable activities. Jordan more actively discloses information about commitment to employees. Among the six dimensions of the CSR index, Company Vision and Mission has the least disclosures overall. Islamic banks today pay less attention to corporate goals in serving the Muslim community and pay less attention to commit only to business activities that consistent with Islamic principles.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:50:45.

Table 3. Comparison of Inter-State Disclosure

CSRD Dimension	IDN	MYS	BHN	JDN
Mission and Vision Statement	0.3743	0.2381	0.3185	0.4815
Products and Services	0,5789	0.6786	0.6867	0.7556
Zakah, Charity and Benevolent Funds	0.5035	0.4286	0.6578	0.4296
Commitment Towards Employees	0.7158	0.4786	0.5933	0.7667
Commitment Towards Debtors	0.5684	0.5000	0.7467	0.5333
Commitment Towards Community	0.5789	0.4694	0.7619	0.7460
Average of Total Score	0.55	0.46	0.62	0.61

Regression Analysis

Model 1 examines whether common law or civil law legal systems bear different relations to CSR disclosures and financial performance. GLS estimation confirms its soundness. The results for Wald tests are below 1. R-squared is 0.27 for the common law model, and 0.23 for the civil law model (Table 4).

Table 4 shows that the effect of CSR disclosures on financial performance is negative under civil law and is positive under common law. This finding accord with Grassa and Gazdar's (2014) conclusion that investor protections are stronger in common law countries. In addition, the flexibility of legal change in common law countries supports the growth of new Islamic banks in the market.

Table 4. Regression Analysis Model 1

	Common Law		**Civil Law**	
	Coeficient	z	Coeficient	z
CSRD	0.1543**	1.76	-0.1209*	-2.27
SIZE	-0.0061*	-0.70	0.0471***	3.98
AGE	0.0023	1.18	-0.0075**	-2.58
SSB	-0.0079	-1.51	0.4834*	4.14
Obs.	29		47	
R-square	0,2746		0,2331	
Wald test (p-value)	781.28 (*p-value = 0.000*)		128.83 *(p-value = 0.000)*	

*, **,*** Represent significance at 0.10, 0.05 and 0.01 levels respectively.

In civil law countries, CSR disclosures negatively affect performance of Islamic banks. These results match those by Servaes and Tamayo (2013) and Arifin and Wardani (2016). CSR disclosures affect adversely financial performance (ROA) because they are costly. Their expense can reduce profits of Islamic banks because they are generally new to the market, have smaller market shares, and lack capital strength.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:50:45.

To corroborate the results in Model 1, Model 2 Panel A merges common law and civil law data for analysis in a single pool. Table 5 confirms its robustness. The Wald tests and p-values are below 1, and R-square is 0.20.

Table 5. Regression Analysis Model 2 - Panel A

	Coeficient	**z**
CSRD	-0.1777***	-3.94
*CSRD*LEGAL*	0.2411**	2.10
SIZE	0.0224 **	2.67
AGE	-0.0023	-1.15
SSB	-0.0040	-0.52
Obs.	76	
R-square	0,2059	
Wald test (p-value)	131.28 *(p-value = 0.000)*	

, **,** Represent significance at 0.10, 0.05 and 0.01 levels respectively.

CSR disclosure has a negative effect on financial performance of Islamic banks with a coefficient of -0.1776. However, the interaction between CSR disclosure and legal origin (CSRD*LEGAL) shows an affirmative influence on financial performance. These findings support the results of the previous analysis that legal origin influences the relation of CSR disclosure and financial performance. These findings indicate that the effects of CSR on financial performance are greater for Islamic banks in common law countries. As La Porta et al. (1997) and La Porta (1999) state, investor protections, and flexibility in changing rules encourage the development of Islamic financial institutions new to the market.

Table 6. Regression Analysis Model 2 – Panel B

	Coeficient	z
CSRD	0-.1612***	-3.50
*CSRD*PUBLIC*	0.0014*	0.83
SIZE	0.0289***	3.64
AGE	-0.0025	-1.20
SSB	0.0032	0.45
Obs.	76	
R-square	0,3267	
Wald test (p-value)	121.66 (*p-value = 0.000*)	

, **,** Represent significance at 0.10, 0.05 and 0.01 levels respectively.

The results for Model 1 and Model 2 Panel A do not confirm fully Hypothesis 2. CSR disclosures affirmatively affect the financial performance of Islamic banks only in common law countries. The results of Model 1 support Hypothesis 2. Common law

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:50:45.

systems strengthen the positive influence of CSR disclosures on financial performance of Islamic banks.

Table 6 shows that the results for Model 2 confirm Hypothesis 3. A higher percentage of Muslims in the population strengthens the influence of CSR disclosures on the performance of Islamic banks. Overall, Model 2 is robust: the Wald tests and p-values are below 1, and R-square of 0.32. The main variable analyzed is the interaction between CSR disclosures and public relevance (CSRD x PUBLIC). The coefficient of interaction is positive (0.0013) and significant at 10%.

Our results are noteworthy for the stakeholder theory. They confirm that Islamic banks communicate their CSR activities to stakeholders and in doing so garner support that improves their financial performance.

CONCLUSION

We have examined whether common law versus civil law legal systems and the percentage of Muslims in the population enhance the influence of CSR disclosures on the financial performance of 26 Islamic banks Indonesia, Malaysia, Bahrain, and Jordan during 2013–2015. Results show that CSR disclosures enhance financial performance only in countries with common law systems. In countries with civil law, CSR disclosures impair the financial performance of Islamic banks. Investor protections and more flexible law reforms in the former support the development of Islamic banks that are new to the market.

The analysis shows that the higher the percentage of Muslims among a country's population, the more positive the effect of CSR disclosures on financial performance of Islamic banks is. This finding accord with the characteristics of Islamic banks and their customer base.

Limitations

This study lacks data obtained primarily from annual reports. Although Malaysia has 16 Islamic banks, only five publish individual annual reports so that our sample obtained is diminished. Future studies need to gather more data and expand the research design by, for example, using data from countries with well-capitalized Islamic banks and different legal systems.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:50:45.

REFERENCES

AAOIFI. (2015), Accounting and Auditing, *Governance Standards for Islamic Financial Institutions*, AAOIFI.

Alamer, A.R.A., Salamon, H.B., Qureshi, M.I. and Rasli, A.M. (2015), "CSR's Measuring Corporate Social Responsibility Practice in Islamic Banking: A Review," *International Journal of Economics and Financial Issues*, 5(1S), pp. 198-206.

Alamer, A.R.A., Salamon, H.B., Qureshi, M.I., and Rasli, A.M. (2015), "How do we measure corporate social responsibility of Islamic banks through their business processes and oriented outcomes?" *International Journal of Economics and Financial Issues*, 5, pp. 190–197.

Amran, A., Amran, A., Fauzi, H., Fauzi, H., Purwanto, Y., et al. (2017), "Social responsibility disclosure in Islamic banks: a comparative study of Indonesia and Malaysia," *Journal of Financial Reporting and Accounting*, 15, pp. 99-115.

Aribi, Z. A., and Arun, T. (2015), "Corporate social responsibility and Islamic financial institutions (IFIs): management perceptions from IFIs in Bahrain," *Journal of Business Ethics*, 129, pp. 785-794.

Aribi, Z.A and Gao, S. (2010), "Corporate social responsibility disclosure: a comparison between Islamic and conventional financial institutions," *Journal of Financial Reporting and Accounting*, 8, pp.72-91.

Aribi, Z.A and Gao, S. (2011), "Narrative disclosure of corporate social responsibility in Islamic financial institutions," *Managerial Auditing Journal*, 27, pp. 199-222.

Arifin, J. and Wardani E.A. (2016), "Islamic corporate social responsibility disclosure, reputasi, dan kinerja keuangan: Studi pada bank syariah di Indonesia [Islamic corporate social responsibility disclosure, reputation, and financial performance: A study of sharia banks in Indonesia]," *Jurnal Akuntansi & Auditing Indonesia*, 20.

Clarkson, M. (1995), "A stakeholder framework for analyzing and evaluating corporate social performance," *Academy of Management Review*, 20, pp. 92-117.

Deegan, C. (2002), "Introduction: The legitimising effect of social and environmental disclosures–a theoretical foundation," *Accounting, Auditing & Accountability Journal*, 15(3), pp.282-311.

Fama, E. F. and Jensen, M.C. (1983), "Agency problems and residual claims," *The Journal of Law and Economics*," 26(2), pp.327-349.

Farook, S., Kabir Hassan, M., and Lanis, R. (2011), "Determinants of corporate social responsibility disclosure: the case of Islamic banks," *Journal of Islamic Accounting and Business Research*, 2, 114-141.

Grassa, R. and Gazdar, K. (2014), "Law and Islamic finance: How legal origins affect Islamic finance development?," *Borsa Istanbul Review*, 14(3), 158-166.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:50:45.

Gugler, K., Mueller, D.C., Peev, E., and Segalla, E. (2013), "Institutional determinants of domestic and foreign subsidiaries' performance," *International Review of Law and Economics*, 34, pp. 88-96.

Hahn, R. and Kühnen, M. (2013), "Determinants of sustainability reporting: a review of results, trends, theory, and opportunities in an expanding field of research," *Journal of Cleaner Production*,59, pp.5-21.

Haniffa, R. dan Hudaib, M. (2007), "Exploring the Ethical Identity of Islamic Banks via Communication in Annual Reports," *Journal of Business Ethics*, 76, pp. 97-116.

La Porta, R. (1999), "The Quality of Government." *Journal of Law, Economics, & Organization*, 15, pp. 222- 279.

La Porta, R., De-Silanes, F.L., Andrei, S., and Robert, W.V. (1997) "Legal Determinants of External Finance," *The Journal of Finance*, 52(3), pp. 1131-1150.

Levine, R. (1999), "Law, finance, and economic growth," *Journal of Financial Intermediation*, 8(1-2), 8-35.

Mallin, C., Farag, H., and Ow-Yong, K. (2014), "Corporate social responsibility and financial performance in Islamic banks," *Journal of Economic Behavior and Organization*, 103, pp. S21- S38.

McWilliams, A. and Siegel, D. (2001), "Corporate social responsibility: A theory of the firm perspective," *Academy of management review*, 26(1), pp.117-127.

Nawaiseh, M.E., Boa, S.S.A., and El-shohnah, R.A.Z.Y. (2015), "Influence of firm size and profitability on Corporate Social Responsibility Disclosures by Banking Firms (CSRD): evidence from Jordan," *Journal of Applied Finance & Banking*, 5, pp. 97-111.

Nobanee, H. and Ellili N. (2016), "Corporate sustainability disclosure in annual reports: Evidence from UAE banks: Islamic versus conventional," *Renewable and Sustainable Energy Reviews* 55, pp. 1336-1341.

Platonova, E., Asutay, M., Dixon, R., and Mohammad, S. (2015), "The impact of corporate social responsibility disclosure on financial performance: evidence from the GCC Islamic banking sector," *Journal of Business Ethics*, pp.1-21.

Servaes, T. and Tamayo, A. (2013), "The impact of corporate social responsibility on firm value: the role of customer awareness," *Management Science*, 59, pp. 1045-1061.

Scholtens, B. (2009), "Corporate social responsibility in the international banking industry," *Journal of Business Ethics*, 86, pp. 159-175.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:50:45.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 20

ISLAMIC MICROFINANCE AND WOMEN'S EMPOWERMENT

Desi Adhariani*
Department of Accounting, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This study investigates microfinance and women's empowerment in a sharia-compliant lending cooperative in Indonesia. This study sets these female "micro-preneurs" and their lender in the context of empowerment. The qualitative results show that women entrepreneurs in the cooperative benefit from microfinance and perceive themselves as empowered by it. They have been aided by simple financial technique to enhance their finance and accounting knowledge and skills.

Keywords: microfinance, women empowerment, Foucault, accounting, accountability, Indonesia

INTRODUCTION

Microfinance involves lending small amounts (micro credits, maximum of Rp 50 million) to poor entrepreneurs and low-income borrowers who lack the collateral for bank loans. Microfinance programs help microenterprises to launch or to expand businesses and thereby escape poverty in developing economies.

* Corresponding Author's E-mail: desi.adhariani@ui.ac.id, desiadharis@gmail.com.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:50:53.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 20

ISLAMIC MICROFINANCE AND WOMEN'S EMPOWERMENT

Desi Adhariani*
Department of Accounting, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This study investigates microfinance and women's empowerment in a sharia-compliant lending cooperative in Indonesia. This study sets these female "micro-preneurs" and their lender in the context of empowerment. The qualitative results show that women entrepreneurs in the cooperative benefit from microfinance and perceive themselves as empowered by it. They have been aided by simple financial technique to enhance their finance and accounting knowledge and skills.

Keywords: microfinance, women empowerment, Foucault, accounting, accountability, Indonesia

INTRODUCTION

Microfinance involves lending small amounts (micro credits, maximum of Rp 50 million) to poor entrepreneurs and low-income borrowers who lack the collateral for bank loans. Microfinance programs help microenterprises to launch or to expand businesses and thereby escape poverty in developing economies.

* Corresponding Author's E-mail: desi.adhariani@ui.ac.id, desiadharis@gmail.com.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:18.

Micro-businesses in Indonesia share several characteristics defined by Decree No. 40 from the Minister of Finance. A micro-business is family-owned or individually owned and has maximum sales of Rp100 million yearly. Rp50 million is the maximum loan they can request from a bank. The type of goods a micro-business produces is not fixed, nor is the place of business permanent. Micro-firms have inadequate financial administration and seldom separate family and business finances. Owners may lack a strong entrepreneurial spirit and generally are poorly educated. They lack access to banking, although some have access to non-bank institutions, and generally have neither a business license nor meet legal requirements for operation such as applying for a tax identity number. Since the mid-1990s microfinance has targeted female entrepreneurs as a strategy to empower women while alleviating poverty (Mayoux, 2002). A major microfinance innovation inspired by the Grameen Bank is group lending. Micro-lenders draw together groups of five or six women, usually from the same locale, and lend to their individual members (Jacobs et al., 2012). Each member promises to repay loans made to a single member. If that borrower defaults, no woman in the group receives another loan. Peer pressure becomes the collateral for the loan and the assurance for its repayment. Peer pressure monitors and enforces contracts which leads to reductio of risks in the microfinance institution" (Jacobs et al., 2012). Groups meet weekly at a member's house with staff from the micro-lender attending as an informal lending officer.

Micro-finance and women's empowerment cannot be separated from the issue of poverty, which remains endemic in developing economies. Poverty in Indonesia is concentrated in rural areas and consumed 62.75% of Indonesia's population in 2015 according to Central Bureau of Statistics data.

Micro-finance promotes financial inclusiveness because micro-businesses seldom meet loan requirements at conventional financial institutions. It has also a global reputation as a tool to empower and to alleviate poverty among women.

Few authors examine micro-finance and women's empowerment (notably Mayoux 1998, 1999, 2000, 2001 and 2002), and none investigate how accounting can benefit both. This study extends the literature by addressing two questions: "Does micro-finance really empower women?" and "How can accounting facilitate their empowerment?" We answer those questions through a case study of a *sharia*-compliant lending cooperative in Indonesia.

LITERATURE REVIEW

Foucault on Power and Empowerment

Empowerment is an ideology rooted in social action to increase the power and influence of oppressed groups such as workers, women, and ethnic minorities. Foucault

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:18.

coins the term "biopower" to describe the transformation of a monarch's rule over his subjects into the regulatory power of the modern state exercised through disciplinary regimes, systems of surveillance, and normalizing tactics (Deveaux, 1994).

As Foucault sees it, the state's emphasis on prohibition and juridical authority gives way to interests in the education, discipline, health, and longevity of the populace, but the exercise of power nonetheless defines and permeates social interactions, including economic relationships. Foucault's later work emphasizes that the subject on whom governance is exercised must be a free subject in order to maintain a power relationship. That refers to freedom where individual or collective subjects confront possibilities in which several ways of behaving, several reactions and diverse comportments may be realized. In this context, power is separated from force, violence, and domination, which involve no freedom on the part of the subject.

Rationales for Micro-Finance

The proponents of micro-finance argue it serves three functions: financial self-sufficiency, alleviation of poverty, and women's empowerment.

Micro-finance enhances *financial-self-sustainability* by generating economic returns. Women receive micro-loans because women in developing economies tend to be less assertive. Lending to women potentially enhances their economic self-sufficiency while fostering a more successful enterprise.

Micro-finance *alleviates poverty* capitalizing the poor when they have no access to conventional borrowing. There are many poor women in developing economies and need concerting attention (Mosley & Hulme, 1998). Micro-lending develops sustainable livelihoods, communities, and social services such as healthcare, literacy, and infrastructure. Proponents argue that women are more concerned and responsible than men given their roles as wives, sisters, or mothers. Therefore, extending financial services to women will addres the poverty (Mayoux, 2002).

The third rationale is the *empowerment of women.* Financial access empowers women by extending their presence beyond the home, increasing their economic mobility, and building self-confidence (Wright, 2006). Studies argue that poverty can be alleviated only by erasing the structural, cultural, and religious constraints on the poorest and most marginalized in developing economies - who, again, are women (Fernando, 2006; Kabeer, 2001; Mayoux, 2000, 2002).

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:18.

Women's Empowerment

Judgments about progress in women's empowerment has been made vary with the evaluator's perspective (Davies, 2007). Tanima (2015) reviews studies that conclude micro-finance empowers women (Hashemi et al., 1996; Pitt & Khandker, 1996; Rahman, 1986). Goetz and Sen Gupta (1994) as well as Montgomery et al. (1996) provide a contrary evidence in form of disempowerment. Mayoux (2002) and Rahman (1999) show that these contradictory views because the mainstream understanding of empowerment originates in a narrow regard for simple statistics such as household income, repayment rates, and household assets. They argue that empowerment must include more sociopolitical, cultural and religious concerns (Tanima, 2015).

