



Assessing the economic impact of free trade agreement on Indonesia

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► To cite this version:

Muhammad Sofjan. Assessing the economic impact of free trade agreement on Indonesia. Economics and Finance. Université de Bordeaux, 2016. English. NNT : 2016BORD0119 . tel-01412174

HAL Id: tel-01412174

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THÈSE PRÉSENTÉE
POUR OBTENIR LE GRADE DE
DOCTEUR DE
L'UNIVERSITÉ DE BORDEAUX

ÉCOLE DOCTORALE ENTREPRISE, ÉCONOMIE, SOCIÉTÉ (EES)
SPÉCIALITÉ SCIENCES ÉCONOMIQUES

Par Muhammad SOFJAN

**ASSESSING THE ECONOMIC IMPACT OF FREE TRADE
AGREEMENT ON INDONESIA**

Sous la direction de : Jean-Marie CARDEBAT
(Professeur, Université de Bordeaux)

Soutenue le 08 Septembre 2016

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Titre : Évaluer l'Impact Économique de l'Accord de Libre-Échange sur l'Indonésie

Résumé : L'Indonésie est un pays en développement qui adopte une économie ouverte où le maintien de relations commerciales avec les autres pays est significatif. Il y a un niveau élevé de trafic économique international avec un impact substantiel sur l'économie et sur le développement national. Durant son développement, la collaboration avec d'autres pays a été généralisée. Cette thèse examine l'impact économique des accords de libre-échange et de la libéralisation des échanges tentés en Indonésie. Le but est d'adresser les problèmes suivants : examiner l'effet de la libéralisation des échanges sur le volume des exportations et des importations, le revenu de l'état dans les aspects des échanges internationaux, tel que les droits d'importation, et fournir un examen approfondi du lien entre la libéralisation des échanges, la pauvreté et l'inégalité en Indonésie. Une analyse empirique est menée en ajoutant les facteurs de libéralisation aux fonctions de demande d'exportation et d'importation pour déterminer l'impact de la libéralisation sur les activités d'exportation et d'importation en Indonésie. Les résultats indiquent que, pour l'Indonésie, les politiques de libéralisation des échanges qui sont mesurées par les droits d'exportation et les droits d'importation ont un impact négatif sur les exportations et les importations. Afin de faire face aux problèmes fiscaux, on peut conclure que les politiques de libéralisation des échanges d'augmenter le volume des importations. Les conditions de pauvreté et l'inégalité d'un pays peuvent être influencées par l'ouverture de son économie. Les résultats révèlent que la libéralisation des échanges a un impact négatif direct sur la pauvreté où la libéralisation des échanges peut réduire le niveau de pauvreté.

Mots clés : Accords de libre-échange, analyse empirique, exportations, importations, la pauvreté

Title : Assessing the Economic Impact of Free Trade Agreement on Indonesia

Abstract : Indonesia is a developing country that has adopted an open economy where trade relations with other countries is significant. Indeed, there is a high level of international economy traffic that has substantially impacted the economy and national development. Throughout the nation's development, cooperation and involvement with other countries has been widespread. This thesis investigates the economic impact of free trade agreements and the trade liberalization attempted in Indonesia in order to: examine the effect of trade liberalization on the volume of exports and imports; analyse state revenue regarding aspects of international trade, such as import duty; and provide a detailed investigation of the relationship between trade liberalization, poverty and inequality in Indonesia. An empirical analysis is conducted by adding liberalization factors to the import and export demand functions to determine the impact of liberalization on export and import activities in Indonesia. The results indicate that, for this nation, trade liberalization policies measured through export taxes and import duties negatively impact exports and imports. To deal with fiscal issues, it can be concluded that the policies of trade liberalization are still able to increase import volume. Conditions of poverty and inequality in a country can also be influenced by the openness of its economy. The results reveal that trade liberalization negatively impacts poverty and may reduce poverty levels in Indonesia.

Keywords : Free Trade Agreement, Trade Liberalization, Empirical Analysis, Export-Import, Import Duty, Poverty

Acknowledgements

This thesis is the result of a period of four years spent as a PhD student in the LAREFI unit at the University of Bordeaux. The production of this thesis, however, involved a great deal of sacrifice, and has been a painstaking process.

I am indebted to many people who made contributions so I could finish my PhD, but it is only possible to mention just a few here. First and foremost, I would like to express my sincere and deep gratitude to my supervisor M. Jean-Marie Cardebat for all his assistance, and thank him for accepting my application to do a PhD at this university. I appreciate all the contributions of knowledge, support and criticism he made during every stage of the process. His extensive guidance helped me to understand and integrate each part of my topic so that I was able form my thesis. His detailed and critical readings of my work enabled me to improve its quality until finally it was finished. Furthermore, I also wish to thank the other members of the Jury, M. Pascal Kauffmann, M. Serge Rey, and M. Jean-Marc Montaud, for their willingness to read and comment upon my thesis. Their perspectives and suggestions were highly insightful and contributed to the improvement of my work. My sincere thanks are extended to Christel Chaineaud (*Ingénieur d'étude en valorisation de la recherche*) and my colleagues Thomas Humblot and Ibrahima Sangare in the LAREFI unit. I would also like to thank the Indonesian government, particularly the Ministry of Finance, for providing me with four years leave.

I would like to thank the Republic of Indonesia's Lembaga Pengelola Dana Pendidikan (LPDP) fund for education that bestowed upon me a Dissertation Scholarship and financial assistance for this research.

Studying abroad for a PhD level involves a huge investment of resources, so I would especially like thank my employer, the Ministry of Finance, for giving me this wonderful opportunity. I wish to extend my deepest gratitude to Bapak Kamil Sjoeib, Bapak Dody Iskandar, Ibu Sumiati, Bapak Agus Hermawan in the BPPK department of the Ministry of Finance for their generous support, and for trusting me to conduct this study.

Finally, I could not have completed my thesis without the prayers and continuous concern of my dear family – mama, my brothers and my sisters. I am very grateful for their prayers, love, and support from Indonesia. A special thanks goes to my wife, who has been very supportive and patient over the course of these four years, and to my sholihah daughters, Khadijah and Aisha, and my son Hudzaifah, for their love, perseverance and cooperation during the difficult times and the stressful moments. Above all, though words themselves are not enough, I extend my praise to God for his blessings, mercy, wisdom and foresight that made it possible for me to undertake and complete this study.

"Jika Kamu tidak dapat menahan lelahnya belajar, maka kamu harus sanggup menahan perihnya kebodohan."

"Barangsiapa menuntut ilmu yang seharusnya untuk mencari ridhaNya, namun ia tidak mempelajarinya kecuali untuk mencari dunia, maka ia tidak akan mendapatkan harumnya surga di hari kiamat"

Résumé

L'Indonésie a été engagée activement dans des accords libre-échange depuis 1992. Ces accords commerciaux ont ouvert l'économie de l'Indonésie sur beaucoup d'avantages de libéralisation des échanges, variés de l'accès à des marchés plus grands pour ses produits et la disponibilité de différents produits de haute qualité à des avantages intangibles de plus grande concurrence et l'allocation des ressources efficaces.

L'objectif de cette thèse était d'enquêter l'impact économique des accords libre-échange et la libéralisation des échanges essayés en Indonésie avec d'autres pays partenaires. Différents cadres conceptuels, qui testent les théories sur les effets de la libéralisation des échanges en Indonésie, servent pour répondre à une question importante dans cette étude : Comment peut la libéralisation des échanges affecter la performance d'importation et exportation en Indonésie ? Est-ce que la libéralisation affecte la recette fiscale, dans ce cas les recettes des droits de douane ? Finalement, comment la libéralisation des échanges affecte la pauvreté en Indonésie ?

Comment la libéralisation des échanges affecte la performance de l'exportation et l'importation en Indonésie ? Commenant par la fonction exportation et importation. Elle a pour objectif de déterminer les facteurs empiriques principaux des importations et des exportations en Indonésie, qui est un des pays en voie de développement qui participent dans des accords de coopération pour le libre-échange. Par conséquent, Les fonctions de l'importation et de l'exportation sont ajoutées aux facteurs de la libéralisation pour déterminer l'impact de la libéralisation sur les activités de l'importation et l'exportation en Indonésie en court et en long termes. Nous trouvons que le revenu mondial, le prix relatif, et les taxes de l'exportation affectent le volume des exportations sur le long terme, tandis que le

volume de l'importation est affecté par le prix relatif, le revenu intérieur et les droits de douane à long terme.

Pour les exportations, nos investigations ont fourni des résultats qui étaient similaires aux résultats pour le volume des importations. Cela est dû au fait que la demande pour les exportations indonésienne dépendent largement sur le revenu mondial, au lieu de prix relatif des exportations. En outre, l'élasticité de revenu à long terme a montré une très haute valeur en comparaison avec l'élasticité de revenu à court terme de la demande pour les exportations. Cela indique le plus grand impact de revenu à long terme qu'à court terme. L'impact des changements dans le PIB de l'Indonésie sur l'importation semble dissimuler l'impact de changement le PIB mondial sur les exportations à court terme, suscitant des inquiétudes pour la balance commerciale à court terme. Le haut coefficient de l'élasticité de PIB mondial indique l'importance de considérer la croissance économique des pays partenaires commerciaux majeurs de l'Indonésie. Cela est relié aux facteurs comme la demande pour les exportations de marchandises de l'Indonésie. La baisse dans la performance de l'économie mondiale, surtout les partenaires commerciaux indonésiens, affecte probablement la performance des exportations.

Quant aux importations, nos investigations ont montré que le volume des importations dépend largement sur PIB de l'Indonésie. S'il y a une augmentation dans le PIB de l'Indonésie, les importations indonésiennes tendent aussi à augmenter considérablement. L'élasticité de revenu intérieur à court terme est beaucoup plus élevée que l'élasticité de revenu intérieur à long terme. C'est-à-dire que les changements dans le revenu ont potentiellement des effets simultanés sur le changement d'importation. Les prix relatifs ont un petit effet sur les importations. Une élasticité de prix significative à court terme ne semble pas importante à long terme.

Les résultats ont montré que les prix ont un petit effet sur les importations, illustrant le motif des importations en Indonésie.

L'impact de la libération des échanges sur les exportations et les importations en Indonésie était aussi enquêté en utilisant les taxes d'exportation, droits de douane, et les variables nominales de la libéralisation. Pour les taxes de l'exportation à long terme, on a trouvé que les effets des taxes d'exportation ont un impact important sur, et sont liés au, volume des exportations. Il y a un effet inélastique des droits d'exportation sur les exportations. Exactement comme la taxe à l'exportation, la taxe à l'importation influencent aussi les importations inélastiques. Les droits d'importation à court terme sont négativement liés aux importations. Dans les pays de libre-échange, les marchandises importées ne sont pas relativement supérieures. La baisse de droits d'importation dans la période en cours et au trimestre précédent augmentera le volume d'importations dans la période actuelle. Si les droits sont supérieurs que le coefficient des taxes d'exportation à court terme, le changement dans les droits de douane sera plus influent que la taxe à l'importation provoquant des fluctuations dans la croissance de volume d'exportations et d'importations. Les politiques de libéralisation ont un impact positif et significatif sur les importations à court terme. Nos investigations ont également trouvé que la vitesse de redressement de l'équation d'exportation est moins que celle de l'équation d'importation. C'est-à-dire que le redressement d'exportation revient à l'équilibre qui se produit plus lentement que les importations. Par conséquent, les importations plus rapidement reviennent à l'équilibre que les exportations.

Est-ce que la libéralisation affecte le revenu fiscal, dans ce cas les recettes des droits de douane ? Nous commençons par un modèle qui a une seule variable indépendante, suivi par un modèle avec trois variables indépendantes et deux variables nominales. Afin de déterminer le meilleur modèle, les tests sont effectués

pour obtenir une bonne équation pour éviter l'erreur dans la spécification du modèle. Des tests pour sélectionner le meilleur modèle sont effectués par l'usage du test d'Erreur de Spécification d'Equation de Régression (Ramsey RESET), le test de Critère d'Information d'Akaike (CIA) et le test de Critère d'Information bayésien (CIB) pour déterminer si n'importe variable est omise. Ces variables sont les importations, les taux d'échanges et les tarifs. Afin d'enquêter sur l'impact de de l'étude de la libéralisation des échanges, la variable de libre-échange est aussi ajoutée et finalement parce que l'Indonésie a connu une crise, la variable de la crise économique est ajoutée.

Les résultats d'investigation du meilleur modèle indiquent que les plus grands facteurs affectant l'approbation des fonctions dans la mise en œuvre de la libéralisation d'échanges en Indonésie. A long terme, la variable de taux d'échange, suivie par l'importation et les montants de tarifs. De plus, à court terme, les variables influencent le revenu de droits d'importation sont la valeur de l'importation, suivies par le taux d'échange et finalement la montant des tarifs. Alors que, les facteurs de la libéralisation et de la crise ont une influence négative sur les fonctions d'accueil ; la valeur d'importations, les tarifs, et le taux d'échange ont corrélation positive avec les fonctions d'accueil. A court terme, les facteurs de la valeur d'importation sont le plus large contributeur dans les droits de douane. Les valeurs d'importation soumises par des importateurs sont basées sur l'évaluation de l'indépendance économique en Indonésie. Les valeurs d'importation étudiées dans cette étude comprennent la valeur de l'inélasticité.

Les facteurs de taux d'échangea eu une corrélation positive avec les fonctions d'accueil. La monnaie de rupiah (roupie indonésienne) a baissé devant le dollar américain, et les recettes de droit de douane ont augmenté. Cette constatation empirique conforme à la théorie du commerce international. Cette augmentation

dans le taux d'échange était capable de stimuler un haut niveau d'activité d'exportation. Ainsi, réduisant le déficit de tous les pays (Augmentation de surplus) de temps en temps. Les facteurs de la moyenne des tarifs ont particulièrement une corrélation positive avec les fonctions d'accueil. L'impact de la libéralisation sur quelque réduction de tarif dans les droits d'importation a des conséquences pour la baisse dans les recettes dans le secteur fiscal, précisément les droits de douane.

Comment la libéralisation d'échange affecte la pauvreté en Indonésie? Nous avons utilisé les modèles de recherche suivantes : Le modèle de revenu, le modèle de Gini et le modèle de pauvreté. Tous les trois modèles utilisent le revenu de variable, le ratio Gini, l'infrastructure, le taux d'investissement, le développement du secteur non-étatique, l'ouverture, le vrai seuil de la pauvreté, l'incidence de la pauvreté et la variable nominale, à savoir le faux rural-urbain et la fausse crise. Ces modèles étaient analysés en utilisant un modèle d'équations simultanées et un panneau de données était utilisé pour examiner la relation entre la libéralisation, la pauvreté et l'inégalité en Indonésie.

Les résultats de la sélection de modèle ont montré que la meilleure méthode pour réaliser une régression de revenu était la méthode d'effet fixée. Les résultats de l'enquête ont montré également que la croissance de revenu par personne en Indonésie étaient considérablement affectée par la recette de l'année précédente, l'investissement, le degré de l'ouverture et le ratio du nombre de travailleurs dans le secteur non-gouvernemental. La variable de l'ouverture était aussi importante et positivement liée au revenu. C'est-à-dire que l'ouverture dans le commerce est un facteur important pour promouvoir la croissance en Indonésie.

Le ratio du nombre des travailleurs dans le secteur non-gouvernemental a positivement et considérablement affecté la croissance. L'élasticité de revenu sur l'ouverture est relativement plus inélastique que l'élasticité de revenu sur

l'investissement et le secteur non-gouvernemental. Cela suggère que en Indonésie, l'élasticité de revenu contre l'ouverture est relativement basse (inélastique), bien que c'est une source de croissance, le rôle de l'ouverture commerciale est relativement considérable.

Les facteurs qui affectent considérablement le niveau d'inégalité en Indonésie sont le ratio du nombre des travailleurs dans le secteur non-gouvernemental au nombre total des travailleurs et l'infrastructure, tandis que le degré de l'ouverture commerciale et la croissance n'est pas considérablement associé à l'inégalité. L'ouverture commerciale en Indonésie n'affecte pas l'inégalité. L'impact de l'ouverture commerciale en Indonésie peut dépendre des politiques nationales, où, en réalité, un commerce plus ouvert est ni capable de distribuer le revenu entre la main d'œuvre qualifiée et la main d'œuvre non-qualifiée ni minimiser l'écart existant.

Un meilleur pouvoir d'infrastructure, en fait, augmente le niveau d'inégalité en Indonésie. Le meilleur est la construction des routes dans une région, le plus haut l'augmentation dans l'inégalité dans telle région. Cela est possible parce que le développement d'infrastructure en Indonésie est uniquement bénéfique pour certaines personnes qui ont un revenu plus élevé. Toutefois, les pauvres gens ne peuvent pas bénéficier du développement du transport, donc à la fin, l'écart entre le riche et le pauvre devient même plus élevé. Par ailleurs, la crise en Indonésie en 1997 s'est avérée pour augmenter l'inégalité de revenu.

L'ouverture commerciale en Indonésie a des impacts négatifs et considérables sur les niveaux de pauvreté. Ce cas a montré que l'effet direct anti-pauvreté s'est produit en Indonésie. Cette étude a également trouvé que la libéralisation d'échange en Indonésie a prouvé être capable de soulever la plus part de pauvres hors du seuil de la pauvreté en créant des postes de travail dû aux relations commerciales, par exemple, à travers l'exportation des produits d'agriculture et les objets artisanaux

Cependant, le commerce n'est pas capable de réduire l'inégalité de revenu en Indonésie, c'est-à-dire même si la pauvreté a baissé, l'écart du revenu entre le riche et le pauvre n'a pas nécessairement baissé. Bien que la libéralisation d'échange soit avérée pour réduire la pauvreté, cela ne veut pas dire que l'Indonésie doit libéraliser le commerce ouvertement. En outre, les débuts de la libéralisation d'échange, le niveau de la pauvreté tend à s'améliorer, mais à des étapes ultérieures, le niveau de la pauvreté uniquement empire.

CONTENTS

CONTENTS	i
LIST OF TABLES	v
LIST OF FIGURES	vii
GENERAL INTRODUCTION	1
CHAPTER 1 THE REGIONAL TRADE AGREEMENT: THEORY AND EVIDENCE	16
1.1 The Importance of Regional Trade Agreements (RTAs)	17
1.2 The Theory of RTAs and Economic Integration	19
1.3 Types of Regional Economic Integrations	25
1.4 Why Countries opt for Regional Trade Agreements	27
1.4.1 Economic Motives	27
1.4.2 Political Motives	30
1.4.3 Other Motives	33
1.5 The Effects Issues of Liberalization	35
1.5.1 The Effects of PTAs in Common	35
1.5.2 The Effect of Trade Liberalization on Revenues	38
1.6 Regional Dealing with ASEAN Countries	42
1.6.1 The Patterns of Economic Growth and Development	44
1.6.2 ASEAN Free Trade Area (AFTA) Agreement	52
1.6.3 APEC Trade Liberalization	57
CHAPTER 2 THE EFFECT OF TRADE POLICY LIBERALIZATION ON EXPORT- IMPORT GROWTH IN INDONESIA	63
2.1 Introduction	64
2.1.1 Background	64

2.1.2 Problem Formulation	71
2.1.3 Research Objectives.....	71
2.2 Conceptual Framework.....	72
2.2.1 International Trade Review.....	72
2.2.2 Trade Liberalization, Economic Growth, and National Welfare	76
2.3 Methodology.....	80
2.3.1 Research Model	80
2.3.2 The Data.....	83
2.3.3 Method of Analysis.....	85
2.4 Results and Discussions.....	87
2.4.1 Empirical Analysis.....	87
2.4.2 Analysis of Export and Import Demand	95
2.5 Conclusions	101
CHAPTER 3 FREE TRADE POLICIES' IMPACTS ON IMPORTS DUTY REVENUE	
IN INDONESIA.....	103
3.1 Introduction	104
3.1.1 Background.....	104
3.1.2 Research Questions.....	105
3.2 Conceptual Framework.....	106
3.2.1 International Trade Policy in Import.....	107
3.2.2 Free Trade Policy	111
3.3 Methodology.....	112
3.3.1 Specification of Research Model	112
3.3.2 The Data.....	115
3.3.3 Methods of Analysis	117
3.4 Results and Discussions.....	124
3.4.1 Selecting the Best Model	124

3.4.2 Stationarity Test	126
3.4.3 Cointegration Analysis.....	128
3.4.4 Error Correction Model (ECM)	130
3.4.5 Diagnostic Test	132
3.4.6 Analysis.....	134
3.5 Conclusions	147
CHAPTER 4 TRADE LIBERALIZATION, POVERTY AND INEQUALITY IN INDONESIA	149
4.1 Introduction	150
4.1.1 Background.....	150
4.1.2 Problem Formulation and Research Question	154
4.2 Conceptual Framework.....	154
4.2.1 Poverty, Inequality and Absolute Poverty	154
4.2.2 Gini coefficient and the measurement of Aggregate Inequality	157
4.2.3 Relationship between Trade, Poverty and Inequality	158
4.2.4 The Policy of Trade and Trade Liberalization in Indonesia	160
4.2.5 Poverty in Indonesia	165
4.3 Methodology.....	169
4.3.1 Specification of Research Model	169
4.3.2 Panel Data Analysis Method.....	171
4.3.3 Selecting the Method of Estimation.....	172
4.4 Results and Discussions.....	174
4.4.1 Regression Selection.....	174
4.4.2 The Results of Multicollinearity Test	174
4.4.3 Model Selection Test	174
4.4.4 Analysis.....	177
4.5 Conclusions	192