The Role of Accounting in Micro-Finance

The Indonesian Institute of Accountants, a professional organization that supports transparency and accountability in financial reporting, approved the Financial Accounting Standards for Micro, Small, and Medium Enterprise Entities (ED SAK EMKM) at its May 18, 2016, meeting. Financial accounting in Indonesia now observes three sets of standards: International Financial Reporting Standards apply to large and conventional enterprises; a second set of standards applies to entities with no public accountability; ED SAK EMKM applies to micro, small, and medium-sized enterprises. ED SAK EMKM simplifies accounting standards. For example, micro-firms may record assets and liabilities at historical cost (cost of acquisition). ED SAK EMKM is expected to help 57.9 million owners of Indonesian micro-businesses prepare proper financial statements without mastering the complexities of broader standards.

Accounting studies have not fleshed out the role of accounting in micro-finance. The studies generally adopt an economic framework that accentuates shareholders, wealth maximization, and technical analysis of performance and benchmarks (Molisa et al., 2012). Few if any studies examine how accounting and accountability systems actually or potentially influence women's empowerment (Tanima, 2015).

RESEARCH METHOD

This study involved eight months of observations and interviews with personnel at a Sharia cooperative and their 60 (sixty) female micro-preneurs. Established on January 16, 2006, in an urban area of Depok, Indonesia, SM Sharia Business Cooperative (SM) lends women money to start or to expand a business and offers other financial services. Its

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:18.

vision is to optimize women's potential in Depok. Lending observes Sharia principles honored in the standard *qardhul hasan* contract. That is, loans are interest-free and repaid in installments.

Micro-enterprises are 45% of SM's customers. About 5-10% of borrowers (10-15 customers) are bad credits, most of them female micro-preneurs. The interviewed managers suggested those borrowers are keeping inaccurate financial records, calculating costs incorrectly, co-mingling personal and business records, or managing cash and payables poorly. To assist them, the SM began to offer borrowers tutorials in managing their records. Forty female micro-preneurs from four borrowing groups joined the training. Their perceptions of such program are explored with the empowerment issue.

DISCUSSION AND ANALYSIS

Women's Empowerment

The notion of power is reflected in the perceptions of female micro-preneurs through interviews. The transformation from sovereign or state power to disciplinary power is evident in group lending, as Respondent A noted.

> I joined the cooperative because I did not want to get involved with a 'mobile bank' (creditors that lend at high rates) …. I do not mind the collective responsibility we have for a loan to a particular member, as we trust each other. (Respondent A)

Social identity is embedded in the lending scheme as the poor are identified in ways consistent with a self-regulating market - the notion of biopower. In this system, each member is viewed as an ally in economic success by assuring appropriate investment management and the success of their own capital (Rankin, 2001).

Women in this context are empowered by their group solidarity as borrowers which become a form of control mechanism to motivate repayment through shared liability and to provide financial discipline through peer pressure. As Rhyne and Otero (1992) put it: "Lenders can shift some of the loan processing and loan approval tasks onto groups because the groups have better access to information on the character and creditworthiness of potential borrowers" (p. 1564).

Comments from respondents reflect empowerment, which show freedom to choose the appropriate funding scheme.

> [T]he funding scheme from the cooperative is very helpful for me as sometimes we need unexpected funds for my family…. [T]he cooperative provides installments

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:18.

> affordable for us… and the routine meetings give me a sense of solidarity just like a family. (Respondent B)

> I am very thankful for the scheme provided by SM Cooperative. It provides non-interest bearing loans for me with flexible installment periods. (Respondent C)

Regular group meetings increase solidarity among the women in borrowing groups. SM's meetings often feature female preach who instruct on Islam and discuss crafts or healthy foods that foster ideas for new businesses. Attendees respond affirmatively to them.

> I love attending the weekly group meeting as it gives me knowledge about Islam. Sometimes I also learn how to make crafts such as brooches or how to cook healthy foods. I have made and sold my own brooches to increase my revenue. (Respondent D)

Micro-finance programs at SM show potential to contribute to women's economic, social, and political empowerment. Access to savings and credit strengthens their economic empowerment, incomes, and assets. The economic contribution creates freedom and raises women's participation in household decisions, enhancing family wellbeing. Their heightened economic role may also alter gender roles and raise women's status within households and communities.

As Mayoux (2002) indicates, however, actual contributions to empowerment often are limited, even in successful micro-finance programs. That is apparent from our observational findings. Most respondents remain in traditionally female, low-income activities, perhaps as a consequence of their rudimentary formal education. Their expenditures still prioritize husbands and male children, while daughters or daughters-in-law bear unpaid domestic work. Repayment pressures sometimes increase tensions among women in a group and lead to exclusion of the most disadvantaged, who may then become further disadvantaged. Five women in the four groups studied have been expelled for inability to repay.

Role of Accounting

Female micro-preneurs whom we interviewed appreciate SM's training on finance and accounting as depicted below.

> The program is really useful for me in understanding the amount I receive from my business and the amount I spend using the revenues. It becomes more controllable so I can report it to my husband clearly. (Respondent E)

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:18.

I can become more disciplined in managing my business transactions and hence become wiser in spending money. (Respondent F)

CONCLUSION

This study has investigated women's empowerment through micro-finance and the role of accounting to enhance it. Observations and interviews with managers and members at a *sharia*-compliant cooperative in Indonesia revealed that borrowers perceive themselves to be empowered by micro-lending and by tutorials in business accounting. However, residues of oppression linger in spending more on husbands and sons than on daughters. The image of a system that uses rather than benefits women persists.

ACKNOWLEDGMENTS

This study is funded by a Community Engagement Grant from Universitas Indonesia in 2017 under the title "The Development of Financial Skills for Female Micro-entrepreneur Debtors of SM Sharia Cooperative, Depok, Indonesia."

REFERENCES

Davies, M. 2007. *Notes towards an Optimistic Feminism: A Long View.* England: Ashgate Pub Co.

Deveaux, M. 1994. Feminism and empowerment: a critical reading of Foucault. *Feminist Studies* 20(2): 223-247.

Fernando, J. 2006. Microcredit and empowerment of women: visibility without power. In: *Microfinance-Perils and Prospects*, edited by J. Fernando, London and New York: Routledge.

Foucault, M. 1979. *Discipline and Punish.* New York: Vintage.

Goetz, A. M. & Sen Gupta, R. 1994. Who takes the credit? Gender, power and control over loan use in rural credit programmes in Bangladesh. *World Development* 24(1), 45-63.

Hashemi, S., Schuler, S., & Riley, A. 1996. Rural credit programs and women's empowerment in Bangladesh. *World Development* 24(4), 635-653.

Jacobs, K., Habib, M., Musyoki, N. & Jubb, C. 2012. Empowering or Oppressing: the Case of Microfinance Institutions. In: *Handbook of Accounting and Development*,

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:18.

edited by T. Hopper, M. Tsamenyi, S. Uddin, & D. Wickramsinghe 162-182. Cheltenham: Edward Elgar Publishing Limited.

Kabeer, N. 2001. Conflicts over credit: re-evaluating the empowerment potential of loans to women in rural Bangladesh. *World Development* 29(1): 63-84.

Mayoux, L. 1998. Participatory Learning for women's empowerment in microfinance programmes. *IDS Bulletin* 29(4): 39-50.

Mayoux, L. 1999. Questioning virtuous spirals: microfinance and women's empowerment in Africa. *Journal of International Development* 11(7): 957-984.

Mayoux, L. 2000. Women's empowerment and microfinance. Paper presented at the Beijing + 5 Conference, New York.

Mayoux, L. 2001. Tackling the down side: social capital, women's empowerment and micro-finance in Cameroon. *Development and Change* 32(3): 435-464.

Mayoux, L. 2002. Microfinance and women's empowerment: rethinking best practice. *Development Bulletin* 57(1): 76-80.

Molisa, P., Vandagombo, D. & Brown, J. 2012. Social and Environmental Accounting in Developing Countries-Challenges, Conflicts and Contradictions. In: *Handbook of Accounting and Development*, edited by T. Hopper, M. Tsamenyi, S. Uddin, & D. Wickramsinghe 288-311. Cheltenham: Edward Elgar Publishing Limited.

Montgomery, R., Bhattacharaya, D. & Hulme, D. 1996. Credit for the Poor in Bangladesh. In: *Finance against Poverty*, edited by D. Hulme & P. Mosley London and New York: Routledge.

Mosley, P. & Hulme, D. 1998. Microenterprise Finance: Is there a Conflict between Growth and Poverty Alleviation? *World Development*, 26(5), 783-790.

Pitt, M. & Khandker, S. 1996. *Household and Intrahousehold impacts of the Grameen Bank and Similar Targeted Credit Programs in Bangladesh*. Washington DC, World Bank.

Rahman, A. 1999. Microcredit initiatives for equitable and sustainable development: who pays? *World Development* 27(1): 67-82.

Rahman, R. I. 1986. *Impact of Grameen bank on the situation of poor rural women. Dhaka*, Bangladesh Institute of Development Studies, Agriculture and Rural Development Division.

Tanima, F. 2015. *Microfinance and women's empowerment in Bangladesh: a study of competing logics and their implications for accounting and accountability systems.* Unpublished PhD Thesis, University of Wellington, New Zealand.

Wright, K. 2006. The darker side to microfinance-evidence from Cajamaru, Peru. In: *Microfinance-Perils and Prospects*, edited by J. Fernando London and New York: Routledge.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:18.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 21

ANALYSIS OF GENDER DIVERSITY AND VOLUNTARY DISCLOSURE

Rizqi Nur Fitriana and Desi Adhariani*
Department of Accounting, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This study examines the association between gender diversity on a corporate board of directors and board of commissioners with voluntary disclosure in annual reports of manufacturing companies. Gender diversity is expected to increase the extent of the voluntary disclosure in annual reports. To examine the influence, this study uses Ordinary Least Square (OLS) method with 114 samples of manufacturing companies listed on the Indonesia Stock Exchange in 2012. The findings show that female representation on boards of directors and boards of commissioners and profitability do not affect the extent of voluntary disclosure. Meanwhile, the size of the company, its liquidity, leverage and size of the board jointly affect. The results imply the importance of increasing gender diversity to improve transparent accounting practices, including the voluntary disclosures in annual report.

Keywords: gender diversity, boards of directors, board of commissioners, voluntary disclosure

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

* Corresponding Author's E-mail: desi.adhariani@ui.ac.id, desiadharis@gmail.com.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:31.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 21

ANALYSIS OF GENDER DIVERSITY AND VOLUNTARY DISCLOSURE

Rizqi Nur Fitriana and Desi Adhariani*
Department of Accounting, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This study examines the association between gender diversity on a corporate board of directors and board of commissioners with voluntary disclosure in annual reports of manufacturing companies. Gender diversity is expected to increase the extent of the voluntary disclosure in annual reports. To examine the influence, this study uses Ordinary Least Square (OLS) method with 114 samples of manufacturing companies listed on the Indonesia Stock Exchange in 2012. The findings show that female representation on boards of directors and boards of commissioners and profitability do not affect the extent of voluntary disclosure. Meanwhile, the size of the company, its liquidity, leverage and size of the board jointly affect. The results imply the importance of increasing gender diversity to improve transparent accounting practices, including the voluntary disclosures in annual report.

Keywords: gender diversity, boards of directors, board of commissioners, voluntary disclosure

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

* Corresponding Author's E-mail: desi.adhariani@ui.ac.id, desiadharis@gmail.com.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:40.

INTRODUCTION

Public companies prepare annual reports containing financial and non-financial data and investors, creditors, and others use the reports to analyze the companies' condition. The objective of the publication of annual reports is to minimize asymmetric information. Corporate governance (CG) defines asymmetric information as a condition where managers have information that is not aligned to the information that investors have about the condition or the prospect of the company (Brigham & Houston 1999). According to Sudiartana (2013), asymmetric information in a company comes from managers trying to maximize the company's stock value. The signal of asymmetric information can be provided through the disclosure of information.

Corporate disclosures can be classifieds into two types: mandatory disclosure and voluntary disclosure. Mandatory disclosure refers to the company's obligation to provide an annual report compliant to the prevailing regulations, while voluntary disclosure refers to disclosure beyond the expected extent. There is no obligation for companies for voluntary disclosure (Sudiartana 2013). However, disclosure of information beyond the expected extent is an indicator that companies have met the principles of good corporate governance (GCG), one of which is transparency. Companies with more voluntary disclosure are perceived to be more transparent in their information disclosure.

Studies in Indonesia concerning the factors affecting voluntary disclosure have been carried out previously. However, only a few studies have examined gender diversity as a factor affectings the extent of voluntary disclosure. The previous studies on the relationship between gender diversity on boards and voluntary disclosure in Indonesia were carried out by Sudiartana (2013) and Kartikarini and Mutmainahs (2013), among others.

Sudiartanas (2013) studied thes effect of gender diversitys on voluntary disclosure in 357 companies listed on the Indonesia Stock Exchanges (ISE) in the period 2007 to 2008. Thes results of the hypothesis tests in that study showed that genders did not have any effects on the extent of voluntary disclosure.

Those results were different from those of Kartikarini and Mutmainah (2013), who studied the effect of gender diversity on voluntary corporate governance disclosure in 263 non-financial companies listed on the Indonesia Stock Exchange in 2011. They revealed that women representation on boards of directors has an effect on voluntary disclosure.

A number of previous studies have assessed the relationship between gender diversity and information disclosure. Nalikka (2009) studied the effect of gender diversity in companies on voluntary disclosure in their annual reports. The results of the study reveal that female representation on a BOD did not have any significant effect on voluntary disclosure in the annual report.

Therefore, based on the aforementioned description, there is interest in the relationship between gender diversity on board and voluntary information disclosure in

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:40.

annual reports. In Indonesia, studies concerning the effect of gender diversity and the extent of voluntary disclosure have been conducted; however, those studies have not separated the function and role of a board into the *two-tier* system commonly adopted in Indonesia. Public companies in Indonesia have a boardf of directors and a board of commissioners. Therefore, the researchers are motivated to assess the effect of gender diversity on boards of directors and boards of commissioners on voluntary disclosure in the scope off corporate governance.

THEORETICAL REVIEW AND HYPOTHESIS DEVELOPMENT

Agency Theory

The agency relationship between managers and shareholders can be considered as a contract between one or more individuals who appoint other individuals to satisfy the interest of the principal, including the delegation of power in decision-making (Jensen and Meckling, 1976). The management of a company is likely to seek to obtain maximum gain at the cost of other parties. Agency problems arise in companies from asymmetric information. Healy and Palepu (2001) suggested that asymmetric information might result in conflicts between owners and managers of companies.

Signaling Theory

The signaling theory describes why companies have an interest in disclosing financial information to external parties. The disclosure of accounting information in a financial report is a signal to investors of the merits of a company. A greater generous extent of disclosure may lead to a decrease in investors' transaction costs and perceptions of risks.

Theory of Resource Dependence

A number of studies have adopted the perspective of resource dependency. This implies that an organization works in an open system and needs to change and to obtain particular resources to survive. Consequently, this results in dependency between companies and external units.

The *Resource Dependence Theory* describes how external resources of companies have an effect on organizational behavior. This theory has implications on the optimal organizational structure, recruitment of employees and board members, production strategy, contract structure, external organizational relationships, and other aspects of organizational strategy (Aan 2012).

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:40.

Corporate Governance and Gender Diversity

Of the six principles of corporate governance (introduced by the Organisation for Economic Co-operation and Development (OECD) (2004), the principle of disclosure and transparency includes the very important issue of gender diversity and information disclosure in companies. In addition to the principles introduced by the OECD, there are additionally five other basic principles related to CG described in Indonesia by Komite Nasional Kebijakan (the National Policy Committee, or KNKG) (KNKG 2010). Gender diversity on boards of directors can be categorized under the principles of fairness and equality in the KNKG. It implies equal treatment and fair opportunities for employees in performing their work proportionally without considering their ethnic, religious, race, group, *gender*, or physical condition. Meanwhile, disclosure can be related to the principle of transparency.

Board Diversity

Williams and O'Reilly (1998) said diversity refers to distinguished factors or natures of individuals that make them unique and different from other individuals. The differentiating factors include the ratio of ethnicity (including frace and ethnicity), gender, nationality, religion, functional expertise, and age. Gomez-Meijia, Balkin and Cardy (2001) and Carter et al. (2007) said that currently, many companies realize that diversity of employees and top management provides a number of advantages to companies such as nurturing creativity, improving quality of decision-making, and enhancing supervision.

Gender Diversity on a Board

Currently, gender diversity is a trending topic in many studies. A study conducted by Ernst & Young (2009) found that a heterogeneous board is more likely to have better performance than a homogenous board. A number of other researchers have revealed that a board with heterogeneous members will produce more innovative decisions than a homogenous board.

Gender diversity is also an interesting topic to be studied in the context of Indonesia, in light of Kusumastuti, Supatmi and Perdana's study (2007) that revealed a perception that men are more suitable for important positions in companies than women are.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:40.

Gender Diversity on Boards of Directors

A board of directorsc is in charge of providing motivation and supervision to the activities and decisions in a company. A board of directors is also in charge of and is collegially responsible for managing the company.

Adams and Ferreira (2009) conducted a study to assess the role of female directors in companies. They found that female directors have a better presence than male directors and are more likely to join in supervision c female representationc on a board has a positive effect on corporate performance. Women board members are perceived to be hard workers and have more delicate communication skills. Thus, they offer better quality decision-making and problem-solving. Kusumastuti et al. (2007) revealed that, compared to men, women are more careful in their decision-making, are more thorough, and are more risk adverse. Therefore, female representation on the board will improve decision-making and reduce risk. Robbins and Judge (2008) revealed that, in general, women have more detailed analysis in their decision-making. They are likely to analyze issues in advance and process a decision resulting in more consideration and reasonable alternatives, before making a decision.

Gender Diversity on Boards of Commissioners

A board of commissioners serves the function of providing necessary supervision. Puspitasari (2014) revealed that female representation has more advantages when compared to a board exclusively comprised of men. Women are capable of creating a conducive environment for improving the performance of a board of commissioners with their discipline and carefulness in accomplishing work. Therefore, female representation affects making better decisions and controlling the company.

Huse and Solberg (2006) found that women have a higher level of commitment and involvement in the workplace. They are better prepared, more diligent, and ask more questions. Equally important, they also create a comfortable and suitable environment on boards of commissioners.

Voluntary Disclosure

According to Sudiartana (2013), voluntary disclosure is the disclosure that exceeds the mandatorily required extent of disclosure. There is no obligation for voluntary disclosure; however, exceeding the required extent of disclosure is an indicator that a company meets the principles of GCG, in terms of transparency. Companies practicing voluntary disclosure are more likely to be perceived as more transparent in their provision of information.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:40.

Hypothesis Development

The Effect of Gender Diversity on Boards of Directors on the Extent of Voluntary Disclosure

A company's board of directors are in charge of providing motivation and supervision to all corporate activities and decisions and are also in charge of and collegially responsible for corporate management. Having diverse members on the board of directorsc may lead to richer perspectives in decision-making.

Gul, Srinidhi and Ng (2011) found that femalec representationc on a board of directors has a positive and significant effect on information disclosure. According to Adams and Ferreira (2009), gender diversity on a board of directors enriches perspectives in decision-making. Kartika and Mutmainah's study (2013) on the effect of gender diversity on voluntary corporate governance disclosure in 263 non-financial companies listed on the ISE in 2011, found that female representation on a board of directors does have an effect on voluntary disclosure. Meanwhile, Nalikka (2009) also conducted a study on the effect of the gender of the boards of directors' members on voluntary disclosure in annual reports. She found that female representation on a BOD had no significant effect on voluntary disclosurec in reporting.

In the theory of *resource dependence,* the characteristics of board background are frequently perceived to have an effect on decision-making, and therefore, the quantity of information disclosed. Typical female characteristics as hard-working, communicative, careful, thorough, and risk-averse in decision-making make women influential in information disclosures in annual reports.

Therefore, the existence of female directors on boards of cdirectors is expected to have an effect on the extent of corporate voluntary disclosure. Based on the aforementioned description, the first hypothesis is developed as follows:

H_1: Female representation on a board of directors has a positive effect on the extent of voluntary disclosure.

Effect of Gender Diversity on Boards of Commissioners on the Extent of Voluntary Disclosure

Based on the agency theory, a board of commissioners serves to solve problems of information disclosure between managers and shareholders. Conflict of interest between agents and principals can be minimized through appropriate supervision of management. The board of commissioners is obliged to supervise a company's management. Gender diversity on the board of commissioners can minimize agency conflicts, since gender diversity has an effect on the corporate activities and decision-making of the boards of commissioners (Adams & Ferreira 2004). Female representation on boards of commissioners is expected to improve the quality of supervision over decisions made by

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:40.

the corporate board of directors regarding voluntary disclosures in the annual report. Women on boards of commissioners are more careful, thorough, and disciplined and have a higher commitment, presence, and participation in discussions; all of these characteristics affect the extent of the voluntary disclosure in annual reports.

Rao, Tilt and Lester (2011) found that having a higher number of women on a board of commissioners improves the process of decision-making. It improves the effectiveness of a board also, since women have a higher rate of presence and participation. This implies that women have a significant effect on the boards of commissioners. Based on the aforementioned description, the following hypothesis is developed:

H_2: Female representation on a board of commissioners has a positive effect on the extent of voluntary disclosurec in a company's annual report.

RESEARCH METHOD

The sample of this study consists of manufacturingc companies listed on the ISE that published an annual report in 2012. The inclusion/exclusion criteria of the sample in this study are as follows: 1) manufacturingc companies that published annual reports contained the ISE's 2012 *Fact Book;* 2) the annual reports disclosed information concerning the profile of board members to measure female representation including the biographical data, names, and photos of the board of directors and board of commissioners; 3) the report provided relevant, complete data on financial information to be used as the control variable; 4) companies delisted from the ISE from 1 January 2011 to 31 December 2012 were excluded from the study, and 5) companies with negative equity were excluded since they failed to describe company value and going concern for investors.

Using a purposive sampling method following the above inclusion criteria, 114 companies met the above inclusion/exclusion criteria to be included as the sample.

Variable Definitions

Research Model

$$\mathbf{VDISC_{is} = \alpha + s\beta_1 FBOD_i + s\,\beta_2 FBOC_i + \beta_5 ROA_{is} + \beta_6 ACID_{is} + \beta_7 DR_i + \beta_8 SIZE_i + \beta_9 TBOD_{is} + \beta_{10} TBOC_i + \varepsilon_i}$$

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:40.

Description of Variables

Independent Variables

The independent variables in this study is measured using the percentage of women on a boards of directors (*FBOD*) and the percentage of women on a corporate board of commissioners (*FBOC*). To obtain the data on female representation on boards of directors and boards of commissioners, we calculated the number of women on boards of directors and boards of commissioners in the annual reports of companies. Such data can be obtained by observing the names, photo, and other relevant data of the board members. This variable was measured using the method developed by Nalikka (2009), Kartikarini and Mutmainah (2013), and Sudiartana (2013).

Dependent Variables

The dependent variable is the completeness of voluntary disclosure. It is measured by determining the extent of voluntary disclosure in the sample companies' annual reports, using a checklist. To measure the extent disclosure, this study employed content analysis in the form of an index of disclosure completeness without any weight. The use of a non-weight method is applied to identify the existence of information items that are most likely disclosed in the corporate annual report (Adhariani 2005).

Table 1. Operational Definition

	Variable Studied	**Measurementcc**
Dependent variablec		
VDISC	Total Voluntary Disclosure	Total item of voluntaryc disclosure divided by item expected to be disclosed in annual report
Independent variable		
FBOC	*Female Board of Commissioners*	Percentage of women in board of commissioners
FBOD	*Female Board of Director*	Percentagec of womenc in board of directors
Control Variable		
Characteristics Companies:	Company size	*Ln* Total Asset
SIZE	*Leverage*	Total liabilities/total asset
DR	Profitability	Net income/total asset
ROA	Liquidity	(Current Asset –supplies) /current liabilities
ACID		Total board of commissioners
Corporate Governance:	Size of Board of commissioners	Total boards of directorss
TBOC	Size of Board of directors	
TBOD		

Description: VDISC = Voluntary disclosure, Q = *Item* of voluntary disclosure completeness presented in the annual report, S = total *items* of voluntary disclosure completeness disclosed in the annual report.

The index of voluntary disclosure (VDISC) is measured by assigning a score to each disclosure. When a point is disclosed in a company's annual report and sustainability report, it gets a score of 1. Otherwise, if it is not disclosed, it will get score 0. The scores obtained by each point of the disclosure are totaled to obtain the total score of disclosure for each company. VDISC is calculated as follows:

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:40.

$$\text{VDISC} = \frac{\sum Q}{\sum s}$$

We used Kurnia's checklist (2014) referring to the checklists in the studiess by Chau and Gray (2010). The checklists was then adjusted to the Bapepam Regulation No X.K.6 enacted in Indonesia in 2012. The disclosure information on the checklists was then divideds into three main categories: Strategics Information, Non-Financial Information, and Financial Information.

Control Variabless

The control variable, leverage (DR) in this study was measured using the debt ratio, whichs is calculated by dividing total liabilities by total assets. The size of the companys (SIZE) was measured by a natural logarithm of the total assets at the end of the year. Liquidity (ACID) of companies in this study was measured by the acid test ratio, which is calculated by the total current asset minus supplies divided by total liabilities at the end of the year. Corporate profitability was measured by return on assets (ROA) at the end of the year. Meanwhile, the size of the board of directors (TBOD) and the board of commissioners (TBOC) board was measured by counting the numbers of members on the board of directors and board of commissioners in each company.

RESULTS AND DISCUSSION

Descriptive Statistics

The descriptive statistics of variables in this study resulted in the following data:

The results of the descriptive statistics reveal that the mean score of total disclosure (VDISC) is 0.28. Therefore, it can be concluded that the extent of voluntarye disclosure in manufacturing firms in Indonesia in 2012 is 28%. For the variable *female board of commissioner* (FBOC), the lowest score was 0 and the highest score was 0.75. The mean FBOC in this study is 0.118, with a standard deviation of 0.182. This implies that the mean percentage of female members on boards of commissioners is 11.8%. For the variable *female board of director* (FBOD), the lowest score was 0, and the highest score was 0.67. *Mean* FBOC of this study is 0.153 with a standard deviation of 0.185. This implies that the mean percentage of female representation on boards of directors is 15.3%.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:40.

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Vdisce	114e	0.28d	0.08e	0.09e	0.52e
Fboce	114e	0.12d	0.18e	0e	0.75e
Fbode	114e	0.15 d	0.19e	0e	0.67e
Dre	114e	0.49e	0.22e	0.04e	0.99e
Roae	114e	0.07e	0.09e	- 0.19e	0.35e
Sizee	114e	28.18e	1.71e	23.55e	32.84e
Acide	114e	1.40e	2.39e	0.2e	5.49e
Tboce	114e	4.38e	1.80e	2e	12e
Tbode	114d	4.79e	2.16e	2e	13e

Description:

Vdisce = voluntary disclosure of annual report; α = constant; β = coefficient; *fbod = female board of director* taken from Nalikka's model (2009); $fboc_i$ = *female board of commissioners* from Nalikka's model (2009); roa_i = net income divided by total assets; $acid_i$ = current assets minus supplies divided by current liabilities; dr_i = total obligation divided by total assets; $size_i$ = company size; $tboc_i$ = number of members on board of commissioners; $tbod_i$ = number of members on board of directors

Results of Regression Analysis

The results of the regression analysis are presented below.

Table 3. Results of Regression Analysis

Variable	Hypothesis	Coefficient	t-Statistic	P-Value	P-Value (2- tailed)
Fboce	Effective	− 0.011e	− 0.29e	0.775c	0.775c
Fbode	Effective	− 0.026e	− 0.71e	0.481c	0.481c
Dre	+e	0.077e	1.88e	0.062c	0.031**c
Roae	+e	0.090e	1.14c	0.255c	0.128c
Sizee	+e	0.018 e	3.63c	0.000c	0.000***c
Acide	+e	0.011 e	1.59c	0.116c	0.058*
Tboce	+e	0.0069	1.60	0.113	0.057
Tbode	+e	0.0034c	0.88c	0.379c	0.189c
Conse		− 0.3374c	− 2.57c	0.011c	0.005c
Number of Observations	114c				
Adjusted R-squared	0.3176c				
F-statistic	7.57c				
Probe (*F-statistic*)	0.0000***c				

Description:

Vdisc = voluntary disclosure of annual report; α = constant; β = coefficient; *fbodc = femalec board of director* from Nalikka's model (2009); $fboc_{i\,c}$= *femalec board of commissionersc* from Nalikka's model (2009); roa_i = net income to total assets; $acid_i$ = current assets minus supplies divided by current liabilities; dr_i = total liabilities divided by total assets; $size_i$ = company size; $tboc_i$ = number of member of board of commissioners; $tbod_i$ = number of member of board of directors

***, **, * notation of significance level at alpha 1%, 5%, and 10%

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:40.

Effect of Female Representation in the Board of Commissioners on Voluntary Disclosure

The regression result shows that variable *female representation* on boards of commissioners does not have any significant effect on the extent of voluntary disclosure. This is not in line with the hypothesis in the model of this study stating that *female representation* on a board of commissioners has an effect on voluntary disclosure.

This result is probably due to the characteristics of women in that their decision-making is usually low-risk (risk aversion). Therefore, women chose to deliver less information to the public to minimize the probable risks resulting from voluntary disclosure. This finding is supported by Kusumastuti et al.'s study (2007). In addition, decisions are not exclusively determined by the female representation on boards of commissioners, and also other factors besides gender may affect the decisions made by each member of the board concerning the extent of voluntary disclosure.

The results of this study are confirmed by the study conducted by Anugerah and Dewayanto (2011) revealing that female commissioners have no effect on the extent of voluntary disclosure.

The Effect of Female Representation in the Board of Directors on Voluntary Disclosure

The variable *FBOD* had a negative and insignificant coefficient at the level of α = 5%, as reflected in the *p-value* of 0.481 *(p-value* > 0.05). This finding is not in line with the hypothesis in the model of this study, that *female representation* on boards of directors has a positive effect on voluntary disclosure. However, the results of this study support the studies conducted by Sudiartana (2013) and Nalikka (2009) revealing that female representation on boards of directors did not have any significant effect on the extent of voluntary disclosure. As with female representation on a board of commissioners, there is no effect of female representation on a board of directors on the extent of voluntary disclosure. This may also be because women are more risk-averse than men are. Therefore, disclosing less information to the public minimizes risk. In addition, fewer companies employ female directors, so the female influence is minimized. Therefore, there is no significant effect of gender on the decision-making of information disclosure to the public.

The results of this study are contradictory to the results of Kartikarini and Mutmainah's study (2012). That study showed that FBOD have a significant effect on voluntary disclosure. Having a feministic personality may affect the leadership decision-making styles in an organization.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:40.

The Effect of Control Variables

Some of the control variables showed a significant impact on corporate voluntary disclosure. In relation to the board, the size of the board of commissioners has a moderate effect on voluntary disclosure. Having a larger number of commissioners on a board leads to more extensive voluntary disclosure. This may be due to a larger board having tougher and more effective supervision over the company management, ensuring better information disclosure to the public. This result is in line with the study conducted by Coles, Daniel and Naveen (2008).

Sensitivity Test

To measure the robustness of the testing, a sensitivity analysis was performed by changing the measurement of female members of boards of commissioners and boards of directors. Female representation in the sensitivity test was measured using a dummy variable. The results were consistent with the main test, indicating that the results are insensitive to changes in the female representation measurement.

CONCLUSION

This study investigates the influence of gender diversity on boards on the extent of voluntary disclosure in annual reports of manufacturing companies in Indonesia. The results show that gender diversity, measured using the percentage of female representation on boards of directors and boards of commissioners, had no significant effect on voluntary disclosure in the annual reports of manufacturing firms in 2012. This result may be associated with the female characteristics that women bring to an organization. These characteristics may affect the style of leadership and decision-making. Women on boards of directors and boards of commissioners usually make lower-risk decisions; therefore, they choose to deliver less information to the public to minimize risk resulting from voluntary disclosure.

Limitations of the Study

This study has some limitations which can be refined further in future research. First, this study employed a cross-sectional method and, therefore, only collected samples from one year, 2012. Future studies may look at a longitudinal study, or a comparison between

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:40.

two specific years. This study also only took a sample of companies in the manufacturing industry in Indonesia. Further study may review other industries and other countries.

The checklist employed in this study only viewed voluntary disclosure in three main categories: strategic information, non-financial information, and financial information. Further studies may refine the checklist. The voluntary disclosure index score was assigned by the researchers based on their interpretation of information in the annual reports of the sample firms. Therefore, there could be varying scores among the companies based on the researchers' subjective interpretations. Having multiple, independent researchers score the disclosure information would minimize the risk of interpretive bias.

REFERENCES

Aan, A. B. (2012). *Resource dependence theory*. Available at http://www.scribd.com/doc/113570956/theory -ketergantungan-pada -sumber-daya-paper-doc.

Adams, R. B. & Ferreira, D. (2004). *Gender Diversity in the Boardroom*. ECGI Finance Working Paper No. 58. Available at http://ssm.com/abstracth =594506. Accessed on 28 July 2010.

Adams, R. B. & Ferreira, D. (2009). Women in the boardroom and their impact on governance and performance. *Journal of Finance and Economics, 94*, 291-309.

Adhariani, D. (2005). Level of voluntary disclosure in annual reports and its relationship with current earning response coefficient (ERC). *Journal of Accounting and Finance Indonesia, 2*, 24-57.

Anugerah, M. & Dewayanto, T. (2011). *The Influence of Corporate Governance Elements to the Extent of Corporate Social Responsibility Disclosure*. Diponegoro University. Capital Market Supervisory Agency KEP-134/BL/2006 and KEP-431/BL/2012.

Brigham, E. F. & Houston, J. F. (1999). *Financial Management*, English Edition, Jakarta: Erland.

Carter, D. A., D'Souza, F. Simkins, B. J. & Simpson, W. G. (2007). *The Diversity of Corporate Board Committees and Financial Performance*. Available at Http://ssrn.com/Abstract=1106698.

Chau, G. & Gray, S. J. (2010). Family Ownership, Board Independence and Voluntary Disclosure: Evidence From Hong Kong. *Journal of International Accounting, Auditing and Taxation, 19,* 93-109.

Coles, J. L., Daniel, N. D. & Naveen, L. (2008). Boards: Does One Size Fit All? *Journal of Financial Economics, 87,* 329-356.

Ernst and Young. (2009). *Groundbreakers: Using the strength of women to rebuild the world economy,* New Jersey.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:40.

Gul, F. A., Srinidhi, B. & Ng, A. C. (2011). Does board gender diversity improve the informativeness of stock prices*? Journal of Accounting and Economics*, *51*, 314-338.