GENERAL CONCLUSION	194
BIBLIOGRAPHY	204

LIST OF TABLES

Table 1 Bilateral and Plurilateral Agreements Conducted by Indonesia.....	12
Table 1.1 Types and characteristics of economic integrations.....	27
Table 1.2 Selected Basic Indicators of ASEAN Countries, 2013	45
Table 1.3 Sectoral Value Added Share of GDP (%)	47
Table 2.1 Change of Export Structure.....	70
Table 2.2 Change of Import Structure.....	70
Table 2.3 Unit Root Test and Tests for the order of integration	88
Table 2.4 Johansen's Cointegration Test (Trace) Result for Export Model.....	89
Table 2.5 Unrestricted Cointegration Rank Test (Maximum Eigenvalue).....	89
Table 2.6 Johansen's Cointegration Test (Trace) Result for Import Model.....	90
Table 2.7 Unrestricted Cointegration Rank Test (Maximum Eigenvalue).....	90
Table 2.8 Summary of Error Correction Model for Export Model	92
Table 2.9 Summary of Error Correction Model for Import Model	93
Table 2.10 Diagnostic Test for Export Model.....	95
Table 2.11 Diagnostic Test for Import Model.....	95
Table 3.1 Description statistics of variables	115
Table 3.2 The outcome of the regression and Ramsey Reset and AIC and BIC test	125
Table 3.3 Unit Root Tests Results	128
Table 3.4 Johansen's Cointegration Test Result for Model A	129
Table 3.5 Johansen's Cointegration Test Result for Model B.....	129
Table 3.6 Summary of Error Correction Model for Model B	131
Table 3.7 Diagnostic Test.....	133
Table 4.1 Number and Percentage of Poor People, 1996-2013.....	166
Table 4.2 Matrix of Correlation between Variables	174
Table 4.3 Test results LM and Hausman Test for Equation of Income.....	175

Table 4.4	Test results LM and Hausman Test for the Equation of GINI	176
Table 4.5	Test results LM and Hausman Test for Equation of POVERTY	177
Table 4.6	Regression of Income Equation by Using Fixed Effect Method.....	178
Table 4.7	Regression of Gini Equation by Using Random Effect Method.....	181
Table 4.8	Regression of Poverty Equation by Using Random Effect Method.....	187

LIST OF FIGURES

Figure 1 Bilateral and Plurilateral Trade Agreements.....	4
Figure 2 Free Trade Agreement by Category	4
Figure 1.1 Laffer Curve.....	40
Figure 1.2 ASEAN Trade with Major Trading Partners (US\$ billion), 2010-2012.....	48
Figure 1.3 ASEAN's share of global trade, 2011	49
Figure 1.4 Growth in Share of ASEAN Trade both Within and Outside the Region	49
Figure 3.1 Impact of Import-Duty Policy.....	109
Figure 3.2 Normality Data for $\ln CR$ Variable	116
Figure 3.3 Normality Data for $\ln GDP$ Variable.....	116
Figure 3.4 Normality Data for $\ln CRGDP$ Variable.....	116
Figure 3.5 Normality Data for $\ln MGDP$ Variable	116
Figure 3.6 Normality Data for $\ln ER$ Variable	116
Figure 3.7 Normality Data for ATR Variable	116
Figure 3.8 Stationarity Test: Model A.....	126
Figure 3.9. Stationarity Test: Model B.....	127
Figure 3.10 Residual vs Fitted Plots (Heteroscedasticity): Model A	132
Figure 3.11 Residual vs Fitted Plots (Heteroscedasticity): Model B	132
Figure 3.12 Import Duty and GDP of Indonesia (Million Rupiah)	134
Figure 3.13 Import-Duty Revenue GDP (percentage)	137
Figure 3.14 Import Value to GDP (percentage)	137
Figure 3.15 Average Tariff Rate (percentage)	138
Figure 3.16 Exchange Rate (Rupiah)	138
Figure 3.17 Decline in Import Tariff Preferences 2004-2013 (percentage).....	141
Figure 3.18 Import Duty Revenue and Dutiable Import	146

Figure 4.1 Value of Exports, imports and Indonesia Revenues, 2000-2012 (Billion Rp).....	164
Figure 4.2 Degree of Openness and Poverty Level	165
Figure 4.3 Gini Ratio, 1996-2013	167
Figure 4.4 Distribution of Expenditure in Urban Areas, 1996-2013.....	168
Figure 4.5 Distribution of Expenditure in Rural Areas, 1996-2013.....	168
Figure 4.6 Distribution of Expenditure in Urban+Rural Areas 1996-2013	169
Figure 4.7 GINI, poverty and Inequality in Some South-East Countries.....	184

GENERAL INTRODUCTION

Nowadays, trade liberalization does not constitute a new phenomenon. Almost all countries in the world, as members of the international community, enter into free-trade groups or set up bilateral relations in order to run a free-trade agreement. Free-trade groups are trade-liberalization agreements established by several countries. The development of international trade points towards freer trade accompanied by various forms of bilateral, regional and multilateral arrangements. One of the main purposes of international trade agreements is to attempt to reduce or eliminate trade barriers. Global trade liberalization, accompanied by patterns of international cooperation, possesses positive implications for world economic growth. The value of world trade grows more than twice as fast as world real Gross Domestic Product (GDP) growth (Krueger, 1999). Free trade is expected to boost efficiency and increase prosperity through the removal of barriers, both tariff and non-tariff. With trade liberalization at both international and regional levels, trade barriers can be reduced and even eliminated. Reduction and elimination of both tariff and non-tariff barriers will accelerate regional economic integration, along with the exchange of goods, services, capital and labor.

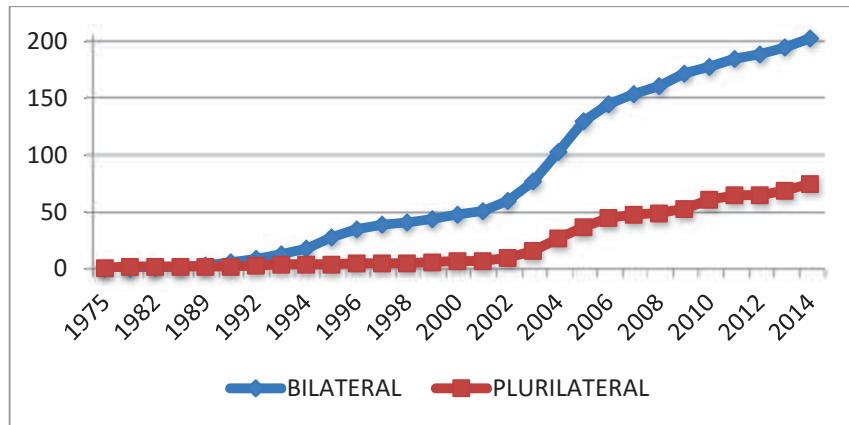
Many bilateral trade agreements (BTAs) have been established over the last few decades. Some of these agreements can be found, for example, in the area of East Asia, such as a trade agreement between ASEAN members and three non-ASEAN countries: China, South Korea, and Japan. The bilateral trade agreement has triggered an increase in regional powers in East Asia under the auspices of the ASEAN Plus Three (APT) initiative.

Specific attention should be directed to the agreements in this area which are increasingly common due to the impact of the involved countries. The growing tendency to form BTAs in this region deserves special attention, especially as regards the implications for the individual country involved in the agreement. Unlike other ASEAN members such as Singapore, Thailand, Malaysia, and the Philippines, Indonesia is considered to be slow in setting up trade agreements with other non-member countries of ASEAN. If it is to follow the

foreign economic policy of other ASEAN members, Indonesia should run a more open trade policy. Therefore, it appears inevitable that Indonesia will catch up by entering into agreements with other countries, such as the East Asian ones. In addition, the Indonesian government is considering the negotiation of trade agreements with the USA. One of the concrete bilateral trade agreements that have been completed recently is the agreement with China that produced the ratification of the ASEAN-China Free Trade Agreement (ACFTA) in 2002.

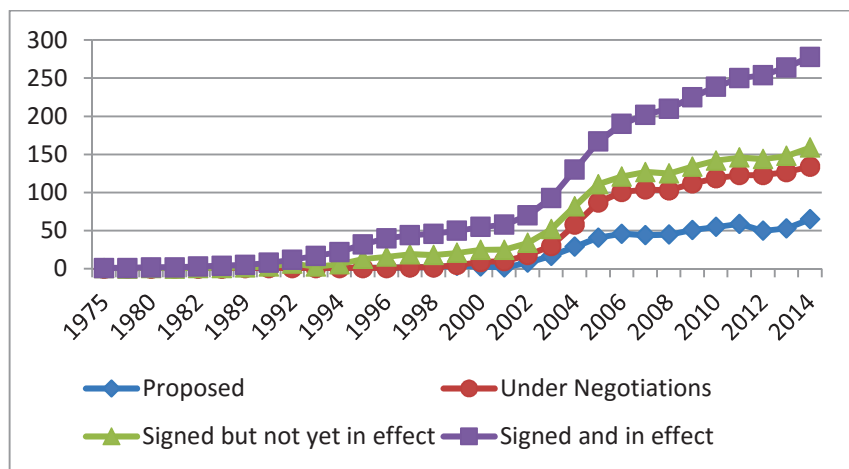
All countries have increasingly felt the benefits of Free Trade Agreements (FTAs), demonstrated by the growing number of FTAs between countries and regions. The number of FTAs around the world has progressed significantly. Figure 1 shows the tendency of trade agreements established by two concerned countries (bilateral) and those that involve more than two (plurilateral) for the years 1975-2014. Figure 1 also displays the remarkable increase in bilateral and plurilateral trade agreements. It is also clear from the figure that far more bilateral agreements have been made than plurilateral ones. Indeed, there were 2290 bilateral agreements and 681 plurilateral agreements, explained by the fact that conducting plurilateral agreements implies a higher level of difficulty than the management of bilateral ones. Figure 2 shows that the number of FTAs will be and have been categorized further into 'Proposed' (still being studied and under discussion), 'Under Negotiations' (consisting of a framework agreement signed and negotiations launched), 'Signed but not yet in effect' and finally 'Signed and In Effect'. Figure 2 also indicates that the agreements within the 'Signed and in effect' category have increased spectacularly since the 1990s, while those in the 'Proposed' category have also displayed noticeable upward tendencies.

Figure 1 Bilateral and Plurilateral Trade Agreements



source: Asian Development Bank (2013)

Figure 2 Free Trade Agreement by Category



source: Asian Development Bank (2013)

Economic theory states that trade liberalization increases efficiency, economies of scale, competition, productivity factors and trade flows. Thus, it ultimately boosts economic growth (Barro and Sala-i-Martin, 1995; Wacziarg, 1997). Although there have been liberal trade reforms in various countries, researchers have found a wide range of specific barriers in some countries which inhibits the growth of world trade (Kalirajan, 1999). For example, Krugman and Elizondo (1996) note that trade flow is inhibited when infrastructure is concentrated in certain locations in an economy; low and inefficient institutions of a country (Wilson, Mann, dan Otsuki, 2004), and problems such as political lobbying (Gawande dan Krishna, 2001) also obstruct the trade flow of involved countries. These barriers cause a trade gap from their potential level through the reduction of trade flows between countries (Kalirajan, 2007). In

this context, in addition to multilateral, regional and bilateral efforts, others should be made to facilitate the country's attempts to overcome such barriers.

The existence of international trade will have wide effects on the economy of a country, both in economic and non-economic terms. International trade will economically affect the aspects of consumption, production and income distribution. This signifies that the trade policies pursued by the country will have very important economic and non-economic repercussions. One of the policies highlighted in this article is the policy of trade liberalization between Indonesia and China. Trade liberalization policies are those that erode the various forms of trade barriers. When fully applied, the commodity flows of trade and investment in the form of capital, goods or services will take place freely between countries, dispensing with tariffs and non-tariff barriers, including protectionist policies. When this situation occurs, there appear to be no alternatives and each country should be able to produce competitive products in order to emerge into the global market.

Liberalization is synonymous with a country's accelerating economic growth. A country is pursuing a liberalization policy when the applied policies give rise to an open and increasingly outward-oriented economy. A policy regime is considered a liberalization policy when the overall level of intervention is on the wane. It can also be characterized by the importance and the role of trade in the economy. Liberalization policies can be achieved through several methods such as a reduction in trade barriers or an enforcement of export subsidies (Santos, 2002b).

Trade liberalization theoretically will lead to efficient trade patterns determined by the principle of comparative advantage; that is the relative prices of production factors (land, capital and labor). The adoption of the comparative of superior principle or comparative costs will guarantee that a country will achieve greater economic prosperity through participation in foreign trade rather than through trade protection.

This is certainly in line with the classic theory of Adam Smith's era which considered free trade as an ideal. Free trade is expected to eliminate the inefficiencies caused by protection. Belief in free trade is primarily based on economic analysis which shows that freer trade generally provides benefits for both countries and the world. It means that free trade will also increase global prosperity. However, it has its advantages and drawbacks and some of the arguments supporting the imposition of protection indicate that a protection policy is still needed in certain cases.

There are many studies that estimate the import demand function for both developed and developing countries. The studies have used the Ordinary Least Square (OLS) method whose data is available in a stationary situation. Several studies of the import demand in developed countries, namely Carone (1996) and Masih and Masih (2000). Pattichis (1999) estimates the import demand function separately.

Some research had investigated the import demand in developing countries, namely Bahmani-Oskooee and Rhee (1997), Bahmani-Oskooee and Niroomand (1998), Mah (1997), Reinhart (1995) and Senhadji (1998). Generally, the conclusion from these studies shows that income and relative prices are significant factors in determining performance. However, the performance of the import-price elasticity tends to decrease. In some cases, the decrease is very substantial. Reinhart (1995) provides interesting results in developing countries where price elasticity is distinct in each of the different areas.

The influence of trade liberalization on import demand and elasticity behavior on export demand during the reform process have been analyzed in various methods. Melo and Vogt (1984) propose two interesting hypotheses in their study of the case of Venezuela. First, they find that when the degree of import liberalization increase, the income elasticity of demand also increases. It means that the relaxation supervision will tend to increase the income elasticity automatically. Second, as regards the results of economic development, the

price elasticity of demand for imports also increase due to the substitution ability of domestic production for imports (import substitution) becoming easier.

However, further empirical evidence based on several hypotheses does not provide certainty. For instance, Boylan and Cuddy (1987) examine two hypotheses for the case of Ireland and find no empirical evidence to support their research. However, Mah (1999) argues that Boylan and Cuddy's conclusion is incorrect because of methodological errors. Mah (1999) examines Melo and Vogt's (1984) findings concerning the process of economic development in Thailand and find the same results. Her findings support the hypothesis that the elasticity of income shows an increase as a result of trade liberalization where the price elasticity is not very responsive to trade liberalization. Santos's (2002a) results show that the removal of trade barriers that are tariff and non-tariff has a strong impact on the growth of imports. It is also concluded that income and price elasticity have a higher value as a result of the trademark.

Besides policy reforms, international trade liberalization was seen as an antecedent for job creation, even if it also eliminated other jobs. Therefore, it is important to determine where both job-creation opportunities and vulnerabilities arise from the application of international trade liberalization. These tendencies will naturally have an impact on employment and working conditions in a country if it has adopted a policy of international trade liberalization. Therefore, awareness and adequate understanding of the impact are important in formulating effective national employment strategies in today's globalized world.

The main propulsion of bilateral free trade groups concerns the trade-liberalization tariffs between the countries involved in the cooperation. The implementation of preferential trading arrangements (PTAs) between the involved countries constitutes a package of trade relations between them; a cooperation aimed at the reduction of the amount of product tariffs between certain countries that signed the agreement. FTA cooperation is the embryo of the

formation of economic integration between the countries involved. The EU is one example of the evolution of a PTA towards an FTA and the subsequent acceleration of economic integration.

During FTA negotiations with trading partners, domestic interests are one of the priorities, so that in the formation process, FTA should consider direct or indirect impacts which will be experienced and observed through the competitiveness of companies in the country, employment, economic growth and government revenue from import duties. Trade liberalization is commonly known as a concept regarding goods and services across the country without barriers. The result of trade liberalization, theoretically, can ensure that the countries involved in this agreement will benefit from trade establishment (trade creation) and trade diversion.

Trade liberalization can be achieved according to three forms of international cooperation. The first is the bilateral agreement set up by the two countries. Second is regional cooperation, that is, a grouping of countries formed from the equation of geography, language, history and other factors. The last form is a multilateral trade agreement, the trade agreement undertaken by many countries. The advantages of the multilateral system are that the rules are more transparent, equitable and valid to all countries. However, the full implementation of multilateral agreements is difficult as it involves a multitude of countries. Thus many countries prefer to form bilateral and regional agreements on free-trade cooperation to expand trade and strengthen trans-national economic ties.

There are at least three main driving factors behind a country's international trade and its willingness to further establish free-trade agreements. The first is the advantage of the exchange between the countries involved. The second regards production, as a manufacturer has greater incentive to produce once he is no longer limited to the domestic market *alone*, but has the possibility to sell excess production

on the international market. Thirdly, in terms of consumption, domestic consumers have greater choice thanks to the presence of imported goods on the domestic market. This situation may have an impact in terms of more competitive prices, which are likely in turn to increase consumer surplus. Furthermore, the driving factor is the focus on producing goods and services in accordance with the comparative and competitive advantages of a country. A country does not have to produce all the goods required by domestic consumers. It can produce those based on its intrinsic superiority and import those it is unable to produce. With this kind of specialization, the world in general can raise total world output with the same amount of resources while continuing to increase economic efficiency. The main driving factor is the emergence of technology transfer through the inclusion of products from countries with more advanced technology.

In the middle of the 1980s, preferential trading arrangements (PTAs) developed as a complement to international cooperation. In contrast to international cooperation, a PTA involved two or more countries. Based on the theory of the PTA as described by Kemp (1964) and Vanek (1965), the impact of two or more countries that make up a customs union (common external tariff) is growing prosperity of the countries which are members of the union without causing a decrease of prosperity of those countries outside the union. This is evidenced in a study conducted by Ohyama (1972) and Kemp and Wan (1976). The pattern of a further-developed PTA is one involving the removal of trade barriers rather than the setting of a common external tariff, an arrangement known as an FTA. Some FTAs that have been running are the North American Free Trade Area (NAFTA), European Economic Area (EEA), African Free Trade Zone (AFTZ) and South Asia Free Trade Agreement (SAFTA).

Viner (1950) measured the impact of trade liberalization in a cooperation agreement between countries by comparing the positive and negative effects of the liberalization, in other words comparing the effects of what happens after the country has established FTA agreements. The positive effect is trade-liberalization-borne trade

creation, where a shift of consumption takes place from high-cost domestically-produced goods towards imported, lower-cost products produced by partner countries. Meanwhile, the negative effect happens when there is trade diversion, that is, a consumption change from imported products that are low-cost (generated by non-members) to imported products that are high-cost (which are produced by the cooperation partner countries in the FTA).

The negative effects may occur due to differences in tariffs applied to partners and non-partners which change the direction of the trade tendencies towards a decrease in the trade activities with non-partner countries (Viner, 1950). The negative effects will impact the decrease due to changes in the consumption of the product towards the relatively high-cost products which are imported from partner countries. However, theses on these two effects have not been proven in studies conducted by Lee and Shin (2006), who conclude that the decrease in trade between members and non-members of the RTA does not happen significantly. In some of the regional trade agreements (RTAs), the trade relations between member and non-members countries have even increased.

Furthermore, trade relations between countries (bilateral, regional or multilateral) do not necessarily sit easily with the various interests of a country, such as that of protecting the interests of domestic producers by imposing high import tariffs on foreign manufacturers. Tariff determination has an influence on the balance of output and prices. The economic implication of the existence of these barriers is the higher price of imported products compared to that of domestic products, with the ultimate result of decreased demand for goods from abroad.

The Doha Round in World Trade Organization (WTO) aims to remove trade distortions in the international trade regime so as to boost world trade. However, given the slow

progress of the Doha Round in the WTO, many developed and developing countries have moved towards regionalism or bilateralism in order to encourage development and economic growth. This can be seen from the numerous RTAs whose number has been growing rapidly since the early 1990s. On January 15 2012, approximately 511 RTAs had been notified at the General Agreement on Tariffs and Trade (GATT) / WTO; of which 319 were running. Furthermore, based on data from the Asian Development Bank (ADB), the number of Free Trade Agreements (FTAs) in the world had reached 250 in January 2012, whereas the number in 2000 was only 53. Meanwhile, regarding the FTA classification based on bilateral and plurilateral agreements, in 2000, there were only 46 bilateral agreements and 7 plurilateral agreements, whereas in 2011, there were 185 bilateral agreements and 65 plurilateral agreements.

One of the most important goals of the establishment of the GATT in 1947 was to reduce tariffs and non-tariff trade barriers in substance and secure a country's access to the international market. Since then, the reform of trade policy in developing countries has been widely documented as trade reform has become part of an international organization program, the result of increased international commitments (see IMF (1998); UNCTAD (1999, 2000)). In addition, the changes in intellectual thought and empirical evidence generated by research from various countries (using different variables of trade distortions) use the analysis of economic-oriented openness. Moreover, a failure of protection policies in some developing countries is a crucial factor behind trade policy reform.