Gomez-Mejia, L. R., Balkin, D. B. & Cardy, R. L. (2001). *Managing Human Resources.* 3rd edition. Prentice Hall International Inc. The United States.

Healy, P. & Palepu, K. (2001). Information asymmetry, corporate disclosure, and the capital market: A review of the empirical disclosure literature. *Journal of Accounting and Economics*, *31*, 405-440.

Jensen, M. C. & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*, *3*(4), 305-360.

Kartikarini, N. & Mutmainah, S. (2013). Analysis of gender influence on voluntary corporate governance disclosure in company annual report. *Diponegoro Journal of Accounting*, *2*, 1.

Komite Nasional Kebijakan Governance (KNKG). (2010). *General Guidelines of Good Corporate Governance.* Jakarta, Indonesia.

Kurnia, I. (2014). *The analysis of the association between the quality of accrual and the quality of disclosures in explaining the time series variation*. Mini thesis. Depok, Universitas Indonesia.

Kusumastuti, S., Supatmi, S. & Perdana, S. (2007). The influence of board diversity on corporate values in a corporate governance perspective. *Journal of Accounting and Finance*, *9*, 88-98.

Nalikka, A. (2009). Impact of gender diversity on voluntary disclosure in annual reports. *Accounting & Taxation*, *1*.

Organisation for Economic Co-operation and Development. (2004). *OECD: Principles of Corporate Governance*. Paris, France: Publications Services.

Rao, K. K., Tilt, C. A. & Lester, L. H. (2011). Corporate governance and environmental reporting: An Australian study. *Corporate Governance*, *12*, 143-163.

Sudiartana, I. M. (2013). The influence of gender diversity and education background of the board of directors on the area of voluntary disclosure. *The Journal of Accounting Research*, *3*, 1-15.

Williams, K. Y. & O'Reilly, III. C. A. (1998). Demography and diversity in organizations: A review of 40 years of research. *Research in Organizational Behavior*, *20*, 77-140.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:40.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 22

FINANCING MICRO-ENTERPRISES THROUGH THE CASH *WAQF*

Dewi Sriani*, Dodik Siswantoro and Miranti Kartika Dewi
Department of Accounting, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This paper provided an alternative model, known as Integrated Cash *Waqf* Micro-enterprise Investment-II (ICWME-II), of financial sources for micro-enterprises in Indonesia. This model used a literature review to propose and develop the ICWME-II model by integrating various elements' roles—from government to beneficiaries, such as *takaful*, development and control of human resources, and the multiplier effect—into a single plan. The paper is based only on conceptual analysis, that is, a literature review rather than on empirical analysis. Findings will enrich the literature on the cash *waqf* and recommend alternative sources of financing for micro-enterprises in Indonesia. The study also provides insights for government, policy makers, and managers' institutions for strengthening cash *waqf* mechanisms for micro-business financing.

Keywords: Cash, ICWME-II, financing, micro-enterprise

INTRODUCTION

Statistical data show that micro-enterprises account for about 70% of total enterprises in most of the world's economies and provide approximately 60% of total employment

* Corresponding Author's E-mail: dewisriani622@gmail.com.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:51:51.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 22

FINANCING MICRO-ENTERPRISES THROUGH THE CASH *WAQF*

Dewi Sriani*, Dodik Siswantoro and Miranti Kartika Dewi
Department of Accounting, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This paper provided an alternative model, known as Integrated Cash *Waqf* Micro-enterprise Investment-II (ICWME-II), of financial sources for micro-enterprises in Indonesia. This model used a literature review to propose and develop the ICWME-II model by integrating various elements' roles—from government to beneficiaries, such as *takaful*, development and control of human resources, and the multiplier effect—into a single plan. The paper is based only on conceptual analysis, that is, a literature review rather than on empirical analysis. Findings will enrich the literature on the cash *waqf* and recommend alternative sources of financing for micro-enterprises in Indonesia. The study also provides insights for government, policy makers, and managers' institutions for strengthening cash *waqf* mechanisms for micro-business financing.

Keywords: Cash, ICWME-II, financing, micro-enterprise

INTRODUCTION

Statistical data show that micro-enterprises account for about 70% of total enterprises in most of the world's economies and provide approximately 60% of total employment

* Corresponding Author's E-mail: dewisriani622@gmail.com.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:04.

(Thaker et al. 2016). This prominent role includes at least three perspectives: economic through job creation and welfare improvement; social through poverty reduction and provision of goods or services required by local communities; and political through redistribution of welfare and opportunity in society (Nasrullah 2012). Although micro-enterprises play a significant role in economics, some empirical studies have found that micro-enterprises have problems specifically in accessing external financing (Ganbold 2008; Punyasvatsut 2011; Ung and Hay 2011; Machmud and Huda 2011; Tadesse 2011).

The cash *waqf* is one potential funding source, besides *zakat*, *infaq*, and *shodaqoh*, for improving people's welfare. *Waqf* not only takes a role in providing religious and social facilities, but also in improving the people's economy (Syafieq 2014). According to Syafieq (2014), the cash waqf can potentially be used as a source of small business financing. In Indonesia, the regulation of *waqf* is Law No. 41 of article 16 (2004), stating that the *waqf* can be implemented for movable and immovable objects. Cash *waqf* is included in the moving objects category, which must be managed by *sharia* principles. The cash *waqf*'s great potential for improving the productive sector has become an interesting subject for researchers. How can financing through a cash *waqf* empower micro-enterprises?

Recent studies suggest that the cash *waqf* has become more important than other types because it is comparatively more productive than others, that is, land, buildings, books, and so on. Various studies have found cash *waqf*s profitable in the modern financial system (Aziz et al. 2013). However, the *waqf*'s potential to improve social welfare has not been widely recognized (Shahir and Zuki 2012). Indeed, many people are not familiar with the cash *waqf* (Rosidin 2015) although Muslims have been familiar with the *waqf* on immovable property such as land (Nugroho 2015). Whereas the potential of the cash *waqf* in some countries in the world has been developed as a powerful tool in improving social welfare, endowments of cash or the cash *waqf* also has potential for tackling issues, especially those related to micro-enterprises that face great challenges related to funding sources (Murad 2008).

Some researchers have undertaken studies of the cach *waqf*'s role in social empowerment (Yulma 2016) and management of *waqf* accumulation in a state endowment institution (Fikri 2016). Ismail and Mohsin (2013) also proposed a micro-financing model through a Cash *Waqf* through Financial Institution (CWFI) in Malaysia. Besides that, Thaker et al. (2016) investigated financing Malaysian micro-businesses through the cash *waqf* known as the Integrated Cash *Waqf* Micro-enterprise Investment (ICWME) model. In Indonesia, some researchers, including Masyita et al. (2002) have also proposed models for cash *waqf* management to alleviate poverty. However, this model has a broad scope and does not focus on the cash *waqf* in micro-financing. Other researchers, for example, Maimunah (2011), Yulma and Herianingrum (2016), and Syafiq (2014) have also discussed the cash *waqf* for community welfare and small

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:04.

business empowerment. These studies were more descriptive, however, and did not propose a framework for Indonesian micro-financing through the cash *waqf*.

This research aims to provide a model or framework for the cash *waqf* as an alternative source of financing for Indonesian micro-enterprises called Integrated Cash *Waqf* Micro-enterprise Investment II (ICWME II). The researcher adds the concept of a government role, human resource development, *takaful*, and the multiplier effect on one plan channeling the cash *waqf* into micro-business financing and beneficiaries as well. The model proposed here expands the ICWME model proposed for micro-financing through a cash *waqf* in Malaysia (Thaker et al. 2016). This model was chosen for development because it is more easily adapted by various countries, not only providing for urgent needs, but also improving social welfare independent of government funding (Ismail and Mohsin 2013). This model is also proposed for cash *waqf* plans (ICWME I) in Malaysia, where cultural and socio-economic conditions are similar to those in Indonesia, especially the large number of micro-enterprises.

In the literature review, researchers used sources such as national and international journals, articles, books, and official websites. The research result is development of the ICWME-II model as an alternative source of financing for micro-businesses through the cash *waqf*. The proposed model is expected to provide financial services for micro-businesses with no collateral, interest expense, or other stringent requirements typically encountered in conventional financial institutions. This paper contributes in two ways, first, enrichment of Islamic economic literature related to the cash *waqf*, especially micro-financing. Secondly, the paper will likely provide insights for the government, the country's standard maker, and managers to strenghten and implement the cash *waqf* as a source of empowerment funding, along with improvement and management of ther cash *waqf* as micro-business financing. To the best of the author's knowledge, this is the first Indonesian framework proposing micro-enterprise financing through cash *waqf*s by integrating various components into a single plan.

Next, this article divides into three sections: The first part discusses the legal definition and role of the cash *waqf* from the *sharia* perspective. The second part discusses the proposed cash *waqf* framework for financing for Indonesian micro-enterprises. The third and final section provides conclusions, limitations, and suggestions for further research.

THE SHARIA ASPECT OF THE CASH *WAQF* AND ITS ROLE

Definition of Cash *Waqf*

Waqf comes from Arabic, meaning *Al-Habs*, which means to withhold, stop, or still (Soemitra 2009). Thus, in Islamic *shari'a* the term indicates imposition of property rights

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:04.

on matter (*al-'ain*) to provide a benefit (*al-manfa'ah*) (Soemitro 2009). The *waqf* places property outside individual ownership and dedicates it to humanitarian purposes. Mohsin (2009) defines the cash *waqf* as the handover of cash sums by individual owners, companies, institutions, and organizations to benefit community welfare. The *waqf* property is capital that should not be reduced, but benefits should accrue constantly. *Waqf* owners can be individuals, institutions, organizations, NGOs, and private or public companies as long as they can transfer their ownership of, in this case, cash to God's property (Ismail and Mohsin 2013).

The Indonesian Ulama Council's *fatwa* defines a cash *waqf* as a *waqf* implemented by a person, group of people, or institutions of legal entity in the form of cash (Kasdi 2014). Endowments of cash can be issued through a certificate of *waqf* with different nominals so that individuals and institutions can buy cash *waqf*s to finance a planned project (Sadeq 2002). According to Islamic history, the term "cash *waqf*" was not known in the time of Prophet Muhammad SAW. The cash *waqf* was first introduced by Imam Zufar in the 8th century AD, through investment of *waqf* funds through *mudaraba*, and his profits were spent on social activities (Aziz 2017). Prophet Muhammad said that three actions do not break up even though a person has died: a religious child, useful knowledge, and *jariyah* benefit. *Waqf* is one form of charity. The cash *waqf* is a movable *waqf* received in Islam, so its creation must follow the same legal conditions as making an immovable *waqf* (Imam 1989; Rashid and Husain 1979).

The Role of the Cash *Waqf* in Financing Micro-Enterprises

Micro, small, and medium enterprises (MSMEs) account for about 60–70% in most Organisation for Economic Co-peration and Development (OECD) countries, particularly in Italy and Japan, and relatively fewer in the United States (Alona et al. 2016). MSMEs face major challenges in financing, administration, economic environment, and support and protection as well (Murad 2008). According to Storey (1994) and Sahlman (1990), often when micro-enterprises have a very small scale and sometimes involve start-up phases, lenders do not want to lend them money. According to Zulkarnain (2006: 126), small business is people's economic activity with a maximum net worth of Rp. 200,000,000, (excluding land and building). Such businesses have a maximum annual sales of Rp 1 billion and stand alone, as a company owned by an individual, a non-legal entity, including a cooperative, and this business is not a company or branch of a company owned or controlled by a holding company.

Endowment cash has grown into a financing tool, especially for micro, small, and medium enterprises. Several studies have suggested that cash *waqf* mechanisms for financing play an important role in providing funds for small and medium enterprises (Thaker et al. 2016). Cash *waqf*s became the most dominant form of endowment in the

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:04.

Ottoman period, from the early 15th century to the late 16th century (Cizacka 2004). During this period, education, health, public welfare, and religious activities were financed by the cash *waqf*.

During the 21st century, progress pushed the cash *waqf* into community development, for example, integrating the *waqf* into companies by providing financing to micro-enterprises.

Soetrisno (2003) said that *waqf* can be used for empowerment of micro-enterprises, which are still the majority of businesses in various countries, such as in Indonesia, where the proportion of MSME is 99.88% of enterprises. On the one hand, cash *waqf* can empower micro-enterprises and on the other, benefits derived from the cash *waqf*'s investment can be used for community empowerment. The cash *waqf* model can be an appropriate way of realizing social welfare and overcoming economic problems. Use of cash *waqf* for empowerment of small-scale enterprises is a mandate of Law No. 41, article 22 (2004) about *waqf*, which states that one role of *waqf* property is development and improvement of society's economy (Syafieq 2014).

Financing through the cash *waqf* has been proposed by some researchers, for instance, Elgara (2004) by integrating wqaf with interest-free loans made with Bank Qard Hassan.

This mechanism aims to assist poor people who have difficulties accessing funds at public financial institutions. In addition, Cizakca (2004) proposed the use of cash *waqf* for entrepreneurial financing with the concept of *mudaraba*. In 2010, Lahsasna undertook a redevelopment project with a *waqf* model, enhancing provision of financial services to micro, small, and medium enterprises through debt and capital financing under *murabaha*, *ijara*, *istisna*, Bai Bithamil Ajil, *mudharabah*, and *musharakah* contracts in Malaysia.

In Indonesia, Tohirin (2010) and Syafieq (2014) stated that the cash *waqf* can be a solution for small, medium, and micro-enterprises dealing with difficulties in accessing bank funding.

METHOD

For this study, researchers used a qualitative method, with a literature review from various sources such as national and international journals, articles, books, and official websites.

Among others, some examples are the *International Journal of Islamic and Middle Eastern Finance and Management*, the *Journal of Islamic Accounting and Business Research*, *Global Business and Management Research: International Journal*, *ZISWAF*. Based on analysis of the literature, researchers then proposed the ICWME-II model for micro-enterprise financing through the cash *waqf*.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:04.

RESULTS AND DISCUSSION

Micro Financing Plan through ICWME-I

This model was proposed by Thaker et al. (2016) for a micro-financing plan through the cash *waqf*, as shown in figure 1. The model aims to be a financing alternative for micro-businesses through the cash *waqf* in Malaysia. In this model, the institution of *waqf* managers is obliged to provide funds for micro-enterprises, then continuously supervise and coach micro-enterprises to maximize their revenue and protect the invested capital. This plan used a contract between a *waqf* institution and a micro-enterprise under *musharakah mutanaqisah*, which is an agreement between the *waqf* and micro-enterprises for business activity or purchase of equipment. Under this contract, assets owned by the financier will be repaid gradually by the micro-enterprise. This agreement is used in financing for machinery, land, and electricity installations, among others, as well as for business financing that includes stores or business construction. Thaker et al. (2016) proposed a model without strict guarantees, interest rates, or strict document requirements.

Cash *Waqf* Model Financing Micro-Enterprises in Indonesia (ICWME-II)

In this model, the Qardhul Hasan concept proposed by ICWME-I is still used by researchers in developing the ICWME-II plan. Qardhul Hasan's mechanism is provision of a loan from a *waqf* institution to micro-enterprises without any guarantees, strict requirements, or any interest rate, meaning the borrower is obliged only to return the loan principal at a predetermined time (Syafieq 2014).

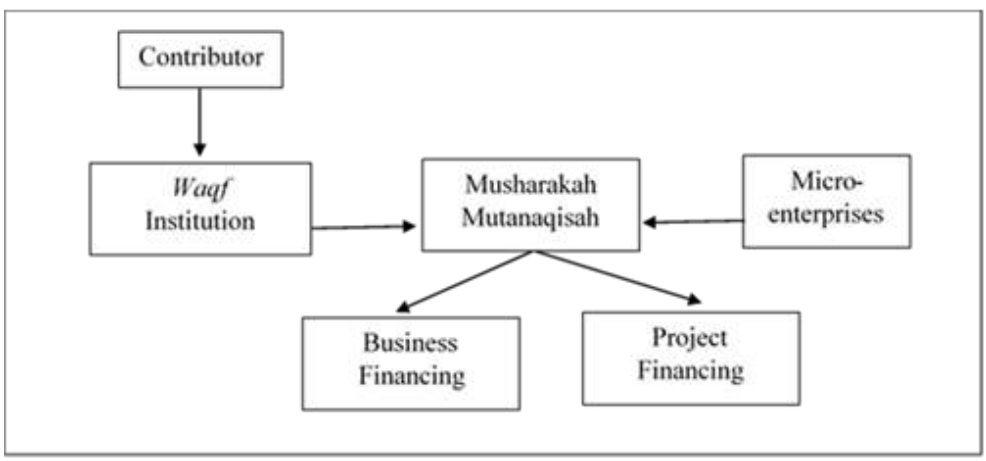


Figure 1. ICWME- 1 Plan.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:04.

This loan can grant capital either for working capital or for equipment purchase (Thaker et al. 2016). *Waqf* institutions are also obliged to provide assistance in management, marketing, and improvement of micro-enterprises' products or services so that these businesses can become better (Syafieq 2014). Masyita (2005) also states that the cash *waqf* can be invested and used in financing micro-business through micro-financing. Provision of financing is also accompanied by business assistance so that micro-enterprises can develop their businesses well. Providing this assistance in management is expected to guide entrepreneurs to meet challenges, so then they can grow profitably.

The proposed model, called ICWME-II, integrates various financing elements into a single model, shown in figure 2. Components begin with the government and culminate in the benefeciaries. The components of the ICWME-II model are:

Government

According to Aziz (2017) one of Indonesian society's strengths of is the waqf. Endowment cash is like a sleeping giant. If it awakes, the cash *waqf* can be a powerful tool for societies in Indonesia. According to the Director of Tabung Wakaf Indonesia (TWI), the potential of *waqf* in Indonesia can reach one third of Moslem society's wealth (Aziz 2017). As the first element, the government helps strengthen *waqf* management through improvement of the quality of human resources management so that *waqf* management is trustworthy and professional.