Indonesia is a developing country that adopts an open economy where the conduct of trade relations with other countries is significant. There is a high level of international-economy traffic with a substantial impact on the economy and on national development. Associated with the region, Indonesia has joined AFTA, signing on January 28, 1992. During its development, cooperation has been widespread with the involvement of other countries including China under the ASEAN China Free Trade Area (ACFTA), and with India through

the ASEAN – India *Free Trade Agreement* (AIFTA). Nowadays, Indonesia has also increased economic cooperation (bilateral, sub-regional, and regional) with various countries in the form of Preferential Trade Agreements (PTA), and FTAs with several countries and regions. Indonesia has been involved in as many as 20 trade-agreement initiatives since January 2012, both in the process of study and running negotiations. One of the more comprehensive RTA economic cooperations which have been in the spotlight, both in Indonesia and abroad, is ACFTA. This is an agreement between the countries of ASEAN and China to create a free-trade area by eliminating or reducing trade barriers of goods, both tariff and non- tariff, improved market-access services, investment terms and provisions, as well as an increase in aspects of economic cooperation to promote economic relations between the ACFTA countries, thereby improving the prosperity of the people in ASEAN and China. Indonesia's positions in trade agreements are bilateral and plurilateral. Both can be seen in Table 1 below:

Table 1 Bilateral and Plurilateral Agreements Conducted by Indonesia

Proposed (Under Consultation and Study)	Framework Agreement Signed	Negotiations Launched	Signed but Not Yet in Effect	Signed and in Effect
ASEAN-Hong Kong, China Free Trade Agreement	Trade Preferential System of the Organization of the Islamic Conference	ASEAN-EU FTA	Preferential Tariff Arrangement-Group of Eight Developing Countries	ASEAN Free Trade Area
ASEAN-Pakistan FTA		India-Indonesia Comprehensive Economic Cooperation Arrangement		ASEAN-Australia and New Zealand FTA
Comprehensive Economic Partnership for East Asia (CEPEA/ASEAN+6)		Indonesia-Australia Comprehensive Economic Partnership Agreement		ASEAN-India Comprehensive Economic Cooperation Agreement
East Asia FTA (ASEAN+3)		Indonesia-European Free Trade Association Free Trade Agreement		ASEAN-Japan Comprehensive Economic Partnership
Indonesia-Chile FTA		Regional Comprehensive Economic Partnership		ASEAN- China Comprehensive Economic Cooperation Agreement
Indonesia-Peru FTA		Korea-Indonesia FTA		ASEAN-Korea Comprehensive Economic Cooperation Agreement
Indonesia-Turkey FTA				Japan-Indonesia Economic Partnership Agreement
China-Indonesia FTA				Pakistan-Indonesia FTA
US -Indonesia FTA				

source: Asian Development Bank (2013)

Bilateral trade relations between Indonesia and China have grown rapidly, especially since the signing of the Strategic Partnership between Indonesia and China in 2005 and the enactment of the Early Harvest Program on January 1, 2004 (0% in 2006) and have continued to grow more rapidly. Indonesia-China trade rose sharply from just US \$ 4.8 billion (2000), to US \$ 12.5 billion and finally reached a peak of US \$ 49 billion (2011). The rapid development in trade relations between Indonesia and China is attributable to two main driving factors which are: the process of economic liberalization in Indonesia since the economic and monetary crisis in 1997-1998 and the political will of both countries to establish economic cooperation in a bilateral context through a strategic partnership agreement in 2005 and a regional one in the form of the ACFTA agreement in January 2010. The latter has been effectively and fully run.

Therefore, it is not surprising if the attainment of the mutual target to improve trade relations between Indonesia and China amounted to US \$ 50 billion in 2014 as mandated by President Susilo Bambang Yudhoyono. However, behind the success in improving trade relations between Indonesia and China, the strategically-crucial question is currently how the impact of the spectacular increase in RI - China trade impacts at the level of social prosperity and the competitiveness of Indonesian exports.

Various studies of the impact of liberalization and ACFTA trade with China have been carried out by previous researchers using both quantitative and qualitative methods. In general, these studies indicate two things: positive impacts in terms of the economic benefits for the involved country and negative impacts as a result of inter and intra-industry competition of weak comparative-advantage countries. General positive impacts (within the scope of the ASEAN region and China) in the form of economic benefits include an increase in output (Park *et al.*, 2008); an increase in exports (Tambunan, 2007); an increase in long-term productivity (Park *et al.*, 2008) and benefits of specialization. The negative effects can include

a decrease in GDP and an increase in the trade deficit (Tong and Keng, 2010). There are various controversial views, both at the theoretical and empirical level, as described above.

The main empirical analyses in this thesis can be formulated in three main research questions: How does trade liberalization affect the performance of export-import in Indonesia? Does globalization affect fiscal revenue, in this case, the receipts of import duties? and How does trade liberalization affect poverty and inequality in Indonesia?. This thesis consists of four main chapters which will investigate the impact on economic of free trade agreements or trade liberalization between Indonesia and other countries.

In the **first chapter**, we discuss the overall importance of Regional Trade Agreements (RTAs), the theory of RTAs and economic integration and also provide an overview of trade agreement types as well as variations among RTAs. The motives behind the formation of economic integrations or RTAs are also discussed in this chapter. There are political motives beyond economic ones and further motives which explain a region's or a country's willingness to build trade agreements. The effects of liberalization will also be the subject of discussion in this chapter in common with and in particular from the revenue side. This chapter concludes by discussing regional trade agreements among ASEAN countries

In the **second chapter**, we analyze the effect of the implementation of trade liberalization policies on the rate of growth in the volume of Indonesian exports and imports. In this chapter, we examine the effect of variable income, relative prices, and export-trade liberalization policies and import-growth fluctuations. Trade liberalization is measured by indicators of export taxes and costs and also a collection of dummy variables that indicate the beginning of the implemented liberalization policies.

In the **third chapter**, we examine how trade liberalization can affect import duty revenue which is one of the international trade-tax revenues. Import duty is one of the international tax receipts listed in the Indonesian state budget. The role of import duty as a function of the reception has a strategic significance. On the other hand, the government must

also be careful in determining the amount of duty because it can affect the economic itself. This study will explore the determinants of import duty revenue factors, in particular during the period of trade liberalization. The economic crisis is also analyzed because Indonesia entered such a period in 1998.

Finally, in the **fourth chapter**, we provide a detailed investigation of the relationship between trade liberalization, poverty and inequality in Indonesia by using provincial panel data from urban-rural regions. We use three models to analyze these relationship: an income model, a Gini model and a poverty model. All three models use a variable income, Gini ratio, infrastructure, investment rate, the non-state sector development, openness, real poverty line, poverty incidence and variabel dummies including an urban-rural dummy and a dummy crisis. The results were analyzed using a simultaneous equations model and a data panel viewing the relationship between liberalization, poverty and inequality in Indonesia.

CHAPTER 1 THE REGIONAL TRADE AGREEMENT: THEORY AND EVIDENCE

1.1 The Importance of Regional Trade Agreements (RTAs)

Trade liberalization is already a worldwide phenomenon that any country, as a member of the international community, has difficulty avoiding. This phenomenon can be considered in terms of the formation of free trade blocs, which, according to the World Trade Organization (WTO), have reached almost 250 in number. Free Trade Agreements (FTAs) can be formed upon a bilateral basis, for example between the United States and Singapore, the United States and Chile, Japan and Singapore and regionally such as the ASEAN Free Trade Area (AFTA), the North America Free Trade Area (NAFTA) and the European Union (EU).

The rise in the establishment of the FTAs has been caused by the lack of success at the WTO Ministerial Meeting in Seattle in 1999 and the deadlock in the development of WTO negotiations until now, especially as regards the stagnant process of establishing a deal in agricultural products. A number of countries race to set up free trade agreements because of worries concerning the impact of the loss of a market they control to countries within an FDA partnership (trade diversion). For example, if Japan and Thailand made an FTA, then the market share that Indonesia previously enjoyed in the Japanese market will henceforth be enjoyed by Thailand. This happens because between the FTA partners, the two-way flow of merchandise will be barrier-free and tariff-free, while trade with countries without the FTA may be exposed to a higher rate.

These tariff incentives will be enjoyed by the exporters because of increased competitiveness, by importers due to the possibility of making greater profit margins and by consumers because prices are lower. Tariff incentives are key drivers in the increase in the flow of goods from one country to another. In the FTA negotiations with trading partners, domestic interest is one factor that gains priority attention, so that in the process of formation of the FTAs, direct and indirect impacts should be considered by taking into account, among

other elements, the competitiveness of companies in the country, employment, economic growth and government revenue from import duties, even though the value is not too significant.

Regional Trade Agreements are defined and regulated in Article XXIV of GATT 1994 / WTO that provides safeguards regarding the establishment of a joint customs territory or a single customs (customs union) and the FTA. FTAs or trading blocs have made a significant contribution to the progress of multilateral trade liberalization in the WTO as "the first best choice", regional FTAs as "the second best" and bilateral FTAs as "the third best" for a member state, representing the first step (playing field) prior to solidifying its position in multilateral FTAs. In general, members gain confidence in regional FTA negotiations which later evolve into a bilateral FTA and through this experience, ultimately bring an FTA to the multilateral WTO forum. Negotiations between members of a regional FTA, for instance AFTA member states with 10 different opinions, are far easier to conduct than reaching decisions at the WTO forum with nearly 150 member countries with their respective positions.

FTAs have an impact on expansion of world trade, the elimination of trade barriers and they aim to boost trade among members. The most important agreement in free trade is the removal of tariff and non-tariff barriers among the members, although as stipulated in article XXIV of GATT / WTO, member states should not increase trade barriers to non-member countries. For example, Indonesia imposes tariff duties at 20 percent for 'A' products. With AFTA, Indonesia lowered the tariff to 0 percent for fellow members, but with non-member countries, 'A'-product tariffs should not be higher than 20 percent.

The RTA is not a new topic of discussion as its presence has become so important in the economic development and the politics of a country. RTA developments began in the 1990s and over time, certain typical characteristics of an RTA have emerged. Compared with

the above, the latest developments of modern RTAs tend to indicate little discrimination against non-members, including in the wider economic sector, and an emphasis on the problem of trade barriers, rather than on the tariff issue. With the discriminatory nature of regionalism today, the RTA is becoming a phenomenon of increasing importance because of the rising number of members, wider scope and higher cross-sector membership. Indeed, the RTA has become so complex that it is a challenge itself in the multilateral trading system. Economic observers of the problems of trade agreements say that the presence of RTAs and the complexity of the issues surrounding them can be likened to a 'spaghetti bowl'. This term taken from culinary vocabulary has been widely used and at the Asian RTA level, it is often termed the 'noodle bowl'. There are also concerns that the RTA adds to the confusion faced by decision makers, administrators, and businesses which constitutes a threat to the global trading system.

Not all apparent RTA deals have economic and political significance. Some RTAs showing agreement among the member countries and announced to the public as deals, were in reality ignored by member states themselves. They were effectively "deals on paper" in which all members were granted rights which were later violated, featuring significant promises but little implementation. It is therefore important to learn the contents of an RTA agreement and how they are interpreted and implemented.

1.2 The Theory of RTAs and Economic Integration

The traditional theories in PTA literature especially investigate the static effects of PTAs. They are focused on the static welfare effect of PTAs, which was pioneered by Jacob Viner's paper "The Customs Unions Issue" in 1950. Static measurement of the welfare effect of PTAs can be traced back to a specific case in Viner's 1950 paper, which makes an important distinction between trade-creating and trade-diverting custom unions. A trade-creating union allows its member countries to replace the high-cost domestic output by lower-

cost output produced abroad, resulting in efficiency that improves the welfare of member countries and the world. On the other hand, a trade-diverting union allows high-cost imports from one or more union members to replace lower-cost imports from countries outside the union, leading to inefficiency and a decline in economic welfare for the importing countries inside the union and the world. In Viner's own words:

"...where the trade-diverting effect is predominant, one at least of the member countries is bound to be injured, the two combined will suffer a net injury, and there will be injury to the outside world and to the world at large." (Viner, 1950, p. 44)

This analysis shows that trade creation and trade diversion have opposite welfare implications and the net effect will depend upon which of these two effects dominate. However, Viner did not unequivocally establish the net welfare effect of RTAs (Pal, 2011).

Johnson (1960), generalizing Viner's idea to PTAs, expresses a similar opinion, stating that preferential reduction of tariffs among members of PTAs may or may not be beneficial for each of the member countries, and in some cases for the world. CSIS (2014) shows the net effect is ambiguous for the member country that grants the tariff concession, as it is for the other countries in the PTA and the world as a whole, for it is unclear which effect will predominate, trade diversion or trade creation. Meade (1955) and Lipsey (1957) show that if PTAs are trade-diverting, they may improve members' welfare since a benefit from less distorted consumption can outweigh the loss of production efficiency. Meade (1955) provides the first theoretical welfare analysis of trade blocs in a general equilibrium model, which focuses on the latter question. Meade's model has since been extended to answer both questions by significant contributions from Lipsey (1957), Mundell (1964), Vanek (1965) and Corden (1972). Of these contributions, only Viner and Vanek explicitly distinguish trade blocs as customs unions (CUs) involving internal free trade and a common external tariff. Almost all other contributors use the term 'custom union' more loosely, involving internal

free trade but with members retaining their original tariff levels against non-members (Snorrason, 2012). Corden (1972) introduces scale economies and shows that the concepts of trade creation and trade diversion are still relevant, but there are additional effects stemming from cost reduction by production specialization.

The establishment of PTAs also influences terms of trade among countries. Mundell (1964) shows external tariffs are unchanged before and after the establishment of a PTA. The PTA may have the beggar-thy-neighbor effect by improving terms of trade for member countries vis-à-vis non-members. This is because, as long as goods are substitutes, the increased trade among member countries will decrease demand for goods originating outside the PTAs, and the world price of those goods will have to fall in order to clear the market (Mukunoki, 2005). Winters and Chang (2000) and Chang and Winters (2002) show evidence that the creation of a PTA is associated with declines in the prices of non-members' exports to the region.

Viner's seminal paper had led to debates on the set of criteria that determines whether a specific union would be largely trade-creating or trade-diverting. Wonnacott and Lutz (1989), Summers (1991) and Krugman (1991) assert that a union between natural trading partners would be largely trade-creating, and thus welfare-improving. According to this point of view, countries that are natural trading partners are located in close geographical proximity with a large volume of trade with each other. However, as pointed out by Bhagwati (1993), there is an earlier paper by Lipsey (1957) that lists welfare-improvement criteria in one particular model that are vastly different to the hypothesis asserted by Wonnacott and Lutz (1989), Summers (1991) and Krugman (1991). An extensive critique on the natural trading partner hypothesis is found in Bhagwati and Panagariya (1996). First, the paper demonstrates that union between two countries located in close proximity could be less beneficial than union between two countries not located in close proximity. Second, the paper points out that there is a possibility of negative relationship between volume of imports of one country

and its gain from preferential liberalization. Third, the paper discusses the possibility of constructing models in which the initial volume of trade has no relationship to welfare effects of a PTA. The welfare effects of PTAs depend on the volumes of trade actually diverted, which need not be proportional to initial trade shares. Fourth, the paper indicates, via some examples of trade between USA and India, USA and Mexico and USA and Canada, that the volume-of-trade assumption in deciding a natural trading partner is neither symmetric nor transitive.

Additionally, Kemp and Wan (1976) propose a way of designing a PTA that can benefit at least one member, without harming other members or outside parties. Kemp and Wan (1976) demonstrate that if two or more countries that form a union set a common external tariff vector such that trade with countries outside the union remains at its pre-union level, the union between those countries would result in welfare that is superior to the initial equilibrium for the union as a whole and the world. Extending the principles for unions in Kemp and Wan (1976) to the case of FTAs, Panagariya and Krishna (2002) demonstrate that by freezing their net external trade vector through a common external tariff and eliminating internal trade barriers, the union and the world cannot be worse off than before.

Leaving aside the Vinerian approach of capturing the effect of PTAs, an extensive margin effect emerges in "new new trade theory". It is important to analyze extensive margin effect as it plays a crucial role in the development of economic welfare in a country. Romer (1994) argues that the welfare gains of tariff liberalization can be larger when the gains at the extensive margins of trade dominate. Hummels and Klenow (2005) propose a quantifying measure of intensive and extensive margin.

The literature on ex-ante evaluation of PTAs is divided into two groups. The first group of literature is devoted to descriptive studies via trade indicators. The second group focuses on simulation methods to evaluate the likely impact of PTAs. Simulation methods of ex-ante evaluation are carried out in partial or general equilibrium settings. Each of these

methods has its own advantages and drawbacks, but can be used complementarily to each other in the following process: draw inferences from trade indicators, use partial equilibrium simulation methods to analyze potential effects of PTAs at the sectoral level, and finally use the general equilibrium simulation methods to analyze the potential effects of PTAs on the whole economy.

Evaluation via trade indicators is made by making inferences from trade indicators in order to pick up potential effects of joining a PTA. While this method is simple to implement, the interpretation is challenging and it fails to quantify the effect of PTAs on trade, production, consumption or welfare. The end result is that trade indicators can be meaningless at least and misleading at most in the event of inappropriate classification of data. This study looks at four trade indicators, namely Revealed Comparative Advantage index (RCA), Bilateral Revealed Comparative Advantage index (BRCA), Trade Complementarity Index and Grubel-Lloyd Index of intra-industry trade.

Liesner (1958) was the first person who introduced the measurement of revealed comparative advantage, which was later developed by Balassa (1965). Balassa (1965) reveals that comparative advantage is quantified as a ratio of a country's share of the commodity in the country's total exports to the share of world exports of the commodity in total world exports. The Balassa (1965) and Balassa (1977) studies reveal the comparative advantage measure in manufacturing across industries. There are also many critiques on the RCA index. Bowen (1983), Volrath (1991) assert that it does not really match the original Ricardian idea of comparative advantage, Hinloopen and Van Marrewijk (2001), De Benedictis and Tamberi (2004) demonstrate that it has poor empirical distribution characteristics, while Unido (1982) and Yeats (1985) point out that it has a poor ordinal ranking property. The BRCA index is also used to assess competitiveness of an export commodity in a partner country. The BRCA index used in the study is a modification of Balassa's RCA index.

In Schiff (2001), it is argued that countries with strong trade complementarity are more likely to gain benefits from an FTA. To measure the level of trade complementarity between two countries, the Michaely index for trade complementarity is used in this study. In Michaely (1996), trade complementarity between home country and partner country is measured by indices of compatibility between a home country's imports/exports and the potential partner country's exports/imports. The collection of essays in Francois and Reinert (1997) provides thorough analytical discussion of ex-ante simulation methods. One method in partial equilibrium setting is the World Bank SMART simulation models, discussed extensively in Jammes and Olarreaga (2006). In general equilibrium setting, computable general equilibrium models such as the Michigan model in Deardorff and Stern (1986), the McKibbin-Sachs Global model in McKibbin and Sachs (1991), the G-Cubed model in McKibbin and Wilcoxon (1992) and McKibbin and Wilcoxon (1999), the Multi-Regional Global Trade model in Harrison, Rutherford and Tarr (1996) and the Global Trade Analysis Project or GTAP in Hertel (1997) are some of the best-known CGE models. Surveys of assessments of PTAs using general equilibrium models can be found in DeRosa (1998) and Robinson and Thierfelder (2002). Scollay and Gilbert (2000) also carried out a survey of CGE assessments of Asia-Pacific Economic Cooperation (APEC).

Tinbergen (1962) proposes that bilateral trade flows between any two countries follow the gravity equation, leading to the wide use of the gravity model for ex-post evaluations of PTAs. In the gravity model, trade between two countries has a positive relationship with the countries' sizes, and is inversely related to the distance between the two countries. Some modifications of gravity models include the addition of explanatory variables to this model.

The gravity model is derived theoretically as a reduced form of a general equilibrium model of international trade in goods. Baler and Bergstrand (2001) derive it from a model of monopolistic competition. Feenstra, Markusen and Rose (2001) derive it from a reciprocal dumping model of trade with homogeneous goods. Deardorff (1998) derives it from a model

of perfectly-competitive markets. Evenett and Keller (1998) show empirically that the monopolistic competition-based theory of trade fits well with the trade flows between industrialized countries.

To evaluate the impact of a PTA, a widely-accepted approach is to add PTA-specific binary dummy variables to the augmented gravity model. Aitken (1973) adds one dummy variable to his gravity model in order to capture the 'gross trade effect' of Balassa (1967). Bayoumi and Elchengreen (1995) and Frankel (1997) add two dummy variables for each PTA to capture the separate effects on intra-bloc and extra-bloc trade. The 'net trade effect' in Viner (1950) can be obtained by combining these two dummy variables to assess whether an increase in intra-bloc trade has come at the expense of lower extra-bloc trade. Soloaga and Winters (2001) add three dummy variables for each PTA, to distinguish an intra-bloc effect, an extra-bloc effect on imports and an extra-bloc effect on exports.

The gravity model includes a number of variables that determine the normal pattern of trade between two countries. Previous summaries of these variables can be found in Frankel (1997) and Oguledo and MacPhee (1994).

1.3 Types of Regional Economic Integrations

Regional economic integrations became widely popular after the Second World War. The main characteristic of these integrations is that a group of countries abolish all trade barriers among the integrated countries in order to achieve free international trade on a regional rather than a global scale. The following types of economic-integration agreements, presented in Table 1.1., can be distinguished:

- Preferential trade agreement (PTA): in this form of agreement, there is neither a general reduction on internal tariffs nor a common external tariff. Tariffs between the members of

the agreement are reduced (or eliminated) only for some goods or services, sometimes unilaterally.

- Free trade area (FTA): member countries eliminate internal tariffs on regional trade without any common trade policy relative to other countries. However, it is possible for one country to import all of a certain good that the other country previously imported, only to turn around and trade it to another country in its free trade area. This problem is termed trade deflection and it requires the use of certificates of origin for goods crossing the border.
- Customs union: like in a free trade area, member countries abolish internal tariffs on free regional trade and adopt a common external tariff against the rest of the world.
- Common market: in this type of economic integration, member countries allow not only the free movement of goods and services but also the free movement of factors of production such as labor and capital.
- Economic and Monetary/Political Union: an economic union can be considered as an economic integration comprising a common market and common economic policies along with a supranational power that makes binding decisions, lessening the power of member countries to make their own decisions much further (Krueger,1995). The economic union provides grounds for the creation of monetary union and the adoption of a single currency in the integrated region.

A customs union (CU) is a form of trade agreement under which certain countries preferentially grant tariff-free market access to each other's imports and agree to apply a common set of external tariffs to imports from the rest of the world (Andriamananjara, 2011). Early examples of customs unions include the Zollverein, formed in 1834 by several German principalities and the 1847 customs union between Moldavia and Walachia, a precursor to the

creation of Romania. Customs unions have two types of economic effects: static effects and dynamic effects. Static effects include the *trade-creation* effect and the *trade-diversion* effect.

Table 1.1 Types and characteristics of economic integrations

Strength of integration ↓	L evel of Integration	Reduction of tariffs on intraregional trade	The Elimination of tariffs on intraregional trade	Common tariffs for the rest of the world	Free factor mobility	Coordination of economic policies and harmonization of standards
	PTA	yes				
	Free Trade Area (FTA)		yes			
	Customs Union		yes	yes		
	Common Market		yes	yes	yes	Coordination desirable
	Economic and monetary Union		yes	yes	yes	Coordination desirable

Source: UNCTAD (2007), *Trade and Development report*, 2007

1.4 Why Countries opt for Regional Trade Agreements

Below are some of the reasons why a country should establish an RTA agreement with other countries (David, 2010; World Trade Organization, 2011):

1.4.1 Economic Motives

1.4.1.1 Intensification and Expansion of the Market

There are several economic reasons why countries opt to form PTAs, some that mirror the motives discussed above and others that are sometimes referred to as “non-traditional” motives (Fernandez and Portes, 1998). These are briefly reviewed below. They include, but are not limited to, increasing market size, increasing policy predictability, signaling openness to investors and achieving deeper commitments. Increasing market size can be a reason for establishing PTAs since it enables firms from signatory states to exploit economies of scale

and gain a relative advantage over excluded competing firms. In addition, preferential access to a larger market may increase a country's attractiveness as a destination for foreign direct investment (FDI). Both reasons are particularly valid for small economies, which may help to explain why these countries agree to make concessions on other more controversial issues, such as intellectual property rights or environmental standards, when negotiating PTAs with large economies.