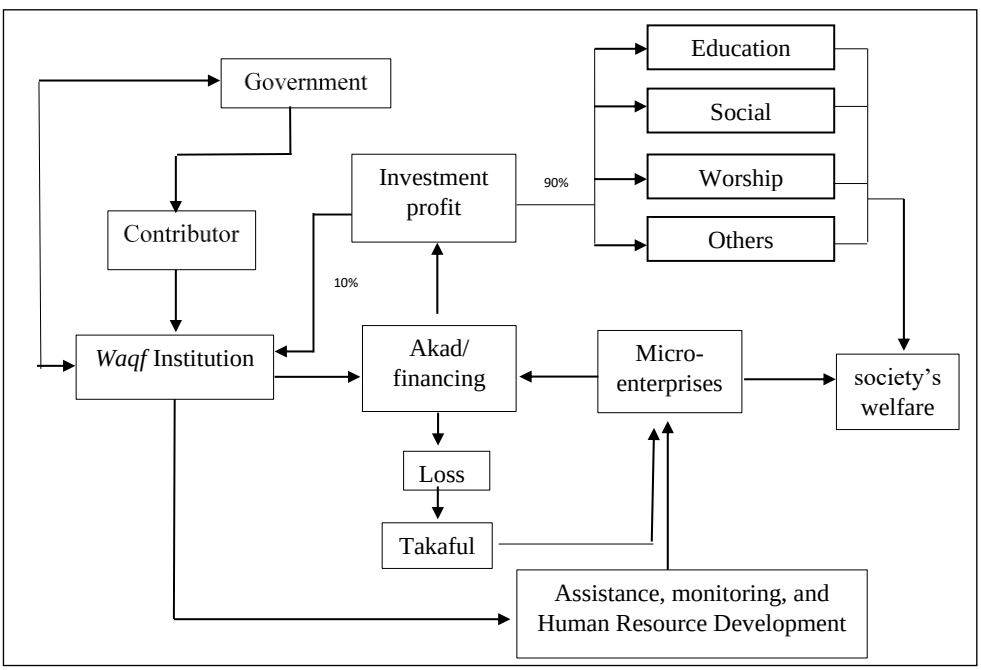


Figure 2. ICWME- II Plan.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:04.

This training activity should be conducted continuously and supervised in its development. In this case, formulation of various programs and periodic evaluation is required because the main issues of cash *waqf* management are lack of information about cash endowments in the community, lack of professional managers (*nadzir*), a weak management system, and varying priorities of each cash *waqf* (Fanani 2011).

Government and various institutions must also cooperate in the cash *waqf*'s socialization into society, thus effectively to increase its acceptance and understanding. Socialization can occur through a variety of social media, such as Facebook, Twitter, or regularly updated official websites, and direct socialization such as seminars and workshops. To the author's knowledge, socialization of the cash *waqf* into Indonesian society is still inadequate. The official website of the National Institution of *Waqf* also provides non-updated data about the *waqf*'s financial statement.

Contributors (Waqif)

Waqif are people who contribute to *waqf*. The requirement to be a *waqif* is to be resourceful, adult, conscious, and not forced (Al-Ansari, tt). Both individual and corporate contributors can give cash to *waqf* institutions (Thaker et al. 2016). Thus, the high number of Moslems in Indonesia can be potential sources of cash *waqf* revenue, so making the society and organizations well aware of the cash *waqf* is crucial. The cash *waqf* can easily be implemented with a small amount of money, but the benefit remains forever.

Waqf Management Institution

Waqf management institutions play a primary role in delivery, assistance, and development of human resources in micro-enterprises. Organizations that become *nadzir* must meet the requirements of the board or legal entity. They are eligible to become *nadzir* if they are citizens of Indonesia, Moslem, adult, trustworthy, able physically and spiritually, and not hindered by legal action. In addition, the organization must be engaged in social, civic, educational, and or Islamic fields, and the body is established in accordance with applicable laws and regulations (Arif 2010).

This institution should always improve its capacity for management and accumulation of the cash *waqf*, so it can manage the *waqf* trust professionally. Improvement comes through participation in various *waqf* management trainings, management of information technology to campaign for the *waqf*, and escalate its management's transparency. In terms of accountability, the National *Waqf* Institution (Badan Wakaf Indonesia) website has posted cash *waqf* reports only through 2011, so, in this case, transparency aspects of collection and management are still lacking. In addition, improvement of human resources is also needed, especially related to mentoring and assisting human resources development for micro-businesses. Having skills in

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:04.

management, marketing, and finances is important for assistance to and evaluation of micro-enterprises.

Akad/Project Financing

Financing contracts to micro-enterprises can be in various forms such as *mudharaba*, *musharakah*, and *murabahah*.

Cash Waqf Plan for Mudharaba

The cash *waqf* can be managed under a *mudharabah* contract, with the profits handed over to *maufuq alaih*, and the principal remains (Ibn Taimiyah, ????). This is allowed by the Malikiyah, Hanafiyah, and Ahmad. The waqf manager acts as a *mudharib* who receives cash from the *waqf* management institution with the principle of profit-sharing according to previous agreement (Ismail and Mohsin 2013). If a loss occurs, the *waqf* institution will bear the losses, and micro-enterprises will lose time and energy. The profit-sharing funds received by *waqf* institutions are channeled, for example, 90% to beneficiaries and 10% to *waqf* management institutions. This type of *waqf* fund can be withdrawn by the *waqf* institution if it is not profitable.

Cash Waqf Plan for Musharakah

The cash *waqf* also can be used for *musharakah* financing (AAOFI: Job 2007). This plan is almost the same as *mudharaba* contracts, but the difference is that the burden *waqf* managers bear is smaller because the capital is borne along with the owners of the capital. Under this plan, *waqf* institutions collect the cash *waqf* from contributors who choose to invest their cash into the *musharakah* contract (Ismail and Mohsin 2013). These funds are then invested into micro-enterprises with *musharakah* and distribute profit shares to beneficiaries.

Cash Waqf Plan for Murabahah

This plan is executed by purchasing assets for micro-enterprises with the cash *waqf* by *waqf* institutions. This asset is then sold to micro-enterprises with a sale price, plus profit. Profit from this contract is channeled to beneficiaries, for example, by proportion (Ismail and Mohsin 2013).

Assistance, Monitoring, and Human Resources Development

Assistance of micro-enterprises is required, especially in business management in, for instance, management; production; marketing; strengths, weaknesses, opportunities, threats (SWOT) analysis for small businesses; and also simple financial reporting so that businesses can run appropriately. Human resource development is not limited to managerial management, but also includes use of information technology, so micro-enterprises can be competetive in the market. E-commerce is one of the best business

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:04.

strategies for micro-businesses because it provides flexibility in production, can deliver to customers faster, can send and receive offers quickly and sparingly, and supports faster transaction processing on a paperless base (Sudaryanto et al. tt). *Waqf* institutions, with government cooperation should improve the capacity, skills, and character of micro-enterprises (Yuli 2015). This is not limited just to organizational aid, but also includeshow to face challenges by having a good character and a good manner. In the global market, this assistance and guidence is really needed by micro-enterprises. The entire process should then be monitored regularly to assess businesses' growth, strength, and weaknessess.

Takaful

This risk guarantee system needs to be emphasized and executed in micro-business financing (Fanani 2011). The *takaful* component can be used to reduce risk arising from client/micro-business. *Takaful* plays a prominent role in overcoming risks and uncertainty of business results. Ahmad (2007) states that *takaful* and profit-equalization reserves can overcome the client's risk. *Takaful* can be used in the financing plan with the cash *waqf*, for instance, when micro-enterprises sustain loss. Then we can use *takaful* to address it, after doing some assessments, as long as it is not the micro-enterprises' fault. Micro-enterprise fault is not covered by *takaful*. In this case, guidance to determine the category of fault is very important.

Profit from Investment

Micro-financing with a profit-sharing system can anticipate economic crises due to fluctuations in interest rates. *Waqf* fund investment into the real sector through financing to micro-enterprises increases the balance between the available cash *waqf* and the real sector needing funds to produce goods (Rosmawati and Supriyatni 2010). According to the *Waqf* Act, *nadzir* or *waqf* management institutions may receive compensation from net proceeds on management and development of *waqf* properties with a maximum of 10%. The remainder is to be distributed to beneficiaries.

Beneficiaries (Mauquf 'Alaih)

This micro-business will be provided financing through the cash *waqf*, which is expected to distribute benefits broadly to the community (Rozalinda 2013). These funds can be used to finance poverty alleviation programs, provide health services for the poor, design educational programs, and develop entrepreneurship (Dodik 2007). In this way, beneficiaries are not only micro-enterprises, but also allocations of return on investment to other beneficiaries, for example, construction of schools or other educational facilities, construction of places of worship, and social activities. This is called the *multiplier effect*.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:04.

As evidenced by these explanations, the cash *waqf* can be a powerful tool in improving social welfare and an alternative source of financing for micro-enterprises in Indonesia.

CONCLUSION

The cash *waqf* has great potential to improve society's welfare, especially improving various sectors' welfare without burdening the government's budget. Implications are not limited to the religious sector, but include other sectors such as health, infrastructure, social, education, and the economy. Developing the cash *waqf* to finance micro-enterprises can also strengthen economic sectors, and while doing so, improves the other sectors' welfare as beneficiaries.

This research has theoretical implications, especially related to enrichment of the literature about potential and various plans of the cash *waqf* as an alternative source of micro-enterprises' financing. This research is also expected to provide insight to government and *waqf* institutions to develop and strengthen the potential of *waqf*, especially cash *waqf*, and encourage public awareness in Indonesia. This study has the limitation of relying on literature studies from various sources. Further research can enrich results by using other instruments such as interviews and observation. Subsequent research can also investigate the effectiveness of cash *waqf* management in a *waqf* management institution, review potential cash *waqf* mechanisms in financing, and investigate the awareness of communities, organizations, institutions, and companies regarding contributions of the cash *waqf*.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

REFERENCES

Ahmad, S. 2014. *Cash waqf for Ziswaf small enterprises empowerment*, Ziswaf, Vol. 1, No. 2.

Ahmed, H. (2007). *Waqf* Based Microfinance: Realizing The Social Role of Islamic Finance. *International Seminar on Integrating Awqaf in the Islamic Financial Sector*, March 6 - 7, Singapore.

Alani, U. A., Algodah, M., Alshwaiyat, Ms. (2016). Role of *Waqf* (Endowment) Funds in Financing Small Projects. *Global Business and Management Research: An International Journal*, Vol. 8, No. 3.

Arif, S. (2010). Cash waqf as Islamic finance redistribution mechanism. *La Riba*, Volume Iv No 1.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:04.

Cizakca, M. (2000). *A History of Philanthropic Foundation*: The Islamic World from the Seventh Century to The Present.

Ganbold, B. (2008). *Improving Access to Finance: International Good Experiences and Lessons for Mongolia*, Institute of Development Economics, Tokyo.

Lahsasna, A. (2010). "The Role of Cash-*Waqf* in Financing Micro and Medium-Sized Enterprises", *Paper Presented at 7th International Conference* – The Tawhidi Epistemology: Zakat and *Waqf* Economy, Bangi, Selangor.

Machmud, Z., Huda, A. (2011). "Smes Access to Finance: An Indonesia Case Study", In Harvie, C., Oum, S. and Narjoko, D. (Eds), *Small and Medium Enterprises (Smes) Access to Finance in Selected East Asian Economies*, Eria Research Project Report 2010 - 2014, Jakarta.

Magda, I., Abdel, M. (2013). "Financing through Cash-*Waqf*: A Revitalization to Finance Different Needs", *International Journal of Islamic and Middle Eastern Finance and Management*, Vol. 6 Issue: 4, Pp.304 - 321, Doi: 10.1108/Imefm-08-2013-0094.

Punyasvatsut, C. (2011). "Smes Access to Finance in Thailand", In Harvie, C., Oum, S. and Narjoko, D. (Eds), *Small and Medium Enterprises (Smes) Access to Finance in Selected East Asian Economies*, Eria Research Project Report 2010 - 2014, Jakarta.

Ragimun, S., Wijayanti, R. R. (tt). *Small Medium Enterprises (SMEs) empowerment strategy to face ASEAN free market*, https://www.kemenkeu.go.id/sites/default/files/strategi%20pemberdayaan%20umkm.pdf.

Rozalinda, (2013). *Waqf roles in Women Economic Empowerment*, https:// www.bwi.go.id/931/2013/05/artikel/peran-wakaf-dalam-pemberdayaan-ekonomi-perempuan-1/.

Thaker, M. A., Mustafa, O. M., Jarita, D., Moha, A. A. (2016). "Developing Cash *Waqf* Model as an Alternative Source of Financing for Micro-enterprises in Malaysia", *Journal of Islamic Accounting and Business Research*, Vol. 7, Issue: 4, Pp.254 - 267, Doi: 10.1108/Jiabr-09-2014-0029.

Thaker, M. A., Duasa, J., Abdullah, M. A. (2016). The Behavioral Intention of Micro-enterprises to Use the Integrated Cash *Waqf* Micro-enterprise Investment (Icwme-I) *Model as a Source of Financing Gadjah Mada International Journal of Business*, vol. 18, No. 2.

Ung, L. and Hay, S. (2011). "Smes Access to Finance in Cambodia", In Harvie, C., Oum, S. and Narjoko, D. (2010). Small and Medium Enterprises (Smes) Access to Finance in Selected East Asian Economies, *Eria Research Project Report*, 2010 - 2014, Jakarta.

Yuli, S. B. C. (2015). Waqf optimalization roles in SMEs empowerment. *Ekonomika-Bisnis*, Vol 6(1): 1 - 16.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:04.

Yulianti, Rahmani, T. (2008). Islamic public finance institution role in society economic empowerment. *Millah Jurnal Studi Agama,* Vol. Viii, No.1 Agustus 2008.

Yulma, N. L., Herianingrum, S. (2016). Cash waqf empowerment role (Case study at Amanah Ummah Surabaya). *Jurnal Ekonomi Syariah Teori Dan Terapan,* Vol. 3 (11).

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:04.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:04.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 23

INDONESIAN IPO FIRMS' INTENDED USE OF PROCEEDS AND POST-ISSUE OPERATING PERFORMANCE

Kaleb Hasudungan and Wardatul Adawiyah*
Department of Management, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This paper examines the effect, from 2008 to 2012, of intended use of proceeds on Indonesian firms' operating performance after their initial public offering (IPO), specifically in two sectors: trade, services, and investment; and infrastructure, utilities, and transportation. We investigated disclosure of use of proceeds in IPO prospectuses, using compositional data and the quantile regression method for estimations. Findings show that high-performing firms would benefit from intended use of proceeds for fixed asset investment and working capital. Meanwhile, investment in shares of stock, including acquisitions, can explain declines in companies' operating performance. Moreover, we found no statistically significant effect of both debt repayment and secondary shares on firms' operating performance after IPO.

Keywords: compositional data, firm operating performance, initial public offering, intended use of proceeds, quantile regression

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

* Corresponding Author's E-mail: wardah_adawiyah@yahoo.com.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:10.

In: Recent Studies in Economics of Development … ISBN: 978-1-53617-381-9
Editors: B. Yulianita Gitaharie, Y. Abbas et al. © 2020 Nova Science Publishers, Inc.

Chapter 23

INDONESIAN IPO FIRMS' INTENDED USE OF PROCEEDS AND POST-ISSUE OPERATING PERFORMANCE

Kaleb Hasudungan and Wardatul Adawiyah*
Department of Management, Universitas Indonesia, Depok, Indonesia

ABSTRACT

This paper examines the effect, from 2008 to 2012, of intended use of proceeds on Indonesian firms' operating performance after their initial public offering (IPO), specifically in two sectors: trade, services, and investment; and infrastructure, utilities, and transportation. We investigated disclosure of use of proceeds in IPO prospectuses, using compositional data and the quantile regression method for estimations. Findings show that high-performing firms would benefit from intended use of proceeds for fixed asset investment and working capital. Meanwhile, investment in shares of stock, including acquisitions, can explain declines in companies' operating performance. Moreover, we found no statistically significant effect of both debt repayment and secondary shares on firms' operating performance after IPO.

Keywords: compositional data, firm operating performance, initial public offering, intended use of proceeds, quantile regression

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

* Corresponding Author's E-mail: wardah_adawiyah@yahoo.com.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:18.

INTRODUCTION

Indonesia is becoming one of the most powerful economies in the world, with a 2.5% contribution to the world's estimated economic growth from 2017 to 2019, or the fifth largest in the world (World Bank, 2017; International Monetary Fund, 2016). Indonesia's gross domestic product accelerated by 5.58% during the 2006–2016 decade, outpacing average ASEAN (5.44%), G20 (2.91%), and world (2.67%) economies. The development of a capital market is believed to be the catalyst for Indonesian economic growth. In 2017, the Indonesia Stock Exchange (IDX) welcomed 37 new listings, exceeding the target of 35, with an average 2.2 times oversubscription. IDX president director Tito Sulistio is confident that Indonesian market capitalization will reach Indonesian rupiah (IDR) 10.000 trillion in 2020, increasing approximately 64% from 2017, along with growing numbers of firms listed in the IDX.

The Indonesian capital market has experienced improving liquidity, with increasing numbers of investors and average daily trading frequency. This is supported by a consumption pattern shifting to investment and IDX's efforts to increase students' literacy all over Indonesia. Given a superior return index (193%) from 2006 to 2016 compared to major world stock exchanges and a tax-free policy for capital gain, foreign investors play a vital role in improving capital market liquidity. Through POJK No. 40/ 2017, the banking sector is also expected to support the capital market's liquidity.

Recently, in PP No. 56/2015, the Indonesian government established a new tax incentive amounting to a 5% deduction of corporate income tax for firms with a minimum 40% public ownership. These supportive climates enable Indonesian firms to take advantage of a capital market as their source of financing by issuing new stock in an initial public offering (IPO). Additionally, the fact that firms are not facing a direct obligation to repay the proceeds, IPO is a very attractive option.

However, Indonesian firms' positive feelings about conducting an IPO are challenged by prior research that demonstrated firms' decreased post-issue operating performance in the United States (Jain & Kini, 1994; Amor & Kooli, 2017). Further supportive evidence has also been found in other capital markets, such as Australia (Balatbat et al., 2004), China (Wang, 2005), Italy (Carpenter & Rondi, 2006), Japan (Cai & Wei, 1997), and Indonesia (Andriansyah & Messinis, 2016). In fact, previous studies discovered that intended use of proceeds can explain declining post-issue operating performance (Andriansyah & Messinis, 2016). Using Indonesian firms' characteristics, Andriansyah and Messinis (2016) classified five categories of intended use of proceeds: (1) fixed asset investment, (2) working capital financing, (3) shares of stock investment, (4) debt repayment, and (5) secondary shares. This classification was adapted according to Indonesian regulations, specifically POJK No. 8/ 2017. But additionally, because Wyatt (2014) found that all intended uses of proceeds show better effect on firms' operating performance with time, this paper seeks the effect of intended use of proceeds in a longer

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:18.

period after IPO. And because IPO is clearly a topic of concern for Indonesians these days, this research is conducted to broaden people's understanding about potential benefits and drawbacks in operating performance when buying IPO firms' stock, for either short- or longer-term investment.

To provide better understanding of the current situation, this study focused on 36 firms that became public, from 2008 to 2012, especially in two sectors: (1) trade, services, and investment and (2) infrastructure, utilities, and transportation. These two sectors were chosen because they had the highest numbers of new listings during the 2008–2012 period. Not only that, these sectors were the second and third largest by market capitalization for non-finance sectors in 2017.

This research report develops as follows. Section 2 reviews the literature that underlies this study and shows hypothesis development. Section 3 describes the data sample and for addressing intended use of proceeds, specifies the methodology, which is compositional data in quantile regression. Section 4 provides descriptive statistics, along with discussion of regression results. Concluding comments and study limitations are in Section 5.

ANALYTICAL FRAMEWORK

In general, three theories can explain declining post-issue performance. First, agency theory shows that segregation of cash flow rights and control rights leads to agency cost. This cost results from managers' diminishing incentives to work and their increasing perquisites (Jensen & Meckling, 1976). Second, windows of opportunity theory shows that firms tend to issue new stock during an overvalued condition (Loughran & Ritter, 1997). Third is window-dressing behavior theory, which explains that firms are likely to overstate their pre-issue performance (Teoh et al., 1998).

Prior studies have documented the effect of intended use of proceeds on firms' operating performance after IPO. Geddes (2003) identified two main reasons firms conduct an IPO: first, increasing firms' capital through primary offerings. Firms benefit from using this equity financing because they are not obligated to either repayment or payment on a regular basis, compared to bank loans or other debt financing. According to Andriansyah and Messinis (2016), firms can use these capital injections for fixed asset investment, working capital financing, investment in shares of stock, and debt repayment. Second is cashing out for initial shareholders through secondary offerings. This means that initial shareholders—entrepreneurs, parent companies, professional investors (private equity capital), or governments—want to sell all or part of their ownership of firms.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:18.

Intended Use of Proceeds for Fixed Asset Investment and Operating Performance

Empirical evidence has revealed the effect of intended use of proceeds for fixed asset investment on firms' operating performance. Fixed asset investment results in better operating performance after IPO (Andriansyah & Messinis, 2016). In addition, Wyatt (2014) documented that firms' operating performance was significantly affected by intended use of proceeds for fixed asset investment. Thus, prior research helps develop the first hypothesis:

Hypothesis 1

Intended use of proceeds for fixed asset investment influences firms' operating performance after IPO.

Intended Use of Proceeds for Working Capital Financing and Operating Performance

Amor and Kooli (2017) revealed that intended use of proceeds for marketing and sales promotions positively influences firms' operating performance. Moreover, a study from Andriansyah and Messinis (2016) found that intended use of proceeds for working capital financing is associated with uncertainty of future cash flows and affects firms' post-issue operating performance. Based on these prior studies, we developed the second hypothesis:

Hypothesis 2

Intended use of proceeds for working capital financing influences firms' operating performance after IPO.

Intended Use of Proceeds for Investment in Shares of Stock and Operating Performance

Intended use of proceeds for stock investment resulted in firms' better performance after IPO (Andriansyah & Messinis, 2016). Plans of acquisitions through investment in shares also proved to affect firms' operating performance positively (Wyatt, 2014). Thus, this study aims to test the third hypothesis:

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:18.

Hypothesis 3

Intended use of proceeds for investment in shares of stock influences firms' operating performance after IPO.

Intended Use of Proceeds for Debt Repayment and Operating Performance

Previous research found that use of proceeds for debt repayment negatively affects firms' operating performance (Amor & Kooli, 2017). Autore et al. (2009) also recorded that firms with intended use of proceeds for recapitalization experience lower operating performance than firms with investment purposes. This study aims to test the fourth hypothesis using the context of Indonesian IPO firms.

Hypothesis 4

Intended use of proceeds for debt repayment influences firms' operating performance after IPO.

Intended Use of Proceeds for Secondary Shares and Operating Performance

Wyatt (2014) found that intended use of IPO proceeds for payment of secondary shares to initial shareholders positively and significantly impacted firms' operating performance. Contrarily, Andriansyah and Messinis (2016) documented a descent in operating performance as a result of intended use of secondary shares. These previous studies lead to development of the fifth hypothesis:

Hypothesis 5

Intended use of proceeds for secondary shares influences firms' operating performance after IPO.

METHOD

Sample Selection

Based on non-probability sampling, especially purposive sampling, this research used 36 Indonesian IPO firms during 2008–2012 as research samples. The study focused on two sectors in the Jakarta Stock Industrial Classification (JASICA) or, as used by IDX, Sector 9 including trade, services, and investment, and also Sector 7 including

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:18.

infrastructure, utilities, and transportation. We excluded firms that experienced delisting and changed their main operational business activities until 2017.

Data related to intended use of proceeds and firms' characteristics were gathered manually from firms' prospectus data, obtained either from their official websites or from The Indonesia Capital Market Institute (TICMI) database. Data on firms' operating performance until four years after IPO were collected through Thompson Reuters Datastream Professional.

Empirical Models

To analyze the effect of intended use of proceeds on post-issue performance, we adopted regression models specified by Andriansyah and Messinis (2016), as follow:

$$\begin{aligned} Performance_i = {} & \beta_0 + \beta_1 FIXEDASSET_i + \beta_2 WORKINGCAPITAL_i + \\ & \beta_3 SHARESOFSTOCK_i + \beta_4 DEBTREPAYMENT_i + \\ & \beta_5 SECONDARYSHARES_i + Control\ Variables + \varepsilon_i \end{aligned} \quad (1)$$

The subscribed i identifies firms. Five independent variables show intended use of proceeds in firms' IPO prospectuses in terms of proportion to total proceeds. FIXEDASSET and WORKINGCAPITAL are each measured by intended use of proceeds for fixed asset investment and working capital financing divided by total proceeds. SHARESOFSTOCK is measured by dividing firms' funds allocated for investment in stock, including to subsidiaries and other firms (acquisitions). DEBTREPAYMENT and SECONDARYSHARES are firms' allocations to repay debt and pay initial shareholders who have sold its shares. Given that independent variables are compositional data, Fry (2011) suggested a log-ratio transformation (explained below under 3.3 Compositional Data).

The dependent variable is five measures of firms' operating performance, especially the cumulative change of firms' industry-adjusted operating performance over a period of 1 year prior to IPO until 2 years after IPO (t-1 until t+2) and a period of 1 year prior to IPO until 4 years after IPO (t-1 until t+4). The industry-adjusted metric is attained by deducting the median performance of related industry from each firm's operating performance (Andriansyah & Messinis, 2016; Amor & Kooli, 2017). This adjustment is more robust to outliers, compared to mean adjustments (Jain & Kini, 1994).

This paper uses PROCEEDS/ASSETS, SIZE, LEVERAGE, AGE, and INITIALCOND as control variables because they have significant effect on firms' operational performance (Andriansyah & Messinis, 2016; Kuncová et al., 2016; Mikkelson et al., 1997; Berger & Patti, 2006; Holthausen & Larcker, 1996; Abatecola et al., 2012; Kim et al., 2004). PROCEEDS/ASSETS are measured by total IPO proceeds

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:18.

divided by the firm's total assets. SIZE is the value of total assets' natural logarithm. The ratio of total liability to total equity is our proxy for LEVERAGE. AGE indicates the firms' operational longevity from establishment to IPO. INITIALCOND is measured according to firms' condition when first conducting an IPO through cumulative changes in operating performance. All control variables are calculated one year before IPO, except for PROCEEDS/ASSETS, which are calculated in the year when IPO happened.

Compositional Data

Intended use of proceeds is compositional data since this type of data provide information about the relative size of proceeds allocated for a particular purpose, that is, proceeds do not have an absolute or real value (Aitchison, 2013). In general, characteristics of compositional data are ignored by researchers, but Fry (2011) explained the common approach to handling compositional data in economics: log-ratio transformation from simplex units into real Euclidian space. According to Aitchison (1986), the three log-ratio transformation approaches are: additive log-ratio (alr), centered log-ratio (clr), and isometric log-ratio (ilr).

The main problem in performing log-ratio transformation is the assumption of x_i>0, where x_i is the intended use of proceeds for a particular purpose, which actually allows observation, with a value of 0. In this study, the author uses the zero-replacement method as the most appropriate for microeconomic data, according to Fry et al. (2000). Based on Andriansyah and Messinis (2016), Fry et al. (2000), and Aitchison (1986), the zero-replacement method in detail is shown as follows:

$$z_0 = \frac{\frac{I?(C+1)(D-C)}{D^2}}{median\ of\ x_i} \tag{2}$$

$$z_{N0} = x_i\left\{1 - \frac{I?C(C+1)}{D^2}\right\} \tag{3}$$

The subscribed i identifies firms, z_0 is the replacement value of zero, and z_N0 is the replacement value of non-zero. D is the total observations, C is the number of observations with essential zeros, and D-C is the number of observations with non-zero components. δ is the maximum of rounding-off errors, measured by δ= ⟦10⟧ ^(-D) (Martin-Fernandez et al., 2011).

The next step is to perform the isometric log-ratio transformation approach because of its simplicity of parameter estimation interpretation (Hron et al., 2012). Andriansyah and Messinis adopted the isometric log-ratio transformation through nine stages as follow:

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:18.

1) Apply the zero-replacement method above; the resulting x_i=0 is replaced by z_0, and x_i>0 is replaced by z_N0;
2) Select an arbitrary order of x=(x_1,…,x_D)^', with x_D as a base;
3) Perform the ilr transformation for x, as below. Then, maintain y_1as the proxy of x_1

$$y_{ilr} = (y_1, \dots, y_{D-1})' = \left(\sqrt{\frac{D-1}{D}} ln \frac{x_1}{\sqrt[D-1]{\prod_{k=2}^{D} x_i}}, \sqrt{\frac{D-j}{D-j+1}} ln \frac{x_1}{\sqrt[D-1]{\prod_{k=j+1}^{D} x_i}} \dots, \sqrt{\frac{1}{2}} ln \frac{x_{D-1}}{x_D} \right)' \quad for\ j = 2, \dots, D-2 \qquad (4)$$

1) Run the regression consisting of variables transformed by ilr and other independent variables on dependent variables.
2) Maintain estimates and the standard error only for y_1 and ignore the other transformed variables (y_2,…,y_(D-1))^'.
3) Repeat step (2) by rearranging the order of x=(x_2,x_1,…,x_D)^'
4) Repeat step (3) to step (5); maintain y_2 as the proxy of x_2
5) Repeat steps (6) and (7) until all variables are placed in the first order of x, and all the estimates and standard errors for all transformed variables 〖y=(y_1,y_2,…,y_D)〗^' are obtained.
6) Maintain estimates and standard errors for intercept and other independent variables of any regression at step (4). All estimates and standard errors for these variables are the same for each regression result, as shown in Hron et al. (2012)

According to Hron et al. (2012), step (8) needs to be done because estimates and standard errors for variables in the first order of x can explain all relationships between variables in the first order of x with variables in the next order. But estimation and standard errors for the second order of x can explain the relationship only between the second variable x and the next variables; it does not contain information about the relationship between the second variable x and the first variable x. Therefore, to obtain reliable, accurate estimation and standard errors, all variables transformed through ilr must be at the first order in x.

Estimation Method

This study uses the quantile regression method, developed by Koenker and Bassett (1978), to examine changes of relationship between independent variables and dependent variables, depending on the value of dependent variables (Logan & Petscher, 2013). This

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:18.

method offers a more useful and robust analysis than ordinary least squares, due to its ability to handle dependent data with asymmetric distributions or outliers.

Based on Hao and Naiman (2007) and given 0<p<1, the quantile regression model is specified as follows:

$$y_i = x_i \beta^{(p)} + \varepsilon_i^{(p)} \tag{5}$$

where y_i is the dependent variable, x_i is the k x 1 vector of independent variables, β^((p))is the k x 1 vector of the parameter associated with the unknown p^th, and 〖ε_i〗^((p)) is the error term of the unknown p^th.

Estimation of the value of β^((p))on p^th can be done by minimizing the average weighted distance from y_i to a given y_i as follows:

$$\beta^{(p)} = \operatorname{argmin} \left(p \sum_{y_i \geq x_i' \beta^{(p)}} \left| y_i - x_i' \beta^{(p)} \right| + (1-p) \sum_{y_i \leq x_i' \beta^{(p)}} \left| y_i - x_i' \beta^{(p)} \right| \right) \tag{6}$$

This research ran some tests to account for multicollinearity (Hung et al., 2010; O'Brien, 2007), heteroskedasticity (Machado & Santos-Silva, 2000), and autocorrelation error (Huo et al., 2013). Based on the centered Variance Inflation Factor test, the multicollinearity problem was undetectable from the data. Relying on the Machado-Santos Silva (MSS) test, in general, we could not detect the heteroskedasticity problem. We ran the MSS test 150 times, containing five dependent variables and five ilr transformed independent variables, three quantiles (Q25, Q50, Q75), within two periods of time (t-1 until t+2 and t-1 until t+4). At the 95% confidence level, 94% of test results showed no heteroskedasticity problem. Finally, we employed the Breusch Godfrey (BG) test, and, generally, we could not conclude an autocorrelation problem in our model. We ran the BG test 50 times, containing five dependent variables and five ilr transformed independent variables, within two time periods (t-1 until t+2 and t-1 until t+4). At the 5% significance level, 76% of test results showed no autocorrelation problem. Therefore, we used the standard non-parametric method.

For estimation of standard error values in non-parametric quantile regression, the kernel and bandwidth to estimate density when residuals are independent and are identically distributed must be determined. In this study, we used the kernel function of Epanechinikov and Chamberlain bandwidth because of its simplicity compared to an alternative bandwidth (Andriansyah & Messinis, 2016).

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:18.

RESULTS AND DISCUSSION

Descriptive Statistics of IPO Firms

Table 1 provides descriptive statistics for all intended uses of proceeds by year in Panel A and by industry in Panel B. Consistent with prior evidence (Andriansyah & Messinis, 2016), proceeds of IPO were mainly allocated for fixed asset investment and working capital financing, amounting respectively to 37.76% and 28.86%, on average. However, there was a slight difference among firms in different industries. Firms in Sector 9 tended to use proceeds for working capital financing, while firms in Sector 7 preferred fixed asset investment.

Table 1. Intended use of proceeds of IPO firms

	Fixed Asset		Working Capital		Shares of Stock		Debt Repayment		Secondary Shares	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Panel A: By Year										
2008	37.60	45.00	27.78	25.00	22.40	25.00	10.00	0.00	2.22	0.00
2009	45.00	45.00	35.00	35.00	0.00	0.00	20.00	20.00	0.00	0.00
2010	27.32	12.00	24.21	11.00	24.73	16.70	11.06	0.00	12.68	0.00
2011	32.44	21.30	9.38	11.98	27.58	0.00	23.59	10.00	7.02	0.00
2012	46.44	58.00	22.94	15.00	11.62	0.00	14.56	18.00	4.44	0.00
Average	37.76		23.86		17.26		15.84		5.27	
Panel B: By Industry										
Sector 9	21.43	11.00	28.76	22.50	24.68	0.00	20.63	9.00	4.50	0.00
Sector 7	54.38	60.50	10.07	10.50	15.55	0.00	10.47	0.00	9.53	0.00

Notes: Secondary shares, debt repayment, shares of stock, working capital and fixed asset are measured in percentage shares of total IPO proceeds. Sector 9 represents the trade, services, and investment sector. Sector 7 represents the infrastructure, utilities, and transportation sector.

Source: Author, 2018.

Table 2. Firms' characteristics and IPO offering measures

	N	Mean	Q1	Median	Q3
Proceeds (IDR Billion)	36	633.012	107.063	216.429	544.979
Assets (IDR Billion)	36	2259.836	479.688	1154.939	2151.882
Leverage Ratio	36	0.480	0.741	1.405	2.813
Age (Years)	36	14.139	6.000	10.000	18.500
Initial Condition	36	-0.023	-0.061	-0.012	0.024

Source: Author, 2018.