Better access to foreign markets also makes a country a more attractive investment site. This is especially the case given the preferential nature of the market access. In many cases, RTAs do spur investment. In fact, serious negotiations themselves can sometimes lead to increased investment before negotiations are final, as was the case with Mexico during the NAFTA negotiations. But again, because not all RTAs have significant economic consequences, this is not universal.

Another reason that RTAs can increase investment is that they may include specific investment provisions designed to make foreign investors feel secure: prohibitions on expropriating property without due compensation, due process regarding investment disputes (sometimes including arbitration and adjudication of disputes outside shaky domestic legal systems), equal treatment between foreign and domestic investment, and reduced bureaucratic hurdles. Another reason for RTAs is their use as a shield against purported abuse of trade remedies such as antidumping measures, countervailing duties and safeguards.

Lu and Yu (2015) indicate that the distribution of firm markups becomes flattened after trade liberalization. They also contribute to recent literature on gains from trade. While these channel—change in markup dispersion—through which free trade can benefit a nation. However, calculation of overall gains from trade (and through different channels, including the change in markup dispersion) requires a structural approach.

1.4.1.2. Competitiveness in World Markets

Increasing competitiveness in world markets can sometimes be enhanced through regional production strategies. Central to this goal is to often use cheap labor - as the US does with Mexico and as western Europe does with Central Europe, Turkey and North Africa. The model for this “integrated regional production” is to use the capital-intensive high-skill portion of production in a developed nation and the lower high-skill portion of production in a developed nation where wages are less expensive. In other words, RTAs may enhance companies’ ability to “source globally, produce regionally, and sell locally”.

1.4.1.3. Economic Stability

Unstable economies hope to gain stability by forming RTAs with more stable economies. Typically, this means developing countries forming an RTA with developed countries, although there has been an increasing trend to see developing countries form RTAs with other developing countries. Some of the sought-after stability may come from increased market access and investment, and some may come from having a larger economic pool; larger bodies of water take longer to change temperature when the weather changes and thus fluctuate less than smaller bodies of water.

1.4.1.4. Other Economic Motives

Related to the time-inconsistency issues addressed above, a trade agreement may also be signed to reduce uncertainty on future trade policy, thus sending an important signal to investors. Since future administrations might have policy preferences that differ from those of the current administration, a government may sign a PTA in an attempt to lock in its policies (for example, a pro-open trade policy) and to diminish the likelihood that they might be reversed. In this way, the government addresses not so much the issue of policy credibility as the issue of policy predictability (Fernandez and Portes, 1998).

Economic analysis often overlooks the simple fact that trade policy is decided in a political environment, and governments may face incentives that differ from simple welfare considerations. However, some recent economic literature has emphasized the role played by special-interest groups in trade-policy determination. Simply put, interest groups lobby to influence government decisions and, in turn, governments trade off the welfare effects of their trade-policy choices (e.g. signing or not signing a PTA) with the political support of special interests. In this political context, the choice to sign a preferential agreement may be driven by the interests of an organized lobby rather than by social welfare considerations (Grossman and Helpman, 1995).

A final argument for signing a PTA relates to the need to achieve a deeper form of integration which goes beyond traditional trade (i.e. border) measures such as tariffs (Lawrence, 1996). This deeper integration may require institutions and levels of policy coordination that can be more easily achieved at the regional than at the multilateral level.

Maggi and Rodriguez-Clare (1998) identify two reasons why a government may want to commit to a PTA: first, to minimize the costly long-term distortions involved with protecting a politically-organized sector, where the country has no comparative advantage and is unlikely to gain it in the future. Secondly, to avoid a costly delay in the adjustment process of the declining sector relying on government protection.

1.4.2 Political Motives

The creation of PTAs cannot be fully understood without considering the political context within which they are formed. Political science has provided additional explanations for why states might engage in PTAs, focusing in particular on the role of political integration, domestic politics, forms of governments, institutions, diplomacy or the influence of power and ideas. Some of the most important “political” arguments for PTAs are discussed briefly below. Preferential trade agreements have long been seen as playing a key role in

regional political integration. Perhaps the best modern example was the formation of the European Community (EC) in the 1950s which, at the time, was the most important PTA in the world and attracted considerable attention from political scientists. Initially, “functionalist” scholars, inspired by the logic of integration, emphasized the importance of bureaucratic actors as key drivers of integration, as well as the process by which national elites transferred loyalties to a supranational level (Mitrany, 1943; Haas, 1958; Sandholtz and Zysman, 1989). It was postulated that a policy spill-over effect would incrementally drive integration from “low politics” (trade integration) to “high politics” (political integration). This “functionalist” school of thought was later challenged by political scientists who marshalled empirical evidence that cast doubt on the extent of spill-overs and helped explain the stagnation in the European integration process. Proponents of an “intergovernmentalist” theory argued that national preferences were more relevant in shaping the pace and content of political and economic integration, and questioned whether there had been a significant transfer of control from member states to Community institutions (Hoffmann, 1966; Moravcsik, 1998).

To help explain the increasing number of trade agreements elsewhere in the world, political theorists first attempted to apply the European-integration models. However, the limits soon became obvious. Trade integration outside Europe proceeded according to different patterns and concomitant political integration was lacking. Additional strategic explanations emerged. These included a desire to increase influence in international negotiations by pooling resources (e.g. the Caribbean Community, see Andriamananjara and Schiff (2001)), or the goal of resisting the threat of communism in South-East Asia by strengthening cooperation among like-minded governments (e.g. the Association of Southeast Asian Nations). For an overview, see Ravenhill (2008).

Existing research has shown that democracies are more likely to form PTAs among themselves (Mansfield *et al.*, 2002). One explanation is that democratic governments use

trade agreements as a signaling device vis-à-vis domestic constituents that they are implementing sensible policies. Related research looks at how governments calculate the political costs and benefits of PTAs, and how voters hold their political leaders accountable. The work by Mansfield *et al.* (2007) suggests that a country's decision to enter into a PTA is related to the number of internal veto players (i.e. lawmakers or parliamentarians). In addition, Mansfield and Milner (2010) show that the number of veto players in a country affects the transaction costs of an agreement. As the number of veto players increases, ratification becomes less likely. While veto players diminish the likelihood of entering PTAs, the regime type (democracy) affects the ratification rate positively. Mansfield and Milner (2010) argue that PTAs can serve as a strategic tool vis-à-vis voters. In other words, PTAs can act as a credible signal that governments can use to pursue trade objectives preferred by a majority of voters rather than by special interests. According to this view, the spread of democracy since the 1980s, especially across the countries of Latin America, Asia, and Central and Eastern Europe, may help explain the proliferation of PTAs.

Gowa and Mansfield (1993) argue that trade integration stimulates trade flows between two countries, leads to a more efficient allocation of resources and thus frees up resources for military use. The increasing wealth and power of member countries should be of concern to excluded countries. An agreement between two countries may thus force other pairs of countries to follow suit, with the aim of retaining their current relative position (Gowa and Mansfield, 1993). In a similar vein, the design of PTAs is also indicative of power relations. Stronger states can more easily dictate the terms of agreements in a bilateral or regional context. Other diplomatic and foreign policy considerations may influence the decision to form PTAs. For instance, some states use PTAs to reward allies and to reinforce key alliances. In this view, PTAs are an active part of foreign-policy making (White, 2005; Rosen, 2004; Higgott, 2004; Capling, 2008).

PTAs might also serve as “diffusion mechanisms”, either directly, in the form of coercion, or more indirectly, in the form of learning. For example, a growing body of work treats the EU as a “conflicted power” (Meunier and Nicolaidis, 2006), which uses its market power (i.e. access to the EU's single market) to coerce weaker powers, including former colonies, into accepting new types of trade arrangements (Farrell, 2005). Examples of these are the European Partnership Agreements with the African, Caribbean and Pacific group of states. Others consider that the European Community provided an example for economic integration among countries in Latin America and Africa in the 1960s (Pomfret, 2001), demonstrating how the perceived success of trade arrangements “teach” others to adopt similar policies (Krueger, 1997).

Finally, there may be a direct or indirect relationship between the formation of PTAs and the multilateral system, either reflecting a lack of progress at the multilateral level or a strategy to improve states’ leverage in the WTO. Gridlock or stagnation in multilateral negotiations, for example, may create incentives for states to pursue preferential trade liberalization, and encourage exporters to lobby their governments for PTAs (for example, see case studies in Capling and Low (2010), where policy communities note both the “remoteness” and “slowness” of the WTO). Alternatively, states may sign PTAs in order to increase their bargaining power during multilateral trade talks (Mansfield and Reinhardt, 2003). The drawn-out negotiations in the Uruguay Round, and in the current Doha Development Round, may explain the current proliferation of PTAs.

1.4.3 Other Motives

1.4.3.1 Improving the Bargaining Position in Negotiations

There are two ways in which countries join an RTA to increase negotiating power. The first is by pooling representation. Countries in an RTA can have more leverage in international negotiations than the countries would have separately, assuming the RTA is

sufficiently integrated and cohesive. In fact, it is quite common that poorer countries cannot send permanent representatives to the secretariats of important multilateral organizations such as the WTO or to some other important negotiations. An RTA can help countries' negotiating power by creating an institutionalized framework for coordinating RTA representation at other institutions or in other negotiations. The importance of banding together for greater international bargaining power is particularly true of smaller and poorer states.

Being in an RTA or in ongoing RTA negotiations also creates a degree of enhancement in other negotiations. This occurs as countries in an RTA may be able to claim the RTA as a plausible alternative to other negotiations, should those other negotiations not go well. This may change the negotiating power of the countries, or at least change perceptions about that negotiating power.

1.4.3.2. Bringing together the various strategic objectives

Countries enter into RTAs for reasons having little to do with economic integration. The EU seeks trade agreements with North African and Middle Eastern countries for many reasons, some of which are altruistic. One reason is the hope that stronger economies in North Africa and the Middle East will slow future immigration. The strategic goals that drive RTAs are varied, but it is clear that they are an essential reason that countries seek RTAs.

Ghosh and Yamarik (2004) argues that there is a marked difference in motivation between the RTAs which are initiated and pushed through by the major developed-country governments and the attempts to forge trading blocs within developing countries. According to her, developed countries, particularly USA and EU, are pushing regional trade agreements, under the influence of large capital, to force developing countries to make deeper trade and investment commitments than is now possible multilaterally, given the divisions in the WTO.

1.5 The Effects Issues of Liberalization

1.5.1 The Effects of PTAs in Common

World Trade Organization (2011) declare several studies examine the impact of PTAs and test the traditional theories on trade creation and trade diversion. While this literature is not conclusive, it suggests that trade diversion may play a role in some agreements and in some sectors, but it does not emerge as a key effect of preferential agreements (Freund and Ornelas, 2010). A first branch of the empirical literature analyzes specific agreements and, using different methodologies, reaches mixed conclusions in terms of the net welfare effects of PTAs. For example, a first set of studies focuses on the Canada-United States free trade agreement (CUSFTA). Clausing (2001) finds evidence that the agreement increased US imports from Canada, but did not divert US imports away from other US trading partners. Similarly, the CUSFTA study by Trefler (2004) confirms the finding that trade creation outweighs the trade diversion effect. In contrast, a study of NAFTA concludes that the agreement is, overall, trade-diverting (Romalis, 2007). Romalis uses changes in EU trade over the period to capture the counterfactual (i.e. what would have happened in the absence of the agreement), but finds that the welfare costs of NAFTA are small.

Chang and Winters (2002) evaluate the welfare impact of the Southern Common Market (MERCOSUR) from a different perspective, looking at the effect the customs union (between Argentina, Brazil, Paraguay and Uruguay) has had on export prices to Brazil. They find that Argentina's export prices increased while those of excluded countries declined, suggesting the agreement is trade-diverting and that it has hurt non-members. Finally, Egger (2004) finds that joining a regional trading bloc does not exert any significant short-term impact on trade volumes, but that there is a considerable trade-creation effect in the long run. Hypothetically, removing the European Economic Area (EEA) would account for a 4 per cent reduction of trade within the EEA. A similar estimate for NAFTA yields a reduction of 15 per

cent of trade volume. Mossay and Tabuchi (2015) show that a preferential trade agreement increases the relative wage, the welfare and the terms of trade in the partner countries, where the integration effect dominates, while lowering those in the third country. Klomp and de Haan (2013) investigate, for example, political budget cycles in 65 democratic countries over the period 1970–2005. Fiscal policies are measured by the budget balance and total government spending. The results show that overall globalisation was neither correlated with the budget balance nor with total spending.

Another branch of the empirical literature uses gravity models to infer the trade effects of an agreement. The key question is to what extent PTA partners trade more than would be predicted by standard bilateral trade determinants (e.g. income, geographical proximity, etc.). Magee (2008), for example, uses panel data from 133 countries in the 1980-1998 period and includes several fixed effects to capture the counterfactual: what would happen to trade if there were no PTAs. He finds that the average impact of PTAs on trade flows is small – only 3 per cent – and that, on average, trade creation exceeds trade diversion. In contrast, an earlier gravity-model study covering 130 countries from 1962 to 1996 finds that PTAs have generated a significant increase in trade between members, often at the expense of the rest of the world, suggesting evidence of trade diversion (Carrere, 2006).

Finally, focusing on East Asia, Lee and Shin (2006) find that PTAs in the region are likely to create more trade among members without diverting trade from non-members. Baier and Bergstrand (2007) estimate the impact of PTAs on trade flows, taking account of the “endogeneity” problem – i.e. the possibility that countries join PTAs for unobservable reasons that may be correlated with the level of trade. They conclude that when taking into account the endogeneity of a PTA, the positive impact of the agreement on bilateral flows becomes statistically more robust and five times larger than in estimates that disregard the endogeneity problem. Thus, it appears that countries generally opt for welfare-improving PTAs when there are gains from liberalizing bilateral trade.

Acharya *et al.* (2011) analyze trade-creation effects both within and outside the PTA for a number of preferential trade agreements. They find strong evidence of intra-PTA trade creation, showing that PTAs increase the value of trade between member countries (for 17 out of the 22 PTAs considered). On the other hand, they do not find evidence of trade-diversion effects. Differently from other studies in this area, Acharya *et al.* (2011) also consider the possible trade-creation effect outside the PTA. Most of the analyzed PTAs increase exports from member countries to non-member countries. In particular, they find very strong and positive effects regarding MERCOSUR and the ASEAN Free Trade Area, with an increase of exports outside the PTA of 109 per cent and 136 per cent respectively. Trade-diversion effects outside the PTA have been found in a number of cases, including the Caribbean Community (CARICOM), the Central European Free Trade Agreement (CEFTA), the Common Market for Eastern and Southern Africa (COMESA) and the Closer Economic Relations FTA between Australia and New Zealand.

A third approach in the empirical literature has been to test the “natural trading partner” hypothesis (Krugman, 1991). Also using a gravity model and concentrating on the Americas, Frankel *et al.* (1995) seek to identify trade diversion by testing whether regional trade is greater than could be explained by natural determinants of trade, such as proximity and market size. They find that multiple PTAs with partial liberalization among neighbors within a continent would raise welfare, and that this situation is preferable to a single continental free trade area. Thus, in their view, the formation of trading blocs, such as NAFTA and MERCOSUR, among “natural trading partners” is preferable to the failed FTAA (Free Trade Area of the Americas). An opposing view is held by Bhagwati and Panagariya (1996), who argue that the volume of trade and transport-cost criteria, tested by Frankel *et al.*, are not sufficient to ensure that a PTA will raise welfare. Addressing the points brought up by Bhagwati and Panagariya, Krishna (2003) uses detailed US trade data to estimate the welfare effects of hypothetical bilateral PTAs. He finds that neither geographical proximity nor trade

volumes are significantly correlated with welfare gains, concluding that these are not good indicators for the formation of PTAs, as the literature supporting the “natural trading partner” hypothesis suggests. Baier and Bergstrand (2004) study which pair of countries would gain most from forming a PTA and whether these country-pairs are more likely to sign a preferential agreement. They develop a general equilibrium model with a sample of 53 countries, using data from 1996. Testing for several variables that predict 85 per cent of the bilateral PTAs in their sample, their results support the natural trading partner hypothesis

1.5.2 The Effect of Trade Liberalization on Revenues

Pupongsak (2009), generalizing international trade tax revenue is thought to decrease after countries liberalize their trade. Many studies point out that the reduction in import tariffs, associated with trade liberalization, often leads to a drop in trade-tax revenue, especially for small open economies whose tax revenues tend to be more heavily dependent on international trade. Peters (2002) investigates this issue by taking the case of countries in the Caribbean community which are constrained by having a small size and lower level of development. Although the trade-tax revenue effect of trade liberalization is generally uncertain, depending on many factors such as countries’ conditions, initial position of tariffs, and the level of import elasticities of substitution, he finds evidence that trade liberalization in these countries usually leads to a reduction in trade-tax receipts and finally a decrease in total tax revenues.

Potrafke (2015) says economic aspects of globalisation such as trade openness, foreign direct investment and looser capital account restrictions did not jeopardise the welfare state, especially in established OECD countries. Tax revenues and government expenditures did not erode in the course of globalisation. Becker et al. (2012) investigate how globalisation was correlated with tax revenues. The data set includes OECD countries over the period 1990–2005. The results show that economic globalisation was positively correlated with

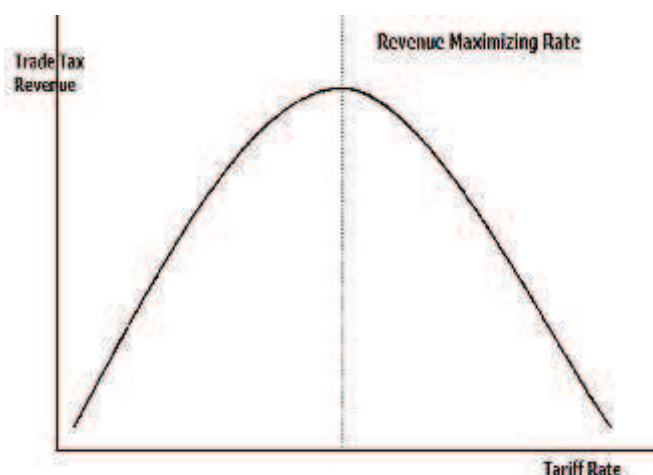
consumption tax revenue as a share of total tax revenue and was not correlated with business tax revenue as a share of total tax revenue. Becker et al. (2012) estimate a common panel data model including fixed country effects. Onaran *et al.* (2012) investigate how globalisation was correlated with implicit tax rates (ITR) on labour income, capital income, and consumption and the tax revenues of the individual taxes as a share of total tax revenues in the European Union. Onaran and Boesch (2014) also investigate how globalisation was correlated with ITRs on labour income, capital income and consumption in the European Union. In both studies, the baseline results show that overall and economic globalisation was not correlated with ITRs on capital.

Ebrill *et al.* (1999) provide a clear-cut explanation of the effect of trade liberalization on trade tax. They state that the revenue implications depend largely on the volume of imports after trade is liberalized. Generally, trade restrictions are composed of two major components, tariff barriers and non-tariff barriers. Although the main aim of trade liberalization is to reduce or eliminate both restrictions, most liberalization usually considers the removal of quantitative restrictions at the first phase and then the continual reduction of tariff rates at the second stage. They reason that goods, which are restricted by quotas, are usually tariff imposed. If quotas of these goods are removed, it is possible that trade-tax revenue may increase at least in the very first stage of liberalization, as the volume of imports is likely to increase. This may also be true in the case of the replacement of quantitative restriction such as quotas by tariffs.

The initial tariff levels, their coverage, and the extent to which they are reduced, play a significant role in determining the impact on international trade-tax revenue. Ebrill *et al.* (1999) reason that if the initial tariff rates are high, tariff reduction may lead to an increase in trade-tax revenue since price elasticities of demand and supply are not constant over the entire range of prices. This effect can be illustrated by a Laffer curve, which demonstrates the relationship between trade-tax revenue and trade restrictions (Figure

1.1). When the initial tariff rate is prohibitively high, trade volumes are likely to be severely compressed and trade-tax revenue will be very low. Reducing tariffs will lead to a substantial increase in trade volumes and a decrease in the incentive to evade taxes. These combinations more than compensate for the lower tariff rate, resulting in higher tariff revenue. However, if there is a further reduction after trade is fairly liberalized at the revenue-maximizing rate, the increase in trade volume will not be large enough to offset the lower tariffs and now the direct effect of tariff reduction will result in the loss of revenue. As a result, overall tariff revenue will therefore decrease (Ebrill *et al.*, 1999; and Agbeyegbe *et al.*, 2004).

Figure 1.1 Laffer Curve



Ebrill *et al.* (1999) also mention that if the liberalization is accompanied by the reduction in tariff dispersion, trade-tax revenue may increase. The rationale is that a reduction in the dispersion of tariffs is often made by lowering the higher tariffs and increasing the lower ones in order to reduce them to average value and usually, highly-elastic-demanded goods such as final consumption goods stated above which are also high-tax levied. As a result, a reduction in tariff dispersion may lead to an increase in trade- tax revenue. In addition, the reduction in tariffs is often associated with the reduction of tax evasion and tariff exemptions. Intuitively, the higher the tariffs are, the higher the tax evasion is, since

evasion leads to high marginal benefit for importers. Many works find that there is a positive relationship between tariff rates and tax evasion (Clotfelter (1983), Fisman and Wei (2001)). Recent research shows empirical evidence that a one-percent increase in tariff rates is associated with a three-percent increase in tax evasion (Fisman and Wei, 2004). The tariff reduction, of course, raises the costs for tax evaders and hence lowers the level of tax evasion, thus it may bring about an increase in trade-tax revenue. For tariff exemptions, Pritchett and Sethi (1994) find that high tariff rates do not necessarily lead to high trade-tax revenue. Very similar to the case of tax evasion, they argue that higher tariff rates lead to higher incentives for importers to attempt to seek exemptions. The reverse relationship is also true. The lower tariff rates may not bring a decrease in trade-tax revenue since the temptations for abuse of any system of exemptions will decrease with the lower level of tariffs.