Table 2 reports firms' characteristics, including the sample's offering measures when approaching the IPO date. An enormous difference among mean and median of total proceeds, total assets, and leverage ratio indicated great variation in firms' characteristics. Moreover, on average, firms went public 14 years after their establishment date. Unlike the European findings of Jenkinson and Ljungqvist (2001) who showed that firms do IPO

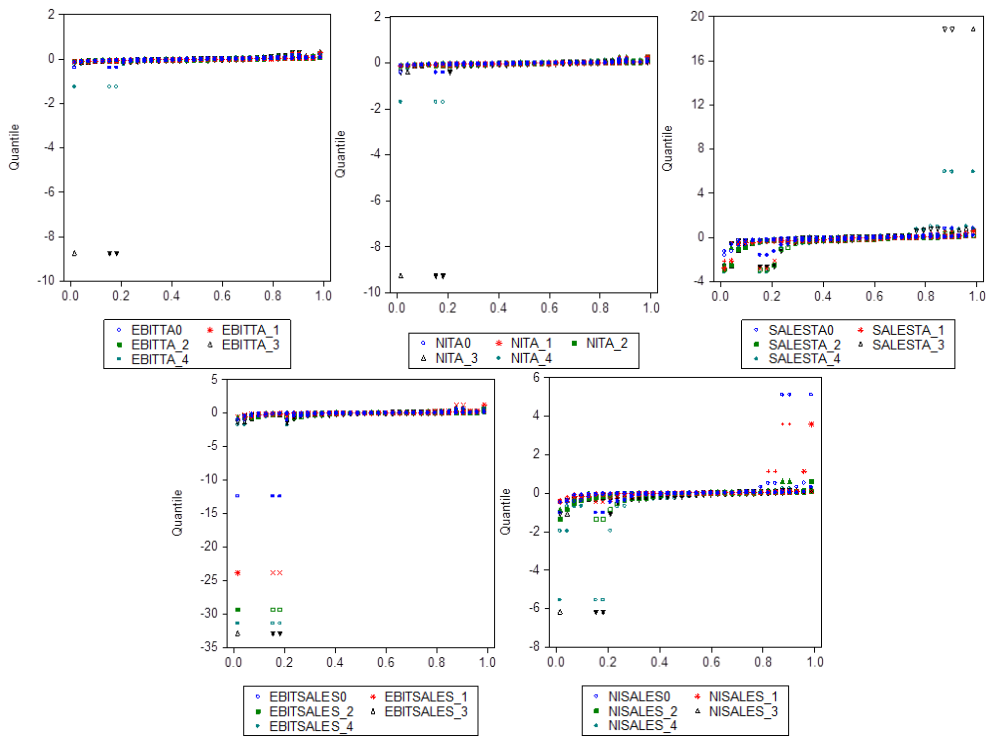
Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:18.

after 50 years of operations, this research found a new phenomenon of younger firms going public in Indonesia. With a negative initial condition, in terms of mean (−0.023) and median (−0.012), we can see that, in general, firms cannot retain their operating performance after IPO.

IPO Firms' Pre and Post-Issue Operating Performance

Table 3 reports firms' operating performance under five different measures, including EBIT/TA (Panel A), NI/TA (Panel B), Sales/TA (Panel C), EBIT/Sales (Panel D), and NI/Sales (Panel E) in both unadjusted and industry-adjusted metrics. In general, we see that firms cannot maintain their pre-issue level of operating performance, resulting in a decline after IPO. This phenomenon is associated with windows of opportunity theory (Loughran & Ritter, 1997) and window-dressing behavior theory (Teoh et al., 1998). Due to a similar pattern of both unadjusted and industry-adjusted metrics, we focused on industry-adjusted metrics as done by Andriansyah and Messinis (2016).



Notes: Change in firms' industry-adjusted operating performance using one year before IPO (t-1) as a base year.

Source: Author, 2018.

Figure 1. Quantile plots of change in firms' industry-adjusted operating performance.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:18.

Table 3. Operating performance of the firms before and after IPO year

	N	Unadjusted		Industry-adjusted	
		Mean	Median	Mean	Median
Panel A: EBIT/TA					
t-2	36	0.091	0.091	0.002	0.000
t-1	36	0.110	0.102	0.003	-0.010
t	36	0.086	0.087	-0.020	-0.012
t+1	36	0.097	0.089	-0.008	-0.020
t+2	36	0.082	0.074	-0.007	-0.016
t+3	36	-0.179	0.077	-0.250	-0.034
t+4	36	0.021	0.069	-0.044	-0.010
Panel B: NI/TA					
t-2	36	0.043	0.048	-0.046	-0.031
t-1	36	0.064	0.059	-0.044	-0.046
t	36	0.044	0.046	-0.062	-0.044
t+1	36	0.053	0.050	-0.052	-0.056
t+2	36	0.039	0.035	-0.049	-0.055
t+3	36	-0.257	0.024	-0.328	-0.073
t+4	36	-0.038	0.026	-0.103	-0.059
Panel C: Sales/TA					
t-2	36	1.262	0.589	1.173	0.494
t-1	36	1.157	0.539	1.050	0.416
t	36	1.016	0.453	0.910	0.342
t+1	36	0.940	0.466	0.834	0.336
t+2	36	0.868	0.436	0.780	0.330
t+3	36	1.434	0.415	1.362	0.338
t+4	36	1.070	0.348	1.005	0.296
Panel D: EBIT/Sales					
t-2	36	0.153	0.101	0.065	0.012
t-1	36	1.049	0.132	0.942	0.040
t	36	0.660	0.128	0.554	0.028
t+1	36	0.406	0.192	0.301	0.031
t+2	36	0.187	0.133	0.099	0.029
t+3	36	0.027	0.108	-0.044	0.040
t+4	36	0.023	0.045	-0.042	0.022
Panel E: NI/Sales					
t-2	36	0.043	0.039	-0.045	-0.028
t-1	36	0.144	0.050	0.036	-0.027
t	36	0.244	0.049	0.138	-0.029
t+1	36	0.253	0.057	0.148	-0.017
t+2	36	0.047	0.040	-0.041	-0.011
t+3	36	-0.154	0.022	-0.225	-0.048
t+4	36	-0.196	0.020	-0.261	-0.040

Notes: Unadjusted and Industry-adjusted performance represent, respectively, firms' operating performance before adjustment and after industry median adjustment; t represents the IPO year.

Source: Author, 2018.

Figure 1 illustrates distributions of firms' operating performance through quantile plots and indicates some outliers in our data. To tackle this problem, we adopted the econometric method, which is Quantile Regression, from prior research by Andriansyah and Messinis (2016).

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:18.

Intended Use of Proceeds and Post-Issue Operating Performance

Table 4. Quantile regression results for period t-1 until t+2 after IPO

	EBIT/TA			NI/TA			SALES/TA		
	Q25	Q50	Q75	Q25	Q50	Q75	Q25	Q50	Q75
Panel A: Independent Variable									
FIXEDASSET	-0.010*	-0.008*	-0.007**	0.001	0.004	0.004	-0.013	0.062**	0.019
	(0.005)	(0.004)	(0.003)	(0.009)	(0.004)	(0.005)	(0.062)	(0.023)	(0.026)
WORKINGCAPITAL	0.008	0.000	0.001	-0.003	-0.008*	-0.004	-0.039	0.002	-0.035
	(0.017)	(0.008)	(0.006)	(0.013)	(0.004)	(0.005)	(0.054)	(0.030)	(0.045)
SHARESOFSTOCK	-0.002	-0.003	0.001	-0.004	0.002	-0.002	0.086	0.014	0.011
	(0.006)	(0.007)	(0.007)	(0.008)	(0.008)	(0.008)	(0.066)	(0.016)	(0.014)
DEBTREPAYMENT	-0.004	-0.004	-0.005	0.000	0.001	0.002	-0.056	0.004	0.008
	(0.004)	(0.004)	(0.006)	(0.002)	(0.003)	(0.005)	(0.045)	(0.015)	(0.013)
SECONDARY-SHARES	0.001	0.001	-0.003	-0.002	-0.001	-0.004	0.016	0.004	-0.009
	(0.003)	(0.003)	(0.004)	(0.004)	(0.003)	(0.003)	(0.041)	(0.012)	(0.013)
Observation	36	36	36	36	36	36	36	36	36
Pseudo R-Squared	0,249 - 0,278	0,239 - 0,284	0,186 - 0,220	0,205 - 0,226	0,142 - 0,164	0,164 - 0,196	0,094 - 0,111	0,085 - 0,099	0,110 - 0,139
Panel B: Control Variable and Constant									
PROCEEDSASSET	Negative *	Negative ***	Negative *	Negative **	Negative	Negative **	Positive	Positive	Negative
SIZE	Negative	Negative	Positive	Negative	Positive	Positive	Negative	Positive	Positive
LEVERAGE	Positive	Positive	Positive	Negative	Positive	Positive *	Negative	Positive	Positive
AGE	Positive	Positive	Positive	Positive	Positive	Positive	Positive	Negative	Negative
INITIALCOND	Negative *	Negative	Negative	Negative	Negative	Positive	Negative	Negative	Positive
Constant	Positive	Positive	Negative	Positive	Negative	Negative	Positive	Negative	Positive

Notes: The dependent variable is the cumulative change of firms' industry-adjusted operating performance. The model estimation uses the Epanechinikov kernel function and Chamberlain's bandwidth. Significant variables at levels of significance of 1%, 5%, and 10% (two-sided) are respectively expressed by ***, **, and *. Numbers in brackets are standard errors.

Source: Author, 2018.

Results for 75 regressions in the first period, which is one year before IPO (t-1) until two years after IPO (t+2), are shown in Tables 4 and 5. Adopting the approach used by Carrascal et al. (2016), we concluded that the estimation was reliable because there were more regressions with Pseudo-R2 more than 25%, compared to regressions with Pseudo-R2 less than 5%.

The coefficient for fixed asset investment was negative and significant in EBIT/TA, EBIT/Sales, and NI/Sales measures, especially for low- and medium-performing firms. This result supports Wyatt (2014), who found that intended use of proceeds for capital expenditure significantly decreased operating performance. Having total assets growing faster than sales, indicating that firms tend to increase their production capacity and surpassing demand after IPO, results in decreased post-issue operating performance. Conversely, this negative effect is found even more insignificant for high-performing firms, supporting Autore et al. (2009) and Andriansyah and Messinis (2016). Since high-

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:18.

performing firms can do better planning using more relevant assumptions, they have already adjusted post-issue uncertainty demand in their production capacity planning and reduced the mismatch (Mankins & Steele, 2005).

Table 5. Quantile regression results for period t-1 until t+2 after IPO

	EBIT/SALES			NI/SALES		
	Q25	Q50	Q75	Q25	Q50	Q75
Panel A: Independent Variable						
FIXEDASSET	0.174***	-0.131***	-0.106	-0.027*	-0.012	-0.005
	(0.039)	(0.047)	(0.096)	(0.016)	(0.009)	(0.010)
WORKINGCAPITAL	0.043	0.062	0.118**	0.010	0.000	0.005
	(0.083)	(0.061)	(0.054)	(0.034)	(0.011)	(0.008)
SHARESOFSTOCK	-0.099	-0.130**	-0.094**	-0.026	-0.010	-0.008
	(0.096)	(0.063)	(0.044)	(0.035)	(0.009)	(0.038)
DEBTREPAYMENT	-0.025	-0.014	-0.053	-0.009	-0.002	-0.021
	(0.042)	(0.044)	(0.044)	(0.012)	(0.008)	(0.071)
SECONDARY-SHARES	0.024	0.016	0.016	-0.004	0.000	-0.005
	(0.053)	(0.046)	(0.036)	(0.018)	(0.005)	(0.005)
Observation	36	36	36	36	36	36
Pseudo R-Squared	0,698 - 0,739	0,484 - 0535	0,299 - 0,333	0,406 - 0,439	0,283 - 0,302	0,190 - 0,252
Panel B: Control Variable and Constant						
PROCEEDSASSET	Positive	Positive	Negative	Positive	Positive	Positive
SIZE	Negative ***	Negative ***	Negative *	Negative	Negative	Negative
LEVERAGE	Positive ***	Positive ***	Positive ***	Positive ***	Positive ***	Positive ***
AGE	Positive	Positive	Negative	Positive	Positive	Positive
INITIALCOND	Negative *	Negative *	Negative	Negative	Negative	Negative
Constant	Positive ***	Positive ***	Positive *	Positive	Positive	Positive

Notes: The accumulative change of firms' industry-adjusted operating performance is proxied for dependent variable. The model estimation uses the Epanechinikov kernel function and Chamberlain's bandwidth. The significant variables at levels of significance of 1%, 5%, and 10% (two-sided) are respectively expressed by ***, **, and *. Numbers in brackets are standard errors.

Source: Author, 2018.

Results for working capital financing were found negatively significant, affecting operating performance for medium-performing firms. An explanation for this negative relation is that working capital financing is classified as a vague intention by Wyatt (2014) and is associated with uncertainty of future cash flows, resulting in decreased post-issue operating performance. Meanwhile, there was a significant positive effect between working capital financing and operating performance for high-performing firms. This relationship is supported by previous studies by Deloof (2003) that high-performing firms can enjoy an increase in sales due to facility of account receivables and discounts for early payment, as the level of working capital rises.

Regarding intended use of proceeds for stock investment, the regression coefficient was statistically negative for both medium- and high-performing firms. This result

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:18.

confirms Wyatt (2014) and Antonios et al. (2005), who found a negative effect of acquisitions on firms' operating performance. Harding et al. (2013) detected a tendency of high-performing firms to acquire other firms. Thus, firms with higher operating performance can experience significantly negative post-issue operating performance because of stock investment, including acquisitions.

Table 6. Quantile regression results for period t-1 until t+4 after IPO

	EBIT/TA			NI/TA			SALES/TA		
	Q25	Q50	Q75	Q25	Q50	Q75	Q25	Q50	Q75
Panel A: Independent Variable									
FIXEDASSET	-0.011	-0.007	-0.001	-0.009*	0.000	0.003	-0.011	0.057	0.019
	(0.007)	(0.009)	(0.008)	(0.005)	(0.004)	(0.006)	(0.064)	(0.038)	(0.034)
WORKINGCAPITAL	0.000	0.007	0.017*	-0.005	-0.001	0.004	-0.019	0.031	-0.012
	(0.005)	(0.008)	(0.009)	(0.003)	(0.005)	(0.005)	(0.070)	(0.040)	(0.064)
SHARESOFSTOCK	0.005	-0.004	-0.010	0.003	-0.004	-0.010**	0.065	0.003	-0.003
	(0.010)	(0.007)	(0.008)	(0.007)	(0.012)	(0.005)	(0.054)	(0.040)	(0.055)
DEBTREPAYMENT	-0.004	-0.006	-0.006	-0.005	-0.004	-0.004	-0.060	0.001	-0.053
	(0.006)	(0.006)	(0.006)	(0.003)	(0.003)	(0.005)	(0.035)	(0.026)	(0.046)
SECONDARY-SHARES	-0.002	-0.002	0.000	-0.001	-0.002	-0.005	0.015	-0.005	-0.005
	(0.008)	(0.005)	(0.007)	(0.004)	(0.003)	(0.005)	(0.032)	(0.023)	(0.020)
Observation	36	36	36	36	36	36	36	36	36
Pseudo R-Squared	0,058 - 0,072	0,068 - 0,096	0,159 - 0,188	0,048 - 0,063	0,051 - 0,070	0,140 - 0,194	0,126 - 0,140	0,053 - 0,067	0,066 - 0,085
Panel B: Control Variable and Constant									
PROCEEDSASSET	Positive	Negative	Negative	Positive	Negative	Negative	Positive	Negative	Negative
SIZE	Positive	Positive	Positive	Positive	Positive	Positive	Negative	Positive	Negative
LEVERAGE	Positive	Positive	Positive	Positive	Positive *	Positive *	Negative	Positive	Positive
AGE	Positive	Positive	Negative	Positive	Negative	Negative	Positive	Negative	Negative
INITIALCOND	Negative	Negative	Positive	Negative	Positive	Positive	Negative	Negative	Negative
Constant	Negative	Negative	Negative	Negative	Negative	Negative	Negative	Negative	Positive

Note: The proxy for dependent variable is shown using the accumulative change of firms' industry-adjusted operating performance. The model estimation uses the Epanechinikov kernel function and Chamberlain's bandwidth. Significant variables at levels of significance of 1%, 5%, and 10% (two-sided) are respectively expressed by ***, **, and *. Numbers in brackets are standard errors.

Source: Author, 2018.

The effect of debt repayment on post-issue operating performance was found statistically insignificant. In contrast, prior research spotted a significant negative relationship (Andriansyah & Messinis, 2016; Wyatt, 2014). This study's insignificant effect could be explained by matching strategy theory, introduced by Morris (1976). Firms expect an asset, funded by a debt instrument, to generate sufficient cash flow for debt repayment at due date. Therefore, operation of this asset affects pre-issue operating performance, rather than post-issue performance. We also analyzed the leverage level of

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:18.

firms with debt repayment purposes and found that 78.95% of firms reduced their leverage ratio, indicating debt repayment in the IPO year. As firms have lower risk, 63.16% of firms tended to issue new long-term debt, thus increasing their leverage ratio, as in a similar phenomenon presented by Walker and Yost (2008). We can expect that proceeds intended for debt repayment do not significantly affect firms' leverage level and operating performance.