Trade-tax revenue may also depend on the price elasticity of demand for imports and the price elasticity of supply of import substitutes. According to Ebrill *et al.* (1999) and Agbeyegbe *et al.* (2004), if either the price elasticity of demand for imports or the price elasticity of supply of import substitutes is high enough, there may be revenue gain in later stages of liberalization if the new value of imports (higher volume of imports multiplied by lower tariff rates) exceeds the value of imports before liberalization takes place. The volume of imports can be increased in two ways. On one hand, since the prices of imported goods are cheaper after the restrictions are removed, if the price elasticity of demand for imports is elastic enough, the volume of imports may increase to the point where import values offset the loss from tariff reduction. On the other hand, the prices of domestically-produced import substitutes are forced to be lowered when imported goods increase due to competition. As a result, domestic output decreases and thus imports increase. However, the elasticity issue might be very complicated because it depends on the timing and the characteristic of each good. Generally, imported consumer durable goods respond to the

price changes more than do intermediate goods and raw materials (Clarida, 1996). In addition, most countries always reduce their restrictions on raw materials, intermediate goods to final consumption goods (usually imported competing goods) consecutively, in order to avoid political contention (Ebrill *et al.*, 1999). In this case, an increase in trade-tax revenue may occur only in later stages when tariffs of final consumption goods, which are often taxed at high rates, are eliminated.

Trade liberalization does not only involve the reduction or removal of tariffs and quantitative restriction, but it may also involve the reduction or elimination of an export tax. Similar to the case of the tariff cut, if the reduction of the export tax leads to a substantial increase in a country's export volume, a country may be able to collect more trade taxes. However, if the reduction of an export tax does not bring about a significant increase in export volume, trade tax revenue will be decreased.

1.6 Regional Dealing with ASEAN Countries

The ASEAN Free Trade Area (AFTA) is a form of agreement between ASEAN countries to establish a free trade area in order to improve the economic competitiveness of the ASEAN region. ASEAN is considered a production base for the world and at the same time for a regional market of 500 million inhabitants. AFTA was established at the time as the ASEAN IV summit in Singapore in 1992. AFTA was initially targeted to be achieved within 15 years (1993-2008), then accelerated to 2003, and accelerated again and finally to 2002. The Common Effective Preferential Scheme Tariffs for the ASEAN Free Trade Area (CEPT-AFTA) is a scheme to achieve AFTA through tariff reductions from 0-5%, the elimination of quantitative restrictions and non-tariff barriers. Recent developments related to AFTA are an agreement to reduce import duties on goods entering the inclusion list (IL) in 2010, regarding Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore and Thailand, and for Cambodia, Laos, Myanmar and Vietnam in 2015.

ASEAN Vision 2020 affirmed that forward-looking ASEAN will play an important role in the international community and advance the common interests of ASEAN. ASEAN continues to develop cooperative relations with Dialogue Partners, namely, Australia, Canada, China, the EU, India, Japan, South Korea, New Zealand, the Russian Federation, the United States, and the United Nations Development Programme. ASEAN also improves cooperation with Pakistan in some areas of common interest.

Consistent with its determination to enhance cooperation with other developing countries, ASEAN maintains contact with intergovernmental organizations, namely the Economic Cooperation Organization, the Gulf Cooperation Council, the Rio Group, the South Asian Association for Regional Cooperation, the South Pacific Forum, and also through the Asian African Sub-Regional Organizations Conference. In addition, the majority of ASEAN Member Countries also participate actively in the activities of the Asia-Pacific Economic Cooperation (APEC), the Asia-Europe Meeting (ASEM), and the East Asia-Latin America Forum (EALAF).

Until now, ASEAN has had 11 Full Dialogue Partners and one Sectoral Dialogue Partner. The Full Dialogue Partners of ASEAN are the United States, Australia, China, India, Japan, Canada, the Republic of Korea, Russia, New Zealand, the EU and the UNDP, while the Sectoral Dialogue Partner of ASEAN is Pakistan. In addition, ASEAN also has a framework of cooperation with China, Japan and the Republic of Korea through the ASEAN Plus Three.

Meanwhile, since 2005, an East Asia Summit (EAS) forum has developed with participants from 16 countries. They are the ASEAN countries, Australia, China, India, Japan, the Republic of Korea and New Zealand. In addition to cooperation with Dialogue Partners, ASEAN also cooperates with regional organizations such as the Gulf Cooperation Council (GCC) and MERCOSUR, UN agencies, the Andean Group, the Asian Development Bank (ADB), the countries of the Middle East and Central Asia who are members of the Economic

Cooperation Organization (ECO), the Southern African Development Community (SADC), the Shanghai Cooperation Organization (SCO).

1.6.1 The Patterns of Economic Growth and Development

The Association of Southeast Asian Nations (ASEAN) was established in 1967. The members of ASEAN include old members (Indonesia, Malaysia, the Philippines, Singapore and Thailand) and new members (Brunei, Vietnam, Cambodia, Laos and Myanmar). Since the mid-1980s, most ASEAN countries have recorded a significant rate of economic growth. As a result, the term of Newly Industrialized Countries (NICs) especially attributed to Singapore, reflects the success of this country in pursuing economic development. Many also predicted that other ASEAN countries such as Malaysia and Thailand would follow Singapore's economic performances and moreover that the other ASEAN countries such as Indonesia and Vietnam would be the second NICs. This remarkable GDP growth with the exception of Brunei was due to the primarily outward-oriented and market-driven economic development policies implemented over the past few decades (Chirathivat, 1996) and (Mun-Heng, 1996).

Table 1.2 Selected Basic Indicators of ASEAN Countries, 2013

Countries	GDP Growth (%)	Inflation Rate (%)	Population (mill)	Growth of nominal value of total trade (%)	Ratio of total trade to GDP (%)
Brunei Dar	-1.8	0.2	0.418	93.4	(10.7)
Cambodia	7.0	4.6	15.7	118.1	(1.8)
Indonesia	5.8	8.4	250	42.9	(3.3)
Lao PDR	8.2	6.9	6.7	57.2	(4.4)
Malaysia	4.7	3.2	29.7	139.1	2.4
Myanmar	7.5	n.a.	53.7	42.9	26.7
Philippines	7.2	4.1	98.4	44.3	1.5
Singapore	3.9	1.5	5.4	262.9	(0.6)
Thailand	2.9	1.7	67	123.4	0.2
Vietnam	5.4	6.0	89.7	154.6	16.2
ASEAN	5.2	n.a.	616.718	104.9	1.4

n.a.: not available

Source: ASEAN Secretariat and World Development Indicators Database

In addition, macroeconomic policies such as inflation management and monetary liberalization also play an important role in making ASEAN an attractive region for the promotion and expansion of trade and investment. Supporting this view, since the late 1970s, the ASEAN region has been one of the most attractive investment destinations in the developing world. ASEAN countries have substantially liberalized their international trade and investment regimes by lowering trade barriers and lifting restrictions on foreign investment. Therefore, it is not surprising that foreign direct investment (FDI) plays an important role in the process of economic development in this region. Japan and East Asian Newly Industrialized Countries (NICs) are the main sources of investment and their share on

total foreign investment in this region has increased substantially (Athukorala and Menon, 1996). Indonesia, Malaysia and Thailand hence become a main destination of FDI due to the attractive conditions offered.

The dramatic progress in economic development is parallel with the changes in economic structure. The structural changes in ASEAN economies are mirrored by a substantial decrease in the share of the agricultural sector in total GDP (Table 1.3). A decline in the agricultural share is prominent in the ASEAN countries, indicating the degree of industrialization. On a country-by-country basis, Indonesia and Thailand have shown a dramatic change in which the contribution of the agricultural sector to total GDP has lowered significantly. Despite the decrease in the contribution of the agricultural sector to total GDP, the role of this sector is still important in terms of generating national income, providing job opportunities, especially in rural areas and more importantly, supporting the industries.

Table 1.3 Sectoral Value Added Share of GDP (%)

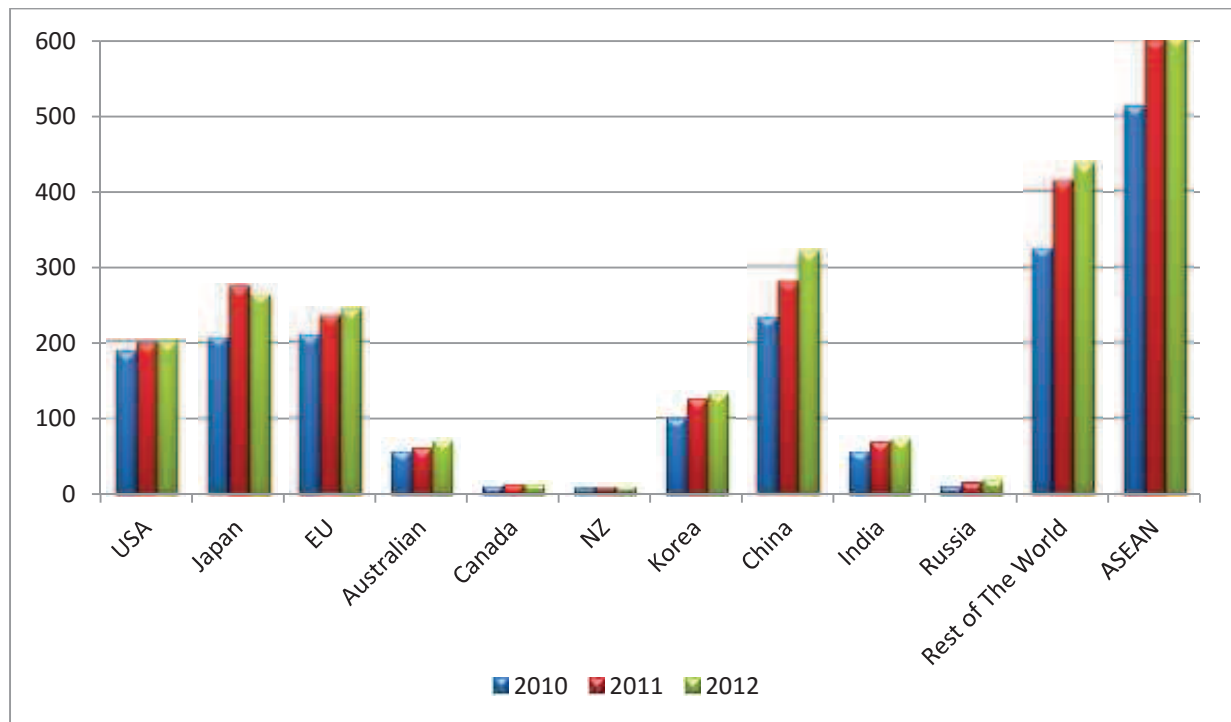
Countries	Agriculture		Industry		Services	
	2000	2013	2000	2013	2000	2013
Brunei Dar	1.02	0.726	63.7	68.2	35.3	31
Cambodia	37.8	33.5	23	25.6	39.1	40.8
Indonesia	15.6	14.4	45.9	45.7	38.5	39.9
Lao PDR	45.2	26.5	16.6	33.1	38.2	40.4
Malaysia	8.6	9.31	48.3	40.5	43.1	50.2
Myanmar	57.2	n.a.	9.69	n.a.	33.1	n.a.
Philippines	14	11.2	34.5	31.1	51.6	57.7
Singapore	0.098	0.034	34.8	25.1	65.1	74.9
Thailand	9.02	12	42	42.5	49	45.5
Vietnam	22.7	18.4	43.1	38.3	43.1	43.3

n.a. : not available

Source: World Database Indicators Database

The importance of the USA, the EU and Japan for the ASEAN economies is presented in Figure 1.2 which shows the values of ASEAN exports and imports in the period 2010-2012. ASEAN trade with these countries is reported to have increased every year. Within the period 2010-2012, the average ASEAN total trade to and from the USA, the EU, Japan and China accounted for between 40 % and 70 % of total ASEAN exports and imports respectively.

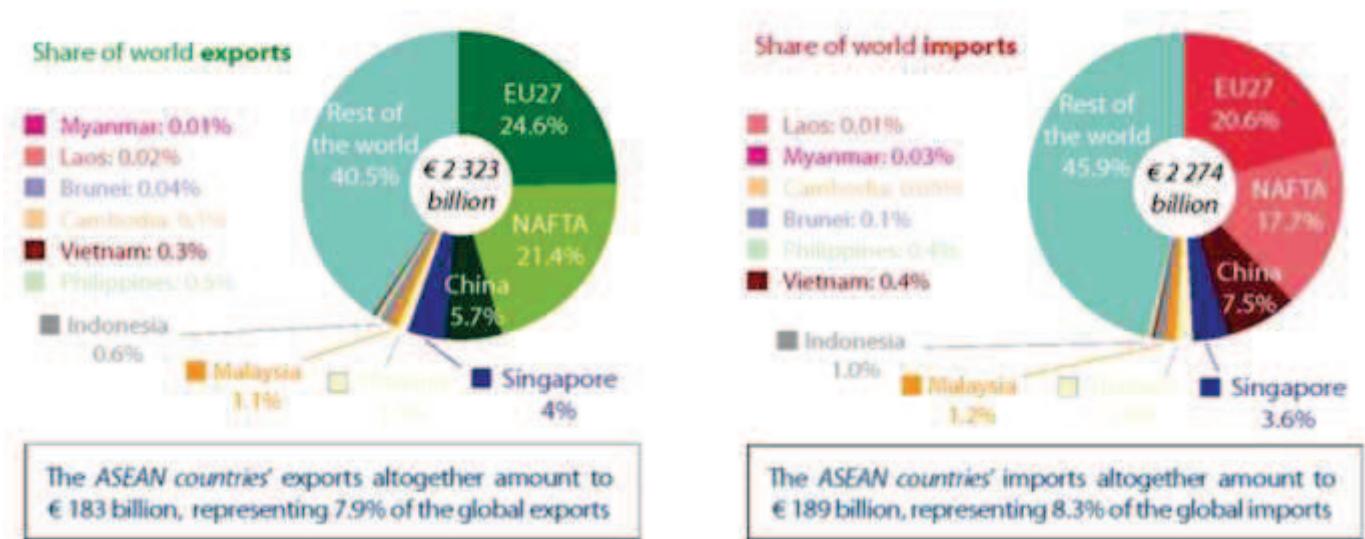
Figure 1.2 ASEAN Trade with Major Trading Partners (US\$ billion), 2010-2012



Source: ASEAN secretariat

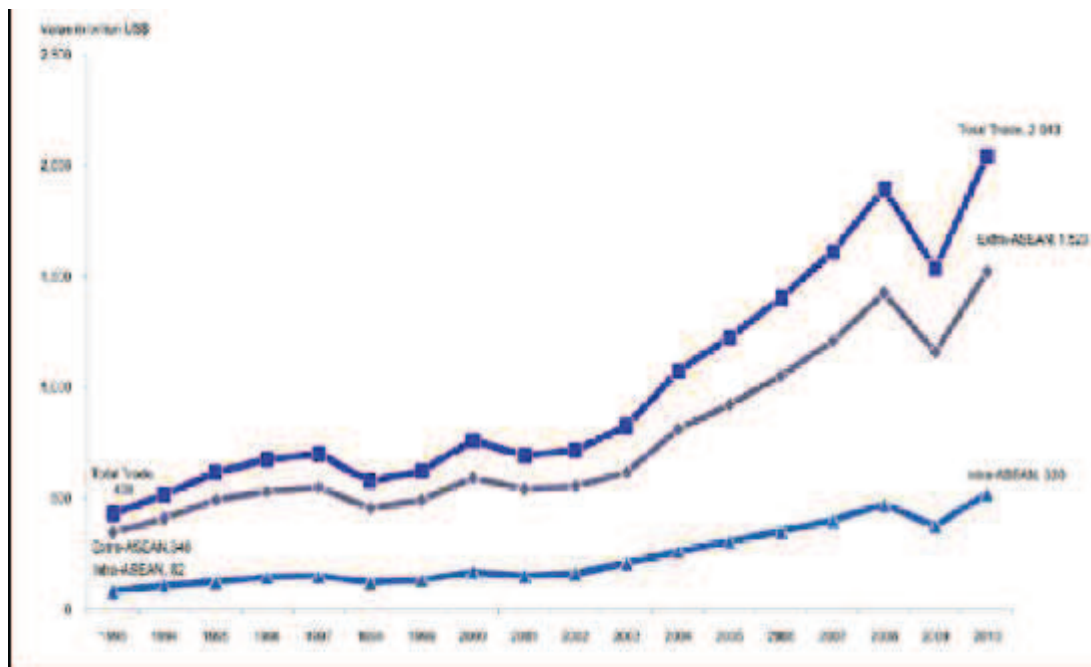
In the context of the global economy, ASEAN's share of global trade is very low (7.9 percent for exports and 8.3 percent for imports) compared to the EU or NAFTA. The share of important regional trade arrangements in global trade is provided in Figure 1.3. The size of ASEAN economies relative to the global economy can be seen from the small share of ASEAN trade in global trade. This statistic is much smaller if Singapore is excluded from ASEAN exports. According to the World Bank (2001), the world share of Indonesia, Malaysia and Thailand in 2000 rose due to the high proportion of hi-tech equipment in these countries' exports and an extraordinary surge in world demand for such equipment in that year. The increase in the export of high-tech equipment resulted from government policy efforts to promote high-tech industries. However, such policies make countries more vulnerable to sharp cyclical changes in world markets for these products.

Figure 1.3 ASEAN's share of global trade, 2011



Source: Asian Development Bank

Figure 1.4 Growth in Share of ASEAN Trade both Within and Outside the Region



Source: ASEAN Secretariat

The trend in direction of trade also confirms that ASEAN integration was trade-creating: as intra-ASEAN trade expanded, trade with the rest of the world also increased proportionately — that is, the share of trade with the rest of the world did not decline. The explanation for this growth of ASEAN's trade with the rest of the world lies in the former's structure; its intermediate goods, the intra-industry nature of trade within the ASEAN region and exports of final goods to outside the region all contributed to this growth. This proportionate growth of extra-ASEAN trade is shown in Figure 1.4.

Using a method of the Trend and Cycles Decomposition (TCD), Diao, Roe and Somwaru, (2001) examine the cyclical trend of agricultural trade in the ASEAN region. Total ASEAN agricultural trade declined in the mid-1970s and throughout the 1980s. This decline was parallel with the decrease in extra-agricultural trade in this region. In addition, growth in intra-agricultural trade decreased more rapidly. These growth patterns probably reflect inward-oriented policies such as that of import substitution during this period. A study focusing on agricultural- pricing policies in Asia, that of Krueger, Schiff and Valdes (1991), finds an overvaluation of the real exchange rate. This policy leads to a hampering of the exportation of agricultural products due to a loss of comparative advantage on world markets. The same patterns are also found in the case of agricultural importation. Imposing high trade barriers, either tariff or non-tariff barriers, to support domestic production resulted in negative growth of agricultural imports. In addition, trade policies that were biased against regional trade contributed to the decreased intra trade. For example, high priority was given to imports of capital and intermediate goods that were largely supplied by the industrialized countries. This resulted from the adoption of import-substitution policies together with the problems of balance of payments in some ASEAN member countries (Wong, 1980).

As ASEAN economies started liberalizing their import barriers in 1980s, they experienced high export and import growth of agricultural products. However, the growth of extra-agricultural trade was more rapid than intra-trade. In this period, ASEAN economies

experienced higher economic growth compared to other countries and other regions. Gradually, reduced trade barriers together with macroeconomic stabilization resulted in an increase in exports and imports. For instance, Indonesia continued to deregulate in a pragmatic and gradual manner. But the financial crisis emerging in mid-1997 led to a recession in this region. When looking at both figures, the curve of intra- and extra-agricultural trade has declined since 1997. These findings suggest that during this period and also in the years to come, trade with non-members will remain very important despite the commitment to reducing import barriers based on the AFTA scheme.

Statutory and administrative measures are also determining factors in the flow of goods. These measures are not only used in developed countries but also in developing countries in order to promote and even to prohibit trade as a procedure to achieve political economy objectives (Derosa, 1995). In the context of ASEAN trade, most governments in this region, with the exception of Singapore and Brunei, have been interventionist and protectionist for economic and political reasons. Other instruments of protection such as fiscal charges, advance sales tax, restrictive licensing, quotas, foreign-exchange restrictions, state trading monopolies and prohibitions still exist in ASEAN as means of protecting their economies.

Singapore has long been reducing its trade barriers as proven by the low, even zero tariff levels with the exception of NTBs on cereals. This is due to the fact that Singapore has embarked on a program of unilateral trade liberalization since 1969 and that Singapore is too small to afford the luxury of protectionism. The high level of non-tariff barriers on cereals is provided to protect rice farmers in this country from imported rice. Even if the role of agricultural products is not significant, apart from rice concerns, there are still many who rely on the swine and poultry industries.

Besides relatively high non-tariff barriers on cereals, there are also trade barriers imposed on mineral fuels and transportation equipment. Following Singapore, the Malaysian

market appears open, reflected by moderate tariff levels ranging from 2.1 % (non-tariff barriers) to 17.6 % (mean tariff charges). By contrast, Indonesia and Thailand apply extensive non-tariff barriers to primary commodities, particularly cereals and vegetable oils, as well as oil seeds, and at high average frequency ratios. In the case of Indonesia and Thailand, the high imposition of a high frequency of non-tariff barriers exists to protect rice farmers, thereby stabilizing farmers' income and increasing food security.

1.6.2 ASEAN Free Trade Area (AFTA) Agreement

Regarding the progress of ASEAN economic co-operation, Naya and Imada (1992) perceive three major phases in its co-operation. The first stage is the period from 1967 (the establishment of ASEAN) to the first summit in 1976. In this period, ASEAN members tried to lay down a fundamental foundation for future co-operation. At the beginning of its establishment, political objectives became a major consideration. Therefore, it is not surprising that the idea of deep economic co-operation did not appear. The second phase, which took place between 1976 and the announcement of the formation of AFTA, became a period of consolidation and preparation for better co-operation. As mentioned earlier, the agenda of economic institutions such as ASEAN PTA and three industrial co-operation agreements represented a significant outcome despite a low degree of success. The ASEAN PTA signed in 1977, ten years after the Bali Concord, has had little impact in terms of boosting intra-ASEAN trade. The minor success of ASEAN PTA may refer to the relatively low margin of preference, ranging from 10 percent in the beginning of PTA to 40 percent later on. Ten years later in 1987, members reviewed their trade policy and attempted to make significant changes so as to make ASEAN PTA work effectively. The decisions included:

- Exclusion lists to be reduced to no more than 10 percent of the number of traded items and/or 50 percent of the value of intra-ASEAN trade;
- Inclusion of excluded product list with minimum margin of preference (MOP) of 25 %;

- Deepening the tariff reductions of those existing PTA items to 50 per cent on a concession abroad by 5 per cent per year or product-by-product concessions;
- Immediate restraint of non-tariff barriers (NTBs), accompanied by negotiation for a curtailment of such NTBs; and
- Reduction of ASEAN content level to 35 per cent.

However, these decisions had no effect on enhancing intra-ASEAN trade. This was due to a lack of a political will from the ASEAN governments to make ASEAN PTA more workable. This was reflected by the slow progress of tariff reduction and the hesitation of governments to bring items into the inclusion list. The slow progress of tariff reduction was due to concerns over unfavorable implications if the members quickly liberalized their domestic markets. These markets still had high border tariff rates at that time. The last phase, from 1992 to 2006, the period of AFTA implementation, would be a critical period, whether or not all ASEAN members were fully committed to implementing the AFTA agreement.

In response to slow progress of the ASEAN economic co-operation and the formation of the European single market and the North American Free Trade Area (NAFTA), in January 1992, ASEAN countries signed an agreement to establish the ASEAN Free Trade Area (AFTA) which came into effect at the beginning of 1993 and was planned to be finally implemented by 2008. The full implementation of the AFTA agreement began in 1995 and the final implementation was accelerated from 2008 to 2003. Under the ASEAN PTA, no reciprocal rule was made and only the nominating country granted margin preferences. By contrast, under the AFTA plan, a reciprocal rule has been made in the sense that goods and their tariff reduction schedules under theCEPT scheme apply to all ASEAN members. Therefore, the AFTA plan seems across-the-board and more promising than the ASEAN PTA. Strong commitments of the ASEAN member countries to succeed in this effort can be seen by the inclusion of as many products as possible into the fast-track program.

Tangerman (1996) identifies fundamental factors stimulating the need to create the AFTA. These factors include: (1) the emergence and consolidation of economic blocs, particularly in Europe and America, in which developed countries become protectionist; (2) within Southeast Asia where market-driven trade policy dominates the regional governments' decision-making through the adoption of trade/economic liberalization and the strategy of attracting FDI; and (3) the increasingly competitive external environment. In addition to these factors, Akrasanee and Stifel (1992) recognize that the introduction of an international production network, which lowers the production cost through technological advances, was one of the other considerations facing ASEAN industries to lower their costs of production and to become more competitive.

According to the 1995 protocol of the establishment of AFTA, the members agreed to reduce trade barriers such as tariff and non-tariff barriers (quota and quantitative restrictions) through the forming of the Common Effective Preferential Tariff Scheme (CEPT). The goal of the Scheme was to reduce tariffs for all manufactured goods to 0-5% by the year 2003. The design of the CEPT scheme covers almost all products and thus provides more comprehensive product coverage than previous attempts at liberalization that emphasized a product-by-product approach. The establishment of the CEPT has led to the harmonization of tariffs among ASEAN members, although the level of tariffs against non-ASEAN countries has remained unchanged. At the ASEAN Summit in January 1992, 15 product groups were designated to be on the CEPT Scheme for accelerated tariff reductions. The original CEPT consisted of 41,147 tariff lines, which accounted for about 88 percent. These were subject to a schedule of tariff reduction to bring them down to a range 0-5% by the year 2003. Some 3,321 tariff lines were temporarily excluded (i.e. in the Temporary Exclusion List) while another 523 tariff lines were permanently excluded from tariff reduction (i.e. in the General Exception List). The only processed agricultural product included in the original CEPT was vegetable oil.

Due to economic changes, especially those during 1993-1994, represented by the agreement among ASIA-PACIFIC countries to enhance their economic co-operation by implementing the Bogor memorandum, ASEAN members reviewed their trade policy. According to the Fourth AFTA Council and the 25th ASEAN Economic Ministers (AEM) meeting, members agreed to speed up the AFTA implementation through the introduction of two programs of tariff reduction under theCEPT Scheme: The Fast-Track Program and the Normal-Track Program (ASEAN Secretariat).

1. The Fast-Track Program meant that (a) tariffs above 20% would be reduced to 0-5% within 10 years (i.e., by 1 January 2003). Members committed to implement this program were Indonesia, Malaysia, Philippines, Singapore and Thailand, and (b) tariffs at 20% and below would be reduced to 0-5% within 7 years (i.e., by 1 January 2000). Indonesia, Malaysia, Philippines and Singapore were committed to implement this program.
2. The Normal-Track Program indicated that (a) tariffs above 20% would be reduced in two stages: (1) to 20% within 5 to 8 years (by 1 January 2001) and (2) subsequently, to 0-5% in 7 years according to an agreed schedule ending on 1 January 2008. In this program, Indonesia, Malaysia, Philippines and Thailand started implementing the normal track of tariff cuts. And (b) tariffs of 20% and below would be reduced to 0-5% within 10 years (i.e., by 1 January 2003). Those countries agreed to implement these programs, beginning on 1 January 1994, with the exception of Brunei, due to an administrative requirement which indicated June 1994 as the starting time for the implementation of the normal-track program of tariff reductions above 20 %.

Tariff reduction for unprocessed products in the Immediate Inclusion List began on 1st January 1996 and by 2003 the process of tariff reduction for these product categories was planned to have been completed. The final import tariff levels for these products would be 0-5 %. To support and speed up the accomplishment of tariff reduction, member states were required to eliminate quantitative restrictions (QRs) and other non-tariff barriers (NTBs) on

this product category. This applied for products that were included in the Temporary Exclusion List with the exception of the tariff reduction taking place since 1st January 1997. Products in the Immediate Inclusion List and Temporary Exclusion Lists represented more than 87% of the tariff lines, a total number of 1,760. As mentioned earlier, by 2003 these products would be in the CEPT Scheme. The members also recognized that the number of products included in the Sensitive List should be minimized and at the same time, the Inclusion List should be expanded as much as possible. Indonesia and Malaysia were concerned about opening up their markets to unprocessed agricultural products. It was feared that the inclusion of sensitive products in the CEPT would affect millions of farmers and that if the protection of unprocessed agricultural products in this list was lifted immediately, it would lead to unemployment of resources and social disruption. Even products such as rice, wheat flour, sugar and cloves were to be put into a more permanent sensitive list. However, the tariff reductions to be arranged specially would be more preferential than those of the Uruguay Round commitment.

The inclusion of sensitive products such as agricultural products in market liberalization, e.g., within a free trade area (FTA) leads to important implications in terms of national trade policy. With regard to this, Josling (1997) identifies such implications: (1) FTA members will have to modify their agricultural policies to accommodate free trade intra-bloc trade. (2) FTA members will also change their third countries' trade policies over time, and (3) domestic policies in FTA members are likely to change even when they do not conflict with intra-bloc trade. In addition, as he added, the inclusion of agriculture in FTA is also supported by several reasons: (1) wide access to importer markets, (2) different food costs which would lead to a distortion of trade, investment and wage comparability, and (3) international competitiveness.

Itakura (2014) reveals that reducing trade barriers has a significantly-positive impact on economic welfare. Although there are differences in the magnitude of positive

contributions to welfare, all of the FTAs in which the AMSs participate tend to raise welfare. Among the FTAs examined in this study, the Regional Comprehensive Economic Partnership (RCEP) leads to the largest positive effects on real GDP for most of the AMSs.

Lee and Plummer (2011), Lee, Owen and van der Mensbrugghe (2009) and Lee, Roland-Holst and van der Mensbrugghe (2004) provide quantitative analysis of the ASEAN Economic Community (AEC), ASEAN-China, ASEAN-Japan, ASEAN-Korea, ASEAN + 3 and RCEP, by applying a dynamic CGE model of global trade. Petri, Plummer and Zhai (2012) examine the effect on the AEC of deepening integration of the ASEAN Free Trade Area (AFTA) through expansion of the measures of liberalization. These studies consider the liberalization effects of reducing and/or removing non-tariff barriers to trade, in addition to tariff-cuts in FTAs. They find that gains from liberalization will become larger if the non-tariff components are incorporated in the evaluation.

By strengthening economic ties as a group, ASEAN could establish a stronger position with a common voice and command more attention and greater control over the progress of negotiations. AFTA would provide ASEAN with some leverage in APEC and global negotiations (Frankel and Wei 1997). Some research has indeed demonstrated that ASEAN could benefit through intra-regional integration before seeking integration with other countries (Sasatra and Prasopchoke 2007).

1.6.3 APEC Trade Liberalization

Despite the commitment of the ASEAN member countries to reducing trade barriers in order to enhance trade in the ASEAN region, the ASEAN member countries are also actively involved in promoting open trade and practical economic cooperation among Asia-Pacific economies (APEC). Apart from a need to enhance trade in this region, the establishment of APEC was due to uncertainty in the outcome of the Uruguay Round (Feridhanusetyawan, 2005). This cooperation was founded in 1989 and the members include ASEAN-member

countries (Brunei Darussalam, Malaysia, Indonesia, Philippines, Singapore, Thailand and Vietnam), Australia, Canada, Chile, China Hong Kong, China, Japan, Korea, Mexico, New Zealand, Papua New Guinea, Peru, Russia and Chinese Taipei. The price GDP for APEC economies for year 2000 was US\$ 17,921 billion and APEC's percentage of global trade for the year 2000 was around 47 %. In addition, APEC members accounted for 42 % of the world's population. Trade within the APEC members accounted approximately for 40 % of the global trade (1998). In addition, around 70 % of APEC's export destinations and import sources are intra-regional. A considerable proportion of this APEC intra-trade is not due to the APEC institution but the APEC economies having pursued trade openness. Young and Huff (1997) stress that countries in this region are dynamic, export-oriented economies.

The unique nature of the APEC is that it seems to apply the concept of 'open regionalism'. This implies that any reductions of trade barriers it achieves for its members are extended to non-member countries. The WTO mechanism of the most-favored-nation (MFN) is more likely to be adapted due to its familiar and readily- available vehicle.

The members reached a monumental agreement which set the long-term goals of free and open trade and investment following the APEC leaders' meeting in Bogor (1994). APEC industrialized countries were required to reduce trade barriers by 2010 and 2020 for APEC developing countries. Several attempts have been carried out to implement the Bogor Agreement. The meeting in Manila (1996) provided a clear step by setting the Manila Action Plan for APEC (MAPA) which contained Individual Action Plans (IAPs) and Collective Action Plans (CAPs). In addition, the Manila Action Plan (MAPA) also included the abolition of non-tariff measures, deregulation, standard harmonization, governmental procurement, intervention in case of trade frictions, and trade liberalization measures (Takata, 1998). Different to the AFTA agreement, the process of trade liberalization is voluntary and concerted unilateral actions undertaken by individual APEC members based on its own plans, priorities and the levels of development of each APEC member (Ferydhanusetyawan, 1998).

Due to slow progress of trade liberalization under the Individual Action Plan (IAPs), the members introduced the so-called Early Voluntary Sectoral Liberalization (EVSL). This EVSL was a part of the CAPs. Besides, the EVSL implemented the outcome of the Osaka Action Agenda (1995) which stated that APEC members would identify industries in which the progressive reduction of tariffs might have positive effects on trade and economic growth in the Asia Pacific region. According to the outcomes of the Vancouver meeting (1997), 15 sectors were selected with 9 sectors given a high priority. The selection of the nine sectors was mainly based on the exporter's interest and they included at least one sector of exporter's interest from each APEC-member country (Yarnazawa, 1999).

Similar to the ASEAN case, there has been no concerted action on the harmonization of agricultural trade policies among APEC-member countries. However, in response to the importance of work on agricultural technical cooperation, the Agricultural Technical Cooperation Experts' Group (ATCEG) was established whose objective was to enhance agriculture's contribution to the region's economic growth and social well-being. Its scope extended to areas incorporating (a) food and agriculture-related research and development; (b) trade and other matters; and (c) food and agriculture-related environmental issues (APEC Secretariat).

As mentioned earlier, the establishment of the APEC was formalized in 1989 with the goal of promoting multilateral trade reform and facilitating regional trade. Initially, the concept or idea of making the region more open to trade was proposed by the Japanese economist Kyoshi Kojiyama in 1964. At that time, the formation of APEC was not formally developed or institutionalized. This was due to the fact that (1) GATT had successfully created an open trading regime and (2) unlike the EU case, APEC members were characterized by a diverse nature of economies, cultures and political systems (Young and Huff, 1997). However, the members realized that the GATT faced difficulties in sustaining multilateral trade liberalization. The disillusionment of members over the GATT resulted in

the acceleration of the formation of a free trade zone in the region. The debatable issue behind the establishment of APEC was what kind of regionalism would be pursued in the region and whether a reciprocal policy suited it. The concept of open regionalism raised considerable attention, especially from those who observed the process of the formation of APEC (see Coyle and Wang (1998), Wang and Coyle (2002), and Young and Huff (1997). Open regionalism required that trade-barrier reduction conducted by the members should apply as well for non-members. Such an approach, as Wang and Coyle (2002) acknowledge, would promote economic benefits for both economies (member and non-member economies) and furthermore would create a conducive atmosphere for accelerating the process of global free trade. Like AFTA, it seems that APEC would be a “stepping stone” to wider trade liberalization. This rationale is understandable as the USA has approached most economies in the American continent to establish the so-called Free Trade Area on Americas (FTAA), since then.

As mentioned above, APEC trade liberalization should be opened to all economies whether they are members or not. Drysdale (1988) proposes that APEC should be based on a non-discriminatory basis. He then argues that remarkable economic growth in the region is largely attributed to the open-trade policy pursued by APEC economies. In addition, economies in Western Pacific have been liberalizing their foreign trade unilaterally. Such a policy has had a great impact on trade and investment in the region. However, other members have argued that trade liberalization should apply only for members and for non-members who agree to reciprocal liberalization measures (Wang and Coyle, 2002). With reciprocal basis, the possibility of free riders of exploiting the APEC can be avoided. Unconditional trade liberalization will also provide some APEC members with a disincentive to pursue further trade and barrier-reduction investment. If this is the case, the members might even hold back from further trade liberalization.

The Bogor Declaration in 1994 became a starting point for the members to put in place a stepping stone for future economic co-operation, especially in terms of enhancing and promoting trade and investment in the region. The members decided to liberalize their trade regimes and investment, by 2010 for the developed countries and 2020 for developing countries. Despite the financial crises besetting some APEC members, specifically some of the Asian economies in 1997 and 1998, it was predicted that economic growth in the region in the near future would continue to occur at above the world average. If all members met the Bogor declaration, then substantial growth would take place (Chan and Nugent, 1998).

To implement the Bogor Declaration, several head-of-state and ministerial meetings were conducted. This ambitious plan of reducing trade barriers and investment impediments required members' commitment. Due to enormous differences in terms of factor endowment and economic development among the members, agreements on how the members should reduce their trade barriers and investment impediments could be only facilitated through intensive and regular meetings. The first meeting to spell out the Bogor Declaration was the Osaka summit in 1995. One of the important outcomes of the summit was that trade liberalization within APEC should be based on an MFN basis. The Osaka action agenda laid emphasis on (Gosper, *et al.* (1996)): (1) a procedure by which members would proceed with trade and investment liberalization, (2) the general principles which guided the process, and (3) detailed plans on collective actions including its objectives and guidelines and on common policy concepts as well as joint activities. As a way of liberalizing trade and investment in the region, the members also agreed to eliminate their trade barriers. For instance, the Chinese government announced a reduction not only of import tariffs but also of quota-licensing and import-control measures for industrial and agricultural products.

The second meeting held in Manila in 1996 laid down concrete trade-liberalization initiatives by which the members agreed to adopt plans (known as Manila Individual Action Plans). These plans were composed of Individual Action Plans, Collective Action Plans and

other joint activities. Following these actions, the members were required to submit their detailed liberalization plans to be updated at each successive ministerial meeting. Individual plans also needed approval from other members to assure comparability among the members. It is important to take a note here that like other sectors, the agricultural sector was also included and called for comprehensive treatment. However, the inclusion of agricultural products in the plans raised objections from Northeast Asian members. To accommodate such differences among the members regarding the treatment of agricultural products, the members adopted the principle of “flexibility”. This principle gave the members opportunities to delay agricultural liberalization (Scollay and Gilbert, 2000). But the members also acknowledged all sectors should ultimately be included in the liberalization process. The Vancouver meeting in 1997 announced more concrete trade liberalization plans. These plans were known as Early Voluntary Sector Liberalization (ESVL). Products to have their import tariffs reduced were classified into two tiers; the first tier, such as forestry and fisheries and the second tier, such as processed food. As reported, Japan and South Korea were reluctant to proceed further with the trade liberalization of these sectors. Other APEC members also faced difficulties in terms of reducing trade barriers within a short period. One of the reasons why these economies stood firmly against liberalizing their agricultural, forestry and fisheries sectors earlier was that their import tariffs on these sectors were relatively high (Scollay and Gilbert, 2000). On the contrary, APEC exporting economies such as the United States, Australia and New Zealand insisted all sectors should be treated equally. This implies that to accelerate trade liberalization and to boost trade in the region, the liberalization should apply to all sectors.

**CHAPTER 2 THE EFFECT OF TRADE POLICY
LIBERALIZATION ON EXPORT-IMPORT GROWTH IN
INDONESIA**

2.1 Introduction

2.1.1 Background

It is commonly accepted that sustainable trade liberalization should lead to the expansion of the country's foreign trade—both in its imports and exports and in absolute levels as well as proportions of the country's product. The effect of liberalization on trade structure, however, is probably of no less consequence than its impact on size: it should be of crucial importance in assessing some salient outcomes of trade liberalization. One effect is the implication of liberalization on the degree of the liberalizing economy's dependence on foreign markets; while trade expansion implies a stronger dependence, trade diversification (if that happens) would tend to lower it. Of at least equal importance is the impact of increased integration of the economy in the world market on employment or on income distribution inequality.

Such issues are certainly related to the degree to which trade exclusively expands in few sectors or, to the contrary, spreads over a variety of the economy's activities. Another issue is the extent to which trade liberalization encourages new fields of activity and intensifies entrepreneurship rather than increasing rents in established branches of production. Still another issue, raised recently in the literature, is the welfare impact of an increased range of traded goods.

Starting in 2010, international trade traffic again showed promising opportunities after being hit hard by the global economic crisis of 2008-2009. Indeed, it began to return to the long-term trend that developed immediately following the Second World War. A series of negotiations, particularly among industrialized countries, routinely takes place, addressing bilateral and multilateral forums and the GATT. Such gatherings are typically followed by the WTO seeking to eliminate the barriers of world trade prevalent in a period of depression. Thus, the doctrine of free trade and exports as the engine of growth has gradually echoed back

Although an economy grows over time as a result of increases in its productive resources and technology innovation, most of the economic literature suggests that trade liberalization potentially improves the allocation of domestic resources and consequently leads to an increase in economic welfare. According to Dornbusch (1992), Salehezadeh and Henneberry (2002), and Dennis (2006), every kind of import restriction raises the price of import goods relative to export goods.

The removal of trade restrictions through the process of trade liberalization encourages a shift of domestic resources from the production of import substitutes to the production of export-oriented goods. Thus, the new allocation of resources due to trade based on comparative advantage provides large benefits to domestic production and generates growth in the medium to long term. On the contrary, trade liberalization may also have a negative effect on economic growth since it exposes a country to volatility of output and terms of trade. Grossman and Helpman (1991) and Srinivasan (2001) develop endogenous growth models in the study of trade liberalization and suggest that free trade may be growth-hindering since it leads to more volatility in some specific sectors.

Trade liberalization is also often followed by financial liberalization, with the latter associated with more financial fragility. Through these channels, trade liberalization is considered as a potential source of macroeconomic volatility which is an important determinant of a wide variety of adverse outcomes including fluctuation in GDP growth.

There are many recent studies which suggest important adverse impacts of trade liberalization. For example, Ramey and Ramey (1995) point out that higher macroeconomic volatility tends to lead to lower growth; Pallage and Robe (2003) and Barlevy (2004) suggest that if output and consumption smoothing is an issue for the government to stabilize the domestic economy, output and consumption volatility will finally lead to the reduction of economic welfare; Gavin and Hausmann (1998) and Laursen and Mahajan (2005) indicate

that trade liberalization induces inequality and poverty in developing countries. These studies are supported by Harrison (1996), Harrison and Hanson (1999), Rodríguez and Rodrik (1999), which suggest that the positive association between trade liberalization and economic growth found in many previous studies is flawed, particularly due to the chosen measures of trade openness and model specification. They conclude that those results are not robust and they fail to establish the relationship between more open trade regimes and long-run economic growth. However, Greenaway, Morgan, and Wright (1998) and Bolaky and Freund (2004) suggest that trade liberalization may result in either an increase or a decrease in economic growth, depending on the country's characteristics and condition.

However, there are many examples which strongly support the argument that openness to international trade brings more rapid growth to the country. According to the World Bank (2002), almost half of developing countries which have lowered their average tariffs by about 30 percentage points are associated with an increase in trade relative to income by over 80 percent in the post-1980 period, and experienced growth of per capita income of 4 percent per annum in the 1980s, and 6 percent in the 1990s. By contrast, the remaining developing countries, which have lowered average tariffs by only 10 percentage points, have experienced very little or even no growth in GDP per capita in the post-1980 period. From this evidence, many authors suggest that the channel through which trade liberalization results in economic growth is the increase of the volume of trade between countries. Since the empirical evidence suggests that policies to promote trade openness, supported by sound domestic policies, lead to faster growth, and, in line with the experience that the earlier strategy of attempting to achieve growth through import substitution has been conclusively proved to have failed, most developing countries have switched their trade policies from import substitution to export promotion by implementing a trade liberalization policy since the 1980s.