An insignificant effect of intended use of proceeds on operating performance was also detected for secondary shares, supporting prior research by Wyatt (2014). Initial shareholders receive all the intended use of proceeds for secondary shares as they sell their ownership to the public. In a word, firms did not obtain any portion of this intended use of proceeds; thus it does not affect post-issue operating performance.

Table 7. Quantile regression results for period t-1 until t+4 after IPO

	EBIT/SALES			NI/SALES		
	Q25	Q50	Q75	Q25	Q50	Q75
Panel A: Independent Variable						
FIXEDASSET	-0.168*	-0.131*	-0.062	-0.078***	-0.044*	-0.009
	(0.095)	(0.068)	(0.059)	(0.018)	(0.025)	(0.026)
WORKINGCAPITAL	-0.023	0.076	0.108	0.004	0.017	0.013
	(0.082)	(0.058)	(0.120)	(0.020)	(0.023)	(0.026)
SHARESOFSTOCK	0.006	-0.124*	-0.108	-0.047***	-0.048**	-0.035*
	(0.126)	(0.062)	(0.088)	(0.017)	(0.019)	(0.019)
DEBTREPAYMENT	-0.071	-0.034	0.009	-0.014	-0.012	-0.011
	(0.056)	(0.044)	(0.057)	(0.012)	(0.013)	(0.014)
SECONDARY-SHARES	0.066	0.021	0.026	0.025	-0.010	0.002
	(0.044)	(0.064)	(0.054)	(0.029)	(0.016)	(0.015)
Observation	36	36	36	36	36	36
Pseudo R-Squared	0,697 - 0,714	0,423 - 0,477	0,228 - 0,270	0,523 - 0,572	0,356 - 0,434	0,237 - 0,304
Panel B: Control Variable and Constant						
PROCEEDSASSET	Positive	Negative	Negative	Negative	Positive	Positive
SIZE	Negative ***	Negative ***	Negative **	Negative **	Negative **	Negative
LEVERAGE	Positive ***	Positive ***	Positive ***	Positive ***	Positive ***	Positive ***
AGE	Positive	Positive	Negative	Positive	Positive	Negative
INITIALCOND	Negative	Negative	Negative	Positive	Positive	Positive
Constant	Positive ***	Positive ***	Positive **	Positive *	Positive *	Positive

Note: The accumulative change of firms' industry-adjusted operating performance is proxied of dependent variable. The model estimation uses the Epanechinikov kernel function and Chamberlain's bandwidth. Significant variables at levels of significance of 1%, 5%, and 10% (two-sided) are respectively expressed by ***, **, and *. Numbers in brackets are standard errors.

Source: Author, 2018.

As tables 4 and 5 reveal, we found that control variables generally influenced post-issue operating performance significantly, as expected from prior research. PROCEEDSASSETS had a negative relationship with operating performance, due to the overinvestment problem (Andriansyah & Messinis, 2016). Higher LEVERAGE was

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:18.

associated with lower agency cost of free cash flow, resulting in better operating performance (Jensen, 1986; Holthausen & Larcker, 1996). The phenomenon of younger firms going public in Indonesia, relative to Europe (Jenkinson & Ljungqvist, 2001), could be why the relationship between AGE and operating performance was insignificant. SIZE exhibited a negative and significant effect on operating performance due to the government's instrumental policies for inducing small firms' growth (Majumdar, 1997). According to Paleari and Vismara (2007), firms tend to go public when experiencing good operating performance and cannot maintain that level afterward, leading to a negative relation between INITIALCOND and post-issue operating performance.

Tables 6 and 7 present quantile regression results for 1 year prior to IPO (t-1) until 4 years after IPO (t+4) period. This research documents that regression coefficients of all independent variables related to intended use of proceeds improved from the first period, which is 1 year prior to IPO (t-1) until 2 years after IPO (t+2). In general, however, regression results showed a less significant effect than in the previous period. This phenomenon could be explained by the fading effect of intended use of proceeds on post-issue operating performance as time goes by (Wyatt, 2014).

CONCLUSION

This paper studied the effect of intended use of proceeds on 36 Indonesian IPO firms' post-issue operating performance during the 2008–2012 period. Based on the quantile regression method, our findings are as follows.

Intended use of proceeds for fixed asset investment was found to have a significant negative effect on firms' operational performance, especially on low- and medium-performing firms. However, intended use for fixed assets was not responsible for high-performing firms' decline in post-issue operational performance. Medium-performing firms were confirmed to have decreasing operating performance due to intended use for working capital. Meanwhile, for high-performing firms, working capital financing was proven successful in improving operational performance after IPO. The negative and significant effect of intended use of proceeds for stock investments, including acquisitions, was found on firms' post-issue operating performance.

We found new evidence, opposing prior research by Andriansyah and Messinis (2016), that the relationship between intended use of proceeds for debt repayment and secondary shares on firms' performance is insignificant. This paper shows the effect of intended use of proceeds on firms' operating performance fades as time goes by, as Wyatt (2014) reported for Australian IPO firms.

This research assumed intended use of proceeds on firms' prospectuses remain unchanged. Even though, in the emerging capital market context, especially in Indonesia, firms' intended use of proceeds can possibly experience revision after IPO. Therefore,

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:18.

further research should consider this possibility and examine the effect on firms' post-issue operating performance.

REFERENCES

Abatecola, G., Cafferata, R., & Poggesi, S. (2012). Arthur Stinchcombe's "liability of newness": contribution and impact of the construct. *Journal of Management History*, 402-418.

Aitchison, J. (1986). *The Statistical Analysis of Compositional Data.* London: Chapman & Hall.

Aitchison, J. (2013). Retrieved from http://www.leg.ufpr.br/lib/exe/fetch.php/pessoais:abtmartins:a_concise_guide_to_compositional_data_analysis.pdf.

Amor, S. B., & Kooli, M. (2017). Intended use of proceeds and post-IPO performance. *The Quarterly Review of Economics and Finance*, 168-181.

Andriansyah, A., & Messinis, M. (2016). Intended use of IPO proceeds and firm performance: a quantile regression approach. *Pacific- Basin Finance Journal*, 14-30.

Antonios, A., Petmezas, D., & Zhao, H. (2005). Bidder gains and losses from firms involved in many acquisitions. *Journal of Business Finance & Accounting*, 1221-1244.

Autore, D. M., Bray, D. E., & Peterson, D. R. (2009). Intended use of proceeds and the long-run performance of seasoned equity issuers. *Journal of Corporate Finance*, 358-367.

Balatbat, M. C., Taylor, S. L., & Walter, T. S. (2004). Corporate governance, insider ownership and operating performance of Australian initial public offerings. *Accounting and Finance*, 299-238.

Berger, A. N., & Patti, E. B. (2006). Capital structure and firm performance: a new approach to testing agency theory and an application to the banking industry. *Journal of Banking & Finance*, 1065-1102.

Cai, J., & Wei, K. C. (1997). The investment and operating performance of Japanese initial public offerings. *Pacific Basin Finance Journal*, 389-417.

Carpenter, R. E., & Rondi, L. (2006). Going public to grow? evidence from a panel of Italian firms. *Small Business Economics*, 387-407.

Carrascal, L. M., Villén-Pérez, S., & Palomino, D. (2016). Preferred temperature and thermal breadth of birds wintering in peninsular Spain: the limited effect of temperature on species distribution. *PeerJ*, 1-16.

Deloof, M. (2003). Does working capital management affect probability of Belgian firms? *Journal of Business Finance & Accounting*, 573-587.

Fry, J. M., & Fry, T. R. (2000). Compositional data analysis and zeros in micro data. *Applied Economics*, 953-959.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:18.

Fry, T. (2011). Applications in economics. In V. Pawlowsky-Glahn, & A. Buccianti, *Compositional data analysis: theory and applications* (pp. 318-326). John Wiley & Sons, Ltd.

Geddes, R. (2003). *IPOs and equity offerings.* Elsevier Science & Technology.

Hao, L., & Naiman, D. Q. (2007). *Quantile regression.* California: Sage Publications.

Harding, D., Jackson, R., & Shankar, S. (2013). *The renaissance in mergers and acquisitions: How to make your deals successful.* Bain & Company, Inc.

Holthausen, R. W., & Larcker, D. F. (1996). The financial performance of reverse leveraged buyouts. *Journal of Financial Economic*, 293-332.

Hron, K., Filzmoser, P., & Thompson, K. (2012). Linear regression with compositional explanatory variables. *Journal of Applied Statistics*, 1-14.

Hung, W. T., Shang, J. K., & Wang, F. C. (2010). Pricing determinants in the hotel industry: Quantile regression analysis. *International Journal of Hospitality Management*, 378-384.

Huo, L., Kim, T. H., & Kim, Y. (2013). Testing for autocorrelation in quantile regression models. *Economic Research Institute*, 1-17.

International Monetary Fund. (2016). *World Economic Outlook Database October 2016.*

Jain, B. A., & Kini, O. (1994). The post-issue operating performance of IPO firms. *The Journal of Finance*, 1699-1726.

Jenkinson, T., & Ljungqvist, A. (2001). *Going public: the theory and evidence on how companies raise equity finance.* New York: Oxford University Press.

Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American Economic Review*, 323-329.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 305-360.

Kim, K. A., Kitsabunnarat, P., & Nofsinger, J. R. (2004). Ownership and operating performance in an emerging market: evidence from Thai IPO firms. *Journal of Corporate Finance*, 355-381.

Koenker, R., & Bassett Jr., G. (1978). Regression quantiles. *Econometrica*, 33-50.

Kuncová, M., Hedija, V., & Fiala, R. (2016). Firm size as a determinant of firm performance: the case of swine raising. *Agris on-line Papers in Economics and Informatics*, 77-89.

Logan, J., & Petscher, Y. (2013, Maret 23). An introduction to quantile regression. *Presentation for Modern Modeling Methods Conference*. United States.

Loughran, T., & Ritter, J. R. (1997). The operating performance of firms conducting seasoned equity offerings. *Journal of Finance*, 1823-1850.

Machado, J. A., & Santos-Silva, J. M. (2000). Glejser's test revisited. *Journal of Econometrics*, 189-202.

Majumdar, S. K. (1997). The impact of size and age on firm-level performance: some evidence from India. *Review of Industrial Organization*, 231-241.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:18.

Mankins, M., & Steele, R. (2005, Juli). *Turning great strategy into great performance.* Retrieved from Harvard Business Review: https://hbr.org/2005/07/turning-great-strategy-into-great-performance.

Martin-Fernandez, J. A., Palarea-Albaladejo, J., & Olea, R. A. (2011). Dealing with zeros. In V. Pawlowsky-Glahn, & A. Buccianti, *Compositional Data Analysis: Theory and Applications* (pp. 43-58). John Wiley & Sons Ltd.

Mikkelson, W. H., Partch, M. M., & Shah, K. (1997). Ownership and operating performance of companies that go public. *Financial Economics*, 281-307.

Morris, J. R. (1976). On corporate debt maturity strategies. *The Journal of Finance*, 29-37.

O'Brien, R. M. (2007). A caution regarding rules of thumb for variance inflation factors. *Quality & Quantity*, 673-690.

Paleari, S., & Vismara, S. (2007). Over-optimism when pricing IPOs. *Managerial Finance*, 352-367.

Teoh, S. H., Welch, I., & Wong, T. J. (1998). Earnings management and the long-run market performance of initial public offerings. *Journal of Finance*, 1935-1974.

Walker, M. D., & Yost, K. (2008). Seasoned equity offerings: What firms say, do, and how the market reacts. *Journal of Corporate Finance*, 376-386.

Wang, C. (2005). Ownership and operating performance of Chinese IPOs. *Journal of Banking & Finance*, 1835-1856.

World Bank. (2017). *Global Economic Prospects January 2018*. Washington.

Wyatt, A. (2014). Is there useful information in the ‘use of proceeds’ disclosures in IPO prospectuses? *Accounting and Finance*, 625-667.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:18.

ABOUT THE EDITORS

Beta Yulianita Gitaharie is senior lecturer at the Department of Economics and Dean of Faculty of Economics and Business, Universitas Indonesia. She has interests in macroeconomics, monetary and development economics, including financial inclusion. Some of her research was published as book chapter in ILO Publication and WTO Publication and national academic journals, among others *Economics and Finance in Indonesia*, *Jurnal Ekonomi dan Pembangunan Indonesia*. She also contributed to quarterly economic highlights in collaboration between LPEM FEB UI with BCA.

Yulianti Abbas is currently the Director of Graduate Program in Accounting at the Faculty of Economics and Business, Universitas Indonesia. She received her doctoral degree in Public Finance and Public Management from the O'Neill School of Public and Environmental Affairs, Indiana University, Bloomington, USA in 2017. Yulianti's research focuses on the value relevance of government transparency. She has done works related with measuring municipal government transparency and to what extent transparency affects the information asymmetry surrounding municipal government. She also investigates how tax policy shapes corporate reporting behavior. She has published her work in journals such as the *National Tax Journal* and *Municipal Finance Journal* and has served as a reviewer for the American Accounting Association's conferences in the last three years.

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:26.

Miranti Kartika Dewi is Lecturer of Accounting at the Faculty of Economics and Business, Universitas Indonesia. She obtained her PhD from Aston Business School, Aston University, Birmingham, UK. Her academic work has been published in several book chapters and international journals including Accounting, Auditing and Accountability Journal, as well as being presented at international conferences around the world. She also contributed as a reviewer for various local and international journals such as the *International Journal of Islamic Finance* and *Middle Eastern Management and The Social Responsibility Journal*. In addition to her activities as Lecturer, she is a co-founder of Britannia Proofreading Service (britanniaproofreadingservice.com) and a partner at Lariba Consulting (www.laribaconsulting.com).

Dwini Handayani is a Lecturer at the Faculty of Economics and Business, Universitas of Indonesia (FEB UI). Currently, the author is also a researcher at the Demographic Institute of the Faculty of Economics and Business, Universitas of Indonesia. Dwini was the Vice Director at the Demographic Institution for the period 2010-2015. In addition, she is currently the Secretariate General of the Indonesian Coalition for Population and Development. Her field of research are labour economics, economic behavior and gender studies. Together with Prof. Sudarsono from Gadjah Mada University, she wrote a book called *A Point of Entry into Understanding of The Economy of Indonesia* published by Gadjah Mada University Press (2015).

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:26.

INDEX

A

academic atmosphere, 215
access, 15, 24, 42, 45, 46, 47, 77, 130, 141, 150, 151, 152, 177, 181, 296, 304, 354, 370, 371, 373
accountability, 272, 274, 358, 367, 369, 372, 376, 398, 426
accounting, iv, vi, ix, 43, 175, 177, 178, 182, 185, 191, 192, 193, 194, 215, 216, 219, 222, 223, 224, 225, 234, 251, 257, 261, 272, 273, 274, 275, 277, 278, 279, 280, 281, 282, 283, 287, 288, 289, 290, 291, 292, 308, 309, 311, 321, 322, 323, 324, 326, 327, 331, 339, 340, 341, 345, 346, 356, 357, 367, 369, 370, 372, 374, 375, 376, 377, 379, 389, 390, 391, 395, 402, 422, 424, 425, 426
accounting standards, 275, 278, 279, 280, 282, 289, 326, 372
accrual earnings management, 175, 177, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 292
acquisitions, 249, 308, 405, 408, 410, 419, 421, 422, 423
adjustment, 87, 177, 182, 274, 284, 346, 348, 353, 410, 416
age, 128, 130, 133, 134, 135, 136, 137, 140, 142, 145, 153, 156, 158, 159, 164, 166, 168, 169, 170, 171, 380, 423
agencies, 271
agency theory, 178, 280, 281, 282, 295, 346, 348, 360, 379, 382, 407, 422
aggregate demand, 83, 84, 86, 87
aggregate output, 86
aggregate supply, 86, 87, 99
aggregate supply curve, 86
aggressiveness, 194, 340
agricultural economics, 47
agricultural exports, 123
agriculture, 141, 143, 148
alcohol consumption, 169
analytical framework, 44, 279
ASEAN CG scorecard, 277, 288, 289, 303, 306
Asia, 28, 103, 151, 168, 230, 273, 312, 314, 340
Asian countries, 20, 311
Asian crisis, 19, 21, 26, 30, 32, 35
Asian firms, 313, 318
assessment, 15, 19, 26, 35, 103, 221, 259, 284
assets, ix, 22, 42, 176, 178, 184, 185, 197, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 240, 242, 243, 246, 247, 248, 249, 262, 264, 269, 283, 285, 299, 302, 303, 306, 315, 316, 317, 318, 319, 324, 325, 326, 328, 329, 331, 332, 334, 335, 336, 337, 338, 357, 361, 362, 372, 374, 385, 386, 396, 399, 411, 414, 417, 421
asymmetric information, 20, 197, 200, 281, 378, 379
asymmetric monetary effects, v, 81
asymmetry, 81, 83, 84, 87, 89, 179, 259, 280, 282, 360, 390
audit committee, vi, 277, 278, 279, 281, 282, 283, 285, 287, 288, 289, 290, 305, 309
audit fees, vi, 311, 312, 313, 314, 315, 318, 319, 320
audit quality, iv, vi, 194, 257, 258, 260, 262, 266, 267, 270, 272, 273, 274, 323, 324, 325, 327, 328, 329, 330, 331, 334, 335, 336, 338, 339, 340
audit risks, 311, 312, 318

Copyright © 2020. Nova Science Publishers, Incorporated. All rights reserved.

Recent Studies in Economics of Development, Business and Accounting, edited by Beta Yulianita Gitaharie, Nova Science Publishers, Incorporated, 2020. ProQuest Ebook Central, http://ebookcentral.proquest.com/lib/IAINPurwokerto-ebooks/detail.action?docID=6269238.
Created from IAINPurwokerto-ebooks on 2022-03-29 01:52:35.