However, not all countries have benefited from the gains of trade liberalization. From a trade perspective, while trade liberalization is generally associated with a substantial

increase in the volume of imports, there is nothing to guarantee that every country participating in free trade will experience a considerable increase in the volume of exports. Furthermore, if, after trade is liberalized, exports do not increase proportionately as an increase in imports, the trade balance will be worsened further and further. High imports without corresponding increases in exports leads to a trade deficit and further results in a current account problem. On the fiscal side, trade liberalization is likely to lead to a substantial decrease in international trade-tax revenue through the reduction of tariffs. The fiscal problem is more serious if a country is highly dependent on international trade tax and if it applies this tax as a major source of government revenue. Usually, this fiscal problem is found in less developed and developing countries. Thus, trade liberalization may in turn potentially lead the country to experience a profound problem of deficits which includes both trade deficit and fiscal deficit, at least in its transition period.

The association between trade liberalization and growth has been central in recent economic research, especially for developing countries. This debate has put particular emphasis on the export growth/economic growth relationship, since export promotion strategies seem to have constituted a superior development policy for most developing countries. The main benefits from higher export growth are the positive externalities which result from greater competition in world markets, that is, greater efficiency in resource allocation, economies of scale and technological spillovers (Santos, 2002c)

Recent developments in the trade policy literature focus on the potential dynamic effects of trade liberalization in reducing rent-seeking behavior and in accelerating the flow of technical knowledge from the world market. The benefits are derived from the greater access to new capital and intermediate goods, and are also due to greater knowledge leading to faster imitation of advanced techniques (Romer, 1994; Grossman and Helpman, 1995). In the case of the links between trade liberalization and exports, the basis for the analysis is the hypothesis that trade liberalization reduces anti-export bias and makes exports (especially

non-traditional ones) more competitive in international markets, mainly by reducing exchange rate distortions and export duties.

There are many studies based on the orthodox supply tradition which explain the impact of trade liberalization on export growth in developing countries. Some such investigations confirm that the countries that embarked on liberalization programs have improved their export performance (Thomas *et al.*, 1991; Weiss, 1992; Joshi and Little, 1996; Helleiner, 1994; and Ahmed, 2000). On the other hand, other researchers have found little evidence to uphold the relationship between trade liberalization and export growth (see UNCTAD, 1989; Agosin, 1991; Clarke and Kirkpatrick, 1992; Greenaway and Sapsford, 1994; Shafaeddin, 1994; and Jenkins, 1996).

The world economy is undergoing a process of trade liberalization marked by the establishment of the General Agreement on Tariffs and Trade (GATT) in 1947 whose role has now been replaced by the World Trade Organization (WTO). More liberal trade seems to be the purpose of most world countries in the hopes that liberalization can increase the volume and value of trade, which in turn can enhance economic growth and prosperity.

World trade data show that there was indeed an increase in the value of trade from 1950 to 2005, US \$ 290 billion to US \$ 10,120 billion. The export trade of goods (manufacturing, mining and agriculture) worldwide rose by an average of 6.3% from 1950 to 2001 and rising world output averaged 3.8%. According to Baier and Bergstand (2004), world trade is influenced by three factors: growth in revenue (income), reduction in trade barriers and the low cost of transportation.

Liberalization is marked by the reduction or even elimination of tariff and non-tariff trade barriers. Important trade barriers are to be eliminated because this can encourage the unhindered flow of goods and services. Based on one round of negotiations in the WTO Uruguay Round, the developed countries cut tariffs to one third while developing countries

cut tariffs to at most only 40%. Before the Uruguay Round, the average tariff on manufactured products was 6.2% for developed countries and for developing countries it was 20.5%. After the Uruguay Round, the respective average rates were 3.7% and 14.4%. Non-tariff barriers such as quotas, licenses and technical specifications were also gradually abolished but not as fast as the decline in rates.

Indonesian trade policy experienced periods of protection and liberalization. In the early 1970s until the early 1980s, the level of protection in Indonesia was still relatively high. Policy reform was particularly the case in the mid-1980s. Deregulation was the most important in 1986 when oil prices plummeted and forced the government to reform its trade policies, among others, by lowering tariff rates and converting several import licenses. Trade policy was intended to reduce dependence on oil and gas exports and policy targets were focused on increasing non-oil and gas exports (Santos-Paulino and Thirwall, 2004).

The incessant process of trade liberalization undertaken by Indonesia is certainly related to the purpose of deriving gains from more dynamic trade which will boost economic growth through a trade surplus. Trade liberalization was associated with the opening of access to the world market for Indonesian exports. However, it should be noted that the open access to world markets is reciprocal, in the sense that the Indonesian domestic market is open to imports from other countries.

Import-export activity is reflected in a country's trade balance. A trade liberalization policy which seeks to eliminate barriers to trade can increase exports but on the other hand can also increase imports. A country aims to have a balance of trade surplus or greater exports than imports. Thus, trade liberalization will affect the trade balance in terms of the growth of exports and imports. Export and import growth is what determines the balance of trade surplus or deficit. Indonesia's trade balance recorded successively growth of 15% and 12.97% in 2005 and 2006, where non-oil exports grew by 18.75% and 19.68%.

In general, Indonesia's exports experienced a significant change in the period 1996-2006. If the previous export was dominated by labor-intensive products, they then became natural resource-intensive and capital-intensive products.

Table 2.1 Change of Export Structure

HS	PRODUCT	2012		1996	
		VALUE (Bil US\$)	RANKING	VALUE (Bil US\$)	RANKING
85	Electrical Equipment	7291	1	3271	2
27	Mineral Fuels & oils	6410	2	1138	8
15	Fats, oils & waxes	6070	3	1525	3
40	Rubber, & rubber articles	5529	4	2274	5
26	Ores, slag and ash	4994	5	1801	6
84	Machinery	4362	6	1184	10
62	Crocheted	3374	7	2308	4
44	Wood	3356	8	5168	1
48	Paper	2805	9	944	12
61	Knitted	2159	10	1145	13

Source: Ministry of Trade

Table 2.2 Change of Import Structure

HS	PRODUCT	2012		1996	
		VALUE (Bil US\$)	RANKING	VALUE (Bil US\$)	RANKING
84	Machinery	7403	1	10.083	1
29	Organic chemical	3439	2	2346	4
85	Electric Equipment	3107	3	4153	2
72	Iron & steel	2855	4	1906	6
87	Vehicle other	2447	5	2716	3
39	Plastic & plastic	1855	6	1284	7
89	Ships and Boats	1501	7	243	26
73	Articles of Iron & Steel	1261	8	1116	9
10	Cereal	1229	9	1958	5
88	Aircraft and Space	971	10	240	27

Source: Ministry of Trade

Growth of exports and imports over the last few years is partly attributable to the increasing volume of exports and export unit prices of commodities. Based on the goods performance of this trade, the government was targeting export growth of 20% in 2014. Of course, the achievement of these targets implies policy implementation being well organized.

Accordingly, the purpose of this study is to examine the relationship between the existence of a policy, in this regard, the policy of trade liberalization, on the growth of exports and imports. The relationship will be examined in both the long term and the short term. Estimates of the long run will use the Johansen Cointegration Test while the short-term estimation will use the error correction model (error correction model) by Engle-Granger. The observation period will be from 1986 to 2012 using quarterly data. Sources of secondary data are obtained from the Statistics Indonesia, the International Monetary Fund and the Ministry of Trade.

Given the background of the issues explored above, we tries to see the process of trade liberalization in Indonesia with the title: Trade Liberalization policy: The Effect of Trade Policy Liberalization on Growth Rate of Export-Import in Indonesia.

2.1.2 Problem Formulation

Based on the background research that has been presented at the beginning, the research problems can be identified as follows:

- a) Does trade liberalization affect the rate of growth of exports and imports in the short term
- b) Does financial liberalization affect the growth rate of exports and imports in the long run
- c) Does World GDP affect the growth rate of exports in the long term and short term
- d) Does Indonesian GDP affect the growth rate of imports in the long term and short term

2.1.3 Research Objectives

In accordance with the problems in this study, the purpose of the study is as follows:

- a) To determine whether there is long-term and short-term relationship between trade liberalization and the growth rate of export-import for Indonesia.

- b) To determine whether there is long-term and short-term relationship between trade liberalization and the growth rate of export-import for Indonesia.
- c) To determine whether there is a short-term relationship between world GDP and the export growth rate of Indonesia
- d) To determine whether there is a long-term relationship between Indonesian GDP and the growth rate of the country's imports

2.2 Conceptual Framework

2.2.1 International Trade Review

Based on the theory of international trade, the main motivation for the conduct of international trade is obtaining gains from trade-increase revenue and decreasing costs. International trade gives access to cheaper goods for consumers and owners of resources to obtain an increase in income due to declining production costs (Appleyard *et al.* 2006).

The presence of foreign trade will have a positive impact on a country in the following forms:

- a) a means of improving the welfare of its society through the exchange process;
- b) the specialization and division of labor, a country can export the commodity, more cheaply-produced goods are exchanged with other countries, which produce their own if they are expensive;
- c) as a result of the expansion of product markets and the shift in activities, a country derives the advantage in terms of higher levels of national income, which in turn can increase the output and the rate of economic growth;
- d) to encourage increased investment and savings through the more efficient allocation of resources

There are indirect benefits such as a desire to produce goods with better quality, the creation of a climate of fair competition, inflow of foreign capital, improved technology and so on.

The foundation of international trade theory is behind the liberalization movement. Among these theories are those of comparative advantage and factor endowments. David Ricardo refines the theories of Adam Smith's absolute advantage to propose a theory of comparative advantage. The theory of comparative advantage states that in a state of free trade, if one country is less efficient than other countries in producing both goods, it is still possible for both countries to trade and benefit both parties.

The first country will specialize in the production of commodities whose absolute disadvantage is smaller (this is called commodity as a comparative advantage) and import commodities where its absolute disadvantage is greater (this is commodity as a comparative disadvantage) (Salvatore, 2007).

Heckser-Ohlin argued that a country carries out international trade because of differences in endowment. The difference between the opportunity cost of a product of a country compared to another can occur because of differences in the number or proportion of owned factors of production (endowment factors) of each country. These differences lead to international trade. Countries that have relatively more factors of production and cheap ones will specialize in producing and exporting goods production. Instead, each country will import certain goods if the country has a factor of production which is relatively rare and expensive in producing it (Salvatore, 2007).

The purpose of a trade liberalization policy taken by a country reflects the movement towards a more neutral, liberal or open environment. In particular, the change to a more neutral situation includes incentives (on average) between the sectors of trade. A policy regime is considered a policy of liberalization when the overall level of intervention is on the wane. In addition, liberal policies can also be marked by the growing importance of the role

of trade in the economy. Liberalization policies can be achieved in several ways such as reducing barriers to trade or the adoption of export subsidies (Santos and Thirwall, 2004).

Research conducted by Krueger (1978) and Bhagwati (1978) was the first organized study to formalize the classification of the policy. They interpret trade liberalization policies as policies that reduce the level of anti-export bias that focuses on reducing the premium import licenses (PR). The orientation of a country's trade policy is measured by the level of protection structures and incentive systems which are put in place.

In 1987, the World Bank conducted a study on trade-policy orientation of the countries in the world. Based on the orientation of their trade and export performance, the World Bank classified countries into four groups: strongly outward-oriented countries, moderately outward-oriented countries, moderately inward-oriented countries and strongly inward-oriented countries. Indonesia, in the period 1963- 1973, was in the group of moderately outward- oriented countries while in 1973-1985 it became moderately inward-oriented. The World Bank concluded that the relatively outward-oriented countries have a better performance than the states that are categorized as inward-oriented.

From the point of view of the theory of the policy, trade barriers cause distortions to the economy that lead to the misallocation of resources in the world. Distortion is greater if the country is small: that is, the country cannot affect the behavior of other countries through its policies. This is behind the reasons to protect new industries in the country. Trade barriers continue to generate distortion.

With regard to the measures taken by the state, they can be divided into two groups: a policy of import substitution or one of export expansion. Import substitution policies are often associated with the protection and expansion of exports. In practice, the policy of protection by increasing rates is difficult. A country which plans to impose trade barriers such as tariffs

should consider the reciprocal effect if other countries do the same thing (Nency and Pietrobelli, 2008).

Policies in the context of liberalization can be grouped into two, namely those done globally and unilaterally, and those conducted bilaterally or regionally. Globally-applicable policies pertain to the agreement decided at the WTO and are unilaterally implemented by the state. A regional or bilateral policy is one that is implemented on the base of bilateral or regional agreements.

The concept of the policies applied in this study is divided into two components. The first component is an indicator of liberalization policies that can be quantified, namely export taxes and import duties. The second component is an indicator indicating the implementation of the liberalization policy.

Empirical research on the effect of trade liberalization on export development conducted by Bleaney (1999) and Santos-Paulino (2002a), using data panel models, shows that liberalization has a positive and significant effect on the development of exports. Export taxes have a less significant impact on price changes and the growth of the world income has significant effect.

Faini *et al.* (1995) analyzed the effect of trade policies on imports and recommended conducting research on the development of inserting import liberalization policy variables. In contrast to the effect of an export tax on export development, research by Santos-Paulino (2002a) showed that tariffs significantly influenced the development of the import regime, but the amount depends on the policy of each country and the removal of trade barriers against imports has positive effects.

Studies of the impact of trade liberalization policies on the economy of Indonesia conducted by Feridhanusetyawan and Pangestu (2003) used a global model, Computable

General Equilibrium (CGE) with the Global Trade Analysis Project (GTAP) version 3. In this model, the economy is divided into 19 regions and 12 commodities with four policy scenarios. The study concludes that trade liberalization causes the trade balance to increase by amounts ranging between US \$ 433 million to \$ 450 million depending on the scenario run. In other words, exports and imports will increase, but the increase in exports is greater than imports. In the fourth scenario, Indonesia's exports increased by about 29-37%.

Research by Santos-Paulino and Thirwall (2004) on 22 developing countries in Africa, Latin America, East and South Asia shows that the reduction in tariff / import duties affect the growth of imports. The policy of trade liberalization is measured in two ways: export taxes and tariffs as well as a dummy variable indicating the entry into force of liberalization policies in each country. The results showed that more liberal trade policies promote the growth of exports and imports, but import growth is higher than exports.

2.2.2 Trade Liberalization, Economic Growth, and National Welfare

Under certain circumstances, a country's overall welfare is in some sense improved by freer trade, which should thus be viewed as desirable. In the simplest terms, the welfare gains from trade come from the fact that a country that moves from autarky to free trade gets to trade at a price ratio different from the autarky price ratio. As a result, this must make a country better off. This is the most basic form in which a country enjoys welfare benefits from moving from autarky to free trade. Opening up to trade offers an opportunity to trade at international prices rather than domestic prices. This opportunity in itself offers a gain from exchange, as consumers can buy cheaper imported goods and producers can export goods at higher foreign prices. Further, there is a gain from specialization as the new prices established in free trade encourage industries to reallocate production from goods that the closed economy was producing at relatively high cost to goods that it was producing at relatively low cost. Thus, the static gains from trade arise from shifting the mixed outputs toward goods of

comparative advantage, by holding fixed the economy's technology and endowments so its production possibility frontier (PPF) remains static, while permitting consumers to take advantage of the new price. However, the fact that technological change is endogenous means that a move from autarky to free trade has additional dynamic welfare effects. The static analysis ignores many dynamic consequences of trade liberalization. There are many authors suggesting that a dynamic setting free trade is harmful to economic growth. For instances, Findlay (1980) presents the use of a dynamic two-region model, each region producing a distinctly different product. In order to embody interregional differences, he proposes that the labor markets of each region have dissimilar structures. Specifically, the North is assumed to manufacture the investment good using the services of all available capital and labor. In contrast, labor is in perfectly elastic supply at a constant real wage in the South, a primary consumption-good producer. By assuming these asymmetries between regions, he develops a vigorous formal analysis and shows that trade is the engine of growth for the South. The power of the engine is determined, however, by the natural growth rate of the North, and in this sense the South does not have its own growth engine. Technological improvements also have asymmetrical results. Hicks-neutral or Harrod-neutral shifts in the production function of the North leave the terms of trade unchanged in the long run and increase its real per-capita income. In the South, however, a Solow-neutral shift in the production function leads to a proportional decline in the terms of trade and brings about a decrease in its real per-capita income measured in terms of manufactured goods.

Another well-recognized dynamic analysis of welfare gains from freer trade is Krugman (1981). In order to show that initial discrepancy in capital-labor ratios of the two adjacent, competing regions will cumulate over time, and will inevitably lead to the division into the capital-rich, industrial region and capital-poor, agricultural region, he develops a two-region model of uneven regional development and examines the effect of international trade upon the world distribution of income when there are external economies to physical capital

accumulation in the manufacturing sector. That is, more-industrialized countries cumulatively accumulate capital faster than less-industrialized countries under the assumption of increasing return of technology. In his model, there are two countries, North and South, which have the same amount of labor force and produce two goods, a manufacturing good and an agricultural product. A single world price of manufacturing goods in terms of agricultural products is assumed. In other words, a single world price of agricultural products is set to unit. Manufacturing production is assumed as a function of capital input and labor input, and its technology is increasing return, while agricultural products are assumed to be produced by labor alone. In addition, labor forces are assumed to consume agricultural goods alone, and their saving ratios are zero which puts unit labor cost at one. Under these assumptions, he first investigates the North-South relationship by assuming there is international trade but no international capital movement. Because the profit rate of the manufacturing sector of the North is higher than that of the South, capital accumulation in the North is faster than in the South. If the North-South relation starts where Northern capital stock is larger than Southern capital stock, northern manufactures will grow faster and finally the North will become an industrial region and the South will be specialized in agriculture (or at least a less-industrial region). He then allows international investment by assuming the movement of capital between two regions. With capital mobility, there is a two-stage pattern of development in which trade is the engine of growth in North through increasing exports of manufactures in the first stage and then exports of capital in the second stage, suggesting the justification of imperialism. In conclusion, freer trade in a dynamic aspect might enable a country (which is initially a “rich” country) to grow faster than others (which are mostly “poor” and underdeveloped countries) and this is the Krugman’s theory of uneven development.

The concern that freer trade possibly leads to unequal development was also proposed by Matsuyama (1992). In general, sectors differ in the degree of increasing returns to scale and in growth potential. When freer trade leads to specialization in sectors with low growth

potential, it may have detrimental effects. Similarly, trade liberalization can lead to the agglomeration of industrial increasing returns to scale activities in few countries and this may have an adverse effect in the remaining regions of the world. Countries which have comparative disadvantage in industrial sectors, especially less developed and developing countries, have a higher risk of suffering from the negative impact of trade liberalization and globalization. From this concept, Matsuyama (1992) constructs a model of a two-sector economy, agriculture and manufacturing, with endogenous growth to demonstrate that a country specializing in agriculture may be worse off after trade than in autarky. The key assumption of the model is that the industrial sector is the engine of growth because of the concept of learning by doing. He shows that high agricultural productivity is beneficial in a closed economy, as it releases resources that can be employed in the industrial sector. However, it may be detrimental for a small open economy, as it may induce specialization in agriculture.

For the closed economy case, higher agricultural productivity, which is assumed to be exogenous, translates into higher growth by shifting labor to manufacturing. However, for the small open economy case, the small open economy will grow faster than the world economy if it has a comparative advantage in manufacturing productivity and vice versa, because growth is proportional to the fraction of labor employed in manufacturing. Freer trade expands the sector of comparative advantage and then learning by doing amplifies the initial comparative advantage. So, an economy with less-productive agriculture allocates more labor to manufacturing and will grow faster. Thus, in this case, there is a negative link between agricultural productivity and growth.

2.3 Methodology

2.3.1 Research Model

Following the relevant literature (see, for example, Carone (1996); Bahmani-Oskooee and Niroomand (1998); and Santos-Paulino and Thirlwall (2004)), we use the standard import and export demand functions to analyze the impact of trade liberalization on the volume of imports and exports for Indonesia. The standard specification of the import and export demand models is similar to any other demand model. The quantity of imports and exports demanded will be treated as endogenous variables while the relative price of imports (price of imported goods relative to the price of domestic goods), the relative price of exports (price of exported goods relative to the world export price), world's real income and country's real income will be considered as exogenous variables. By assuming the price and income elasticities of demand are constant over time, the import function can be specified as follows:

$$M_t = A \left[\frac{P_M}{P_D} \right]_t^{a_1} Y_t^{a_2}$$

where M_t is the volume of imports at time t ; A is a constant; (P_M/P_D) denotes relative import prices at time t ; Y_t is Indonesia real GDP at time t .

Regarding the appropriate specification of import demand, there is no theory providing a specific functional form for this demand function. However, Thursby and Thursby (1984) test specifications of import demand and conclude that the log-linear form is more desirable than the linear form. Other advantages of the logarithmic form are their convenience and the ease of interpretation (Carone 1996). Thus, following previous studies (Boylan *et al.* 1980), taking the logs of the above function, the import function can be transformed into logarithmic form as follows:

$$\ln M_t = \beta_0 + \beta_1 \ln PM_t + \beta_2 \ln Y_t + \varepsilon_t$$

where PM_t is the relative price for imports, μ_t , ε_t is the stochastic error term.

Modifications to the original model are then inserted: liberalization policy indicators such as import duties as well as the implementation of a policy to analyze the impact of liberalization on the growth of exports and imports. The long-run import research equation is then specified as follows:

$$\ln M_t = \beta_0 + \beta_1 \ln PM_t + \beta_2 \ln Y_t + \beta_3 \ln MD_t + \beta_4 LIB_t + \beta_5 LIBPM_t + \beta_6 LIBY_t + \varepsilon_t$$

where LIB_t represents dummy variable for trade liberalization. There are LIB_{88} , LIB_{95} , LIB_{98} for which year trade liberalization applied, $LIBPM_t$ denotes slope dummy variable elasticity of imports to the price, $LIBY_t$ denotes slope dummy variable elasticity of imports to income.

As for the export demand model, again following the literature, we assume that the main determinants of a country's exports are relative export prices and world income. Thus, we assume that the export demand function can be represented as follows:

$$X_t = B \left[\frac{P_X}{P_{XW}} \right]_t^{D_1} Y_t^{D_2}$$

where X_t is the volume of exports at time t ; B is a constant; (P_X/P_{XW}) is export price relative to world export price at time t ; W_t is world real GDP at time t .

Following the same approach used for the import demand function, the export demand function takes the following form after taking logs:

$$\ln X_t = \alpha_0 + \alpha_1 \ln PX_t + \alpha_2 \ln YW_t + \mu_t$$

where PX_t is the relative (export) price (to world export price).

Then, we modify the original model by inserting liberalization policy indicators such as export duties and import duties, as well as the implementation of a policy to analyze the impact of liberalization on the growth of exports and imports. The long-run export research equation is then specified as follows:

$$\ln X_t = \alpha_0 + \alpha_1 \ln PX_t + \alpha_2 \ln YW_t + \alpha_3 \ln XD_t + \alpha_4 LIB_t \\ + \alpha_5 LIBPX_t + \alpha_6 LIBYW_t + \mu_t$$

where LIB_t represents dummy variable for trade liberalization. There are LIB_{88} , LIB_{95} , LIB_{98} for which year trade liberalization applied, $LIBPX_t$ denotes slope dummy variable elasticity of exports to the price, $LIBYW_t$ denotes slope dummy variable elasticity of exports to income.

To estimate the short-run model for this study, it is necessary to estimate the error correction model. Thus the error correction model result demonstrates the speed of adjustment back to the long-run equilibrium after a disturbance. Thus the expected short run imports and exports are indicated by these equations:

Imports:

$$\Delta \ln M_t = \beta_0 + \sum_{i=0}^n \beta_1 \Delta \ln M_{t-1} + \sum_{i=0}^n \beta_2 \Delta \ln PM_{t-1} + \sum_{i=0}^n \beta_3 \Delta \ln Y_{t-1} + \sum_{i=0}^n \beta_4 \Delta \ln M_{t-1} \\ + \beta_5 L_{86} + \beta_6 L_{95} + \beta_7 L_{98} + \beta_8 L_{tP} + \beta_9 L_{tY} + \beta_{10} E_{t-1} \\ + \varepsilon_t$$

Exports:

$$\Delta \ln X_t = \alpha_0 + \sum_{i=0}^n \alpha_1 \Delta \ln X_{t-1} + \sum_{i=0}^n \alpha_2 \Delta \ln PX_{t-1} + \sum_{i=0}^n \alpha_3 \Delta \ln Y_{t-1} + \sum_{i=0}^n \alpha_4 \Delta \ln X_{t-1} \\ + \alpha_5 L_{86} + \alpha_6 L_{95} + \alpha_7 L_{98} + \alpha_8 L_{tP} + \alpha_9 L_{tY} + \alpha_{10} E_{t-1} \\ + \mu_t$$

where \ln represents natural logarithm, t is time subscript, ECT_{t-1} is the error-correction term; the residuals from the co-integration equation lagged one (1) period. The α_1 to α_9 and β_1 to β_9 are the elasticities of the respective variables while α_{10} , β_{10} are the speed of adjustment to the long-run equilibrium following a shock to the system. μ_t , ε_t is the stochastic error term, α_0 and β_0 is the drift component and Δ is the difference operator. The coefficient of the lagged error correction term is expected to be negative and statistically significant to further confirm the existence of a cointegrating relationship.

2.3.2 The Data

The study uses secondary data. Quarterly series is generated from an annual series. Time series data runs from 1986Q1 to 2012Q4. All the series for the various variables are obtained from Statistical Indonesia, Ministry of Trade, World Bank and IFS-IMF. The study adopted the Johansen approach to cointegration to obtain both the short- and long-run estimates of the variables involved. The data set consists of the following items:

Exports (X):

Volume of exports of goods at constant prices with 2000 as the base year. The unit is in million tons. The source is Statistical Indonesia. Export means activities to take goods out of the Customs Territory.

Imports (M):

Volume of imports of goods at constant prices with 2000 as the base year. The unit is in million tons. The source is Statistical Indonesia. Import means activities to take goods into the Customs Territory.

Domestic Income (Y):

Indonesia GDP at constant prices with 2000 as the base year. The unit is in million USD. The source is the World Bank.

World Income (YW):

World GDP at constant prices with 2000 as the base year. The unit is in million USD. The source is the World Bank.

Relative Import Price (PM):

Relative Import Price used in the import demand function is the ratio of import price to domestic price (P_M/P_D), where P_M (Indonesia's import price index) is defined as import unit values; and P_D (Indonesia's domestic price index) is defined as consumer price indices. Both import unit values and consumer price indices are measured in index number form and the selected base year is 2000. The source of international price index data is the IMF's International Financial Statistics (IFS).

Relative Export Price (PX):

Relative Export Price used in the export demand function is the ratio of export price to world export price (P_X/P_{XW}), where P_X (Indonesia's export price index) and P_{XW} (the world's export price index) are defined as export unit values of Indonesia and the world, respectively. Both indices are measured in index number form and the selected base year is 2000. The source of export price index data is the IMF's International Financial Statistics (IFS).

Export Duty (XD):

Ratio of export duty income to export value. The source is Statistical Indonesia.

Import Duty (MD):

Ratio of import duty income to import value. The source is Statistical Indonesia.

Trade Liberalization Dummy (LIB):

The policy conducted by Indonesia in the field of trade related to eliminating or reducing trade barriers. The years used are 1986, 1996 and 1998 where the variable is 0 at the prior year and 1 after the policy is implemented.

2.3.3 Method of Analysis

The analysis techniques used in this study are included in the analysis of time series data clumps (time series analysis) with the analytical tools used in general that approach the Cointegration and Error Correction Model.

2.3.3.1 Unit Root Tests

In a time series model, the presence of a unit root causes a violation of the assumptions of the classical linear regression model. A unit root means that the observed time series is not stationary. When non-stationary time series are used in a regression model, one may obtain apparently significant relationships from unrelated variables. This phenomenon is called the spurious regression problem.

The first stage involves testing for stationarity of each time series variable. A test of stationarity of time series data that has become the most popular in econometric analysis is the unit root test. Dickey and Fuller (1981) provide a formal procedure to test for the presence of a unit root. In the DF test, it is assumed that the error term is uncorrelated. However, the DF test is only valid for an AR(1) process. In the case that the time series is correlated at higher lags, Dickey and Fuller have developed a test by adding lag differences of the time series, known as the Augmented Dickey-Fuller (ADF) test. The ADF test provides the

appropriate tests statistics to determine whether a series contains a unit root, unit root plus drift, and/or unit root plus drift plus a time trend. In order to choose the optimum lag length for the ADF test, the Akaike and Schwartz Information Criteria (AIC and SIC, respectively) is normally considered. In this study, we consider only the lowest value of SIC.

2.3.3.2 Analysis of Cointegration Model

Empirical studies examining the long- and short-run relationship between two or more time series variables are generally based on cointegration and the standard Granger causality tests. This study uses the Johansen and Juselius (1990) cointegration procedure. Prior to testing for causality, the unit root test is implemented to determine the order of integration of the individual series and cointegration tests to control for long-run relationship. When cointegration exists, the relationship between the variables is transformed into an error correction model to take care of the short-run dynamics and the parameters associated with the causality identified (Engle and Granger 1987; Johansen and Juselius, 1990). A good rationale for using the Johansen and Julius (1990) procedure is the fact that our variables under investigation are all integrated of the same order, $I(1)$. The Hendry-type testing-down (general-to-specific) procedure may be used to specify the short-run relationship correctly. This involves specifying a general model which includes all variables that influence the phenomenon being investigated.

Johansen (1988) and Johansen and Juselius (1990) developed the multivariate method that explicitly used the vector autoregressive (VAR) and the vector error correction (VECM) framework for the testing of the presence of cointegration and estimation of long-run and short-run relationships among non-stationary macroeconomic time series. Moreover, both long-run (cointegration) relationships and short-run dynamics of the variables in the system can be established.

Cointegration model analysis was intended to determine whether there is a balance in the long run on the model used, that is, by testing its stationarity error term. In this study, the method estimating a long-term relationship is done by using the Engle-Granger method. The stationarity test is needed to determine if all the variables included in the analysis have an average value and variance is constant over time. Constant average value and the variance of each variable are needed to identify short- and long-term relationships between variables. A non-stationary variable will cause the regression results obtained to be invalid, so the regression coefficients cannot be interpreted.

2.3.3.3 Analysis of Error Correction Model (ECM)

The analysis technique used to observe the effect of the exchange rate on the trade balance is the Error Correction Model (ECM). The Method Error Correction Model is a single regression that connects first differential on the independent variable (DYT) and variable levels postponed (lagged level variables = X_{t-1}) for all variables in the model. The selection of the ECM is based on the consideration that the data to be used are time series (time series data).

2.4 Results and Discussions

2.4.1 Empirical Analysis

2.4.1.1 The Unit Root Test

We use the well-known Augmented Dickey-Fuller (1981) tests to identify the order of integration of each variable. The test results are reported in Table 2.3. The test results of ADF use intercept and trend with the Mc Kinnon critical value (1%, 5% and 10%) indicating that there is not enough evidence to reject H_0 , thus all the variables contain unit root. This means that the variables export, import, world GDP, Indonesia GDP, relative price of export, relative price of imports, export duties and import duties are not at a stationary level.

2.4.1.2. The Order of Integration Test

As a first step, we need to determine the order of integration for each of the variables used in the analysis. This is to ensure that all of the variables are $I(1)$; an important requirement of the Johansen and Juselius (1990) test approach.

Table 2.3 Unit Root Test and Tests for the order of integration

Variable	Level	First Diffrence	Degree of Integration
	t-statistic	t-statistic	t-statistic
LX	-2.74	-17.02	$I(1)^*$
LM	-2.52	-12.12	$I(1)^{**}$
LYW	-3.05	-3.30	$I(1)^*$
LY	-1.82	-3.89	$I(1)^{**}$
LPX	-2.69	-12.39	$I(1)^*$
LPM	-2.87	-9.11	$I(1)^*$
LXD	-2.89	-8.69	$I(1)^*$
LMD	-2.57	-7.98	$I(1)^{**}$

*Asterisks indicate statistical significance: *, **, ***: Significant at 10%, 5%, 1%*

2.4.1.3 Cointegration Test

To identify cointegration, this thesis test uses the Johansen cointegration test. Before testing the cointegration test, we predetermined the VAR optimal lag amount based on the equation. Once the optimal amount of lag is determined, this lag is used in the cointegration test.

From the results we can conclude that the optimal lag used for the export equation based on the Akaike Information Criterion (AIC) is lag 5. Trace test and maximum Eigenvalue explain the null hypothesis (H_0), which states there is no cointegration between variables rejected at the 95% confidence interval, so that the alternative hypothesis (H_1) is not

rejected. It means there is a long-run relationship between the variables identified in the export equation. Trace test indicates one cointegrating vector. This shows that world income, relative price and export taxes affect the volume of exports in the long term.

Table 2.4 Johansen's Cointegration Test (Trace) Result for Export Model

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	5% Critical Value
None **	0.293	80.85	62.99
At most 1 *	0.202	45.48	42.44
At most 2	0.147	21.55	25.32
At most 3	0.050	5.27	12.25

Trace Test indicates 2 cointegrating equation(s) at the 5% level and 1 cointegrating equation(s) at the 1% level
Note: **(*) denotes rejection of the hypothesis at the 5% (1%) level

Table 2.5 Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	5% Critical Value
None *	0.293	35.37	31.46
At most 1	0.202	23.92	25.54
At most 2	0.147	16.28	18.96
At most 3	0.050	5.27	12.25

Max-eigenvalue Test indicates 1 cointegrating equation(s) at the 5% level and no cointegration at the 1% level
Note: **(*) denotes rejection of the hypothesis at the 5% (1%) level

From the results we can also conclude that the optimal lag used for the export equation based on the Schwarz Information Criterion (SIC) is lag 2. Trace test and maximum Eigenvalue indicate that there is two cointegration significance at 95% confidence interval. It means that the null hypothesis (H_0), which states there is no cointegration between variables rejected at the 95% confidence level, so that the alternative hypothesis (H_1) is not rejected. It means there is a long-run relationship between the variables identified in the import equation. This shows that import volume is affected by relative price, domestic income and import duties in the long term.

Table 2.6 Johansen's Cointegration Test (Trace) Result for Import Model

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	5% Critical Value
None **	0.388	88.21	47.21
At most 1 **	0.192	36.58	29.68
At most 2	0.114	14.12	15.41
At most 3	0.013	1.41	3.76

Trace Test indicates 2 cointegrating equation(s) at both 5% level and 1% levels

Note: **(**) denotes rejection of the hypothesis at the 5% (1%) level

Table 2.7 Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	5% Critical Value
None **	0.388	51.62	27.07
At most 1*	0.199	22.46	20.97
At most 2	0.114	12.71	14.07
At most 3	0.013	1.41	3.76

Max-eigenvalue Test indicates 2 cointegrating equation(s) at the 5% level and 1 cointegrating equation(s) at the 1% level

Note: **(**) denotes rejection of the hypothesis at the 5% (1%) level

Although there is more than one cointegration vector, this study only analyzes one cointegration vector. The long-run export equation, which uses a variable world GDP, did not give the best results. After the world income is proxied by GDP, Indonesia is the largest trading partner of Japan, USA and Singapore. The long-run equation of exports based on the results of cointegration test is:

$$\ln X_t = -1.33 \ln PX_t^{**} + 9.86 \ln YW_t^* - 0.29 \ln XD_t^{***}$$

t-stats (1.98) (1.72) (4.17)

The resulting coefficient, the coefficient of elasticity of exports to each explanatory variable for the export equation form above is double-log linear. The coefficient of elasticity of exports relative to the price is -1.33. This means that any increase in the relative price of 1% on a quarter, , will reduce the export volume by 1.33% (relatively) in the long term. Relative price variables are significant at 95% confidence level.

The coefficient of elasticity of exports to world income is 9.86. This means that every increase in world income by 1% on a quarter, , will raise the export volume amounting to 9.86% in the long term. The world income variable is significant at the 90% confidence level. The coefficient of elasticity of exports to the export duties amounted to 0.29. This means that any increase in export tax of 1% on a quarter, , will reduce export volume 0.29% (relatively) in the long term. Variables significant for export tax are at 99% confidence level.

The long-run equation for imports is as follows:

$$\ln M_t = -.035 \ln PM_t^{***} + 0.98 \ln Y_t^{***} - 0.29 \ln MD_t^{***}$$

t-stat (2.33) (8.90) (4.83)

The resulting coefficient, the coefficient of elasticity of imports to each explanatory variable for the import equation form above is double-log linear. All variables are significant at 95% confidence level. The coefficient of elasticity of imports to relative price is -0.35. This means that every relative price increase of foreign goods to domestic goods of 1% on a quarter, , will reduce the import volume amounting to 0.35% in the long term. The coefficient of elasticity of imports to import duty is -0.29. This means that every import-duty increase of 1% on a quarter, , will reduce the import volume amounting to 0.29% (relatively) in the long term.

2.4.1.4 Error Correction Model

Above it was noted that if a set of observed variables is cointegrated, then there is a long-term relationship between these variables to establish equilibrium. However, in the short-term it is possible there is an imbalance where economic agents require adjustment in order to return to equilibrium. To observe the dynamic behavior of the short-term variables observed, the error correction model can be used because this model uses adjustments to correct the disequilibrium which has occurred.

Table 2.8 Summary of Error Correction Model for Export Model

Variable	Coefficient
D(LX(-1))	-0.36*** (-3.61)
D(LPX(-1))	0.07* (1.33)
D(LY(-4))	8.26** (2.06)
D(LXD(-2))	-0.03* (-1.76)
D(LXD(-3))	0.03* (1.93)
Lib86	-4.41** (-2.34)
Lib95	-0.10* (-1.79)
Lib98	-0.10* (-1.61)
Liby86	0.51** (2.34)
ECT(-1)	-0.26** (-2.45)
CONSTANT	-0.02* (-0.56)
R-squared	0.40
Adjusted R-squared	0.34
Durbin-Watson Stat	2.14
Prob	0.00

Note: the numbers in parentheses are t statistics

*Asterisks indicate statistical significance: *, **, ***: Significant at 10%, 5%, 1%*

Or the equation can also be written as:

$$\begin{aligned}
\Delta \ln X_t = & -0.021^* - 0.36 \Delta \ln X_{t-1}^{***} + 0.072 \Delta \ln PX_{t-1}^* + 8.26 \Delta \ln Y_{t-4}^{**} - 0.032 \Delta \ln XD_{t-2}^* \\
& + 0.035 \Delta \ln XD_{t-3}^* - 4.409 \text{LIB86}^{**} - 0.1 \text{LIB95}^* - 0.1 \text{LIB98}^* \\
& + 0.506 \text{LIBYW86}^{**} - 0.26 \text{ecm}_{t-1}^{**}
\end{aligned}$$

Error correction model results for the import equation are in the following table:

Table 2.9 Summary of Error Correction Model for Import Model

Variable	Coefficient
D(LM(-4))	0.13** (2.05)
D(LPM)	-0.47*** (-2.99)
D(LPM(-1))	-0.40*** (-2.58)
D(LY(-1))	6.35*** (4.80)
D(LMD)	-0.63*** (-5.85)
D(LMD(-1))	-0.37* (-3.39)
Lib86	-0.01 (-0.26)
Lib95	-0.07** (-1.66)
Lib98	2.75*** (3.22)
Liby98	-0.68*** (-0.38)
ECT(-1)	-0.79*** (-8.81)
CONSTANT	-0.09** (-2.48)
R-squared	0.61
Adjusted R-squared	0.57
Durbin-Watson Stat	2.14
Prob	0.00

Note: the numbers in parentheses are t statistics

*Asterisks indicate statistical significance: *, **, ***: Significant at 10%, 5%, 1%*

Or the equation can also be written as:

$$\begin{aligned}
\Delta \ln M_t = & -0.08^{**} + 0.12 \Delta \ln M_{t-4}^{**} - 0.46 \Delta \ln PM_t^{***} - 0.40 \Delta \ln PM_{t-1}^{***} + 6.35 \Delta \ln Y_{t-1}^{***} \\
& - 0.63 \Delta \ln MD_t^{***} - 0.37 \Delta \ln MD_{t-1}^{*} - 0.01 \text{ LIB86} - 0.075 \text{ LIB95}^{**} + 2.75 \text{ LIB98}^{***} \\
& - 0.68 \text{ LIBY98}^{***} - 0.79 \text{ ecm}_{t-1}^{***}
\end{aligned}$$

The variable lag of exports to the previous quarter negatively affect the export variation at 99% confidence level. Variable income of the world's four previous quarters and world income elasticity towards liberalization had a positive effect on export growth in 1986. Moreover, the dummy policies negatively affect export growth at 95% confidence level.

Export tax policies in 1995 and the dummy significantly affect export growth at 90% confidence level.

The coefficient of error correction term (ECT) export equation which shows the speed of adjustment is negative and amounted to -0.26, is statistically significant at 95% confidence level. This means 26% of the imbalance in the previous quarter was corrected in the current quarter.

Relative price, income, import duties, the policy dummy variable in 1998 and income elasticity had positive effect on imports at 99% confidence level. The variable of import lag and lag variable rates are significantly relative to the previous quarter at 95% confidence level, whereas the 1995 policy dummy negatively affects imports at 90% confidence level. ECT coefficients of import equation are negative and significant imports amounted to -0.79 at the 99% confidence level. It means that an imbalance in the previous quarter was corrected in the current quarter.

2.4.1.5 Diagnostic Test

The short-term equation, which has been formed as a model to be tested against the assumptions of the classical OLS method, is a good model statistically and provides results that are categorized as a best estimate of the coefficient of best linear unbiased estimator (blue). Based on the test results, the equations of short-term export and import are made and have not encountered serious problems, passing all tests for classical assumption violation.

Table 2.10 Diagnostic Test for Export Model

Diagnostic	Statistic	Conclusion
Multicollinearity test	Correlation coefficient value (pairwis) < 0.8	No Multicollinearity
Heterokedasticity test	F-statistic= 0.37 (Obs*R ² = 0.35)	No Heterokedasticity
Breusch-Godfrey Serial Correlation LM Test	F-statistic= 0.14 (Obs*R ² = 0.11)	No Serial Correlation
Multivariate Normality	Jarque-Berra test = 0.74 (Prob=0.68)	Residuals are normal

Source: Author's calculation

Table 2.11 Diagnostic Test for Import Model

Diagnostic	Statistic	Conclusion
Multicollinearity test	Correlation coefficient value (pairwis) < 0.8	No Multicollinearity
Heterokedasticity test	F-statistic= 0.11 (Obs*R ² = 0.12)	No Heterokedasticity
Breusch-Godfrey Serial Correlation LM Test	F-statistic= 0.27 (Obs*R ² = 0.23)	No Serial Correlation
Multivariate Normality	Jarque-Berra test = 5.10 (Prob=0.07)	Residuals are normal

Source: Author's calculation

2.4.2 Analysis of Export and Import Demand

2.4.2.1 Long-Term Effect

Relative price. The relative price on the export and import equation, which is the real effective exchange rate, negatively affects export volumes to the value of the coefficient of elasticity of -1.33 for the export equation. The coefficient of relative export prices showed above one (>1), meaning changes of price affect export volume changes.

The prices of main commodity exports decreased from 1997 to mid-1999. During this period, the price of shrimp, coffee and fish went down respectively 22%, 9% and 17%. While the price of manufactured products such as plywood fell by 15%, textiles decreased 40%, most processed rubber decreased approximately 46%, palm oil was 9% down, paper and paper products also fell 18%.

A decrease in the price of minerals including copper and coal fell respectively by 42% and 36%. Indonesian primary products such as copper, coal, plywood and rubber were the commodities that experienced the worst decline. The fall of such commodity prices, contributing to major Indonesian export volumes, meant they also decreased in the period. Thus, the relative price increase is very influential for Indonesia's exports in the long-term.

The coefficient of relative price of imports is -0.35. Changes in relative prices significantly influence the volume of imports although they were not elastic. It means a change in the terms of trade and the exchange rate did not greatly affect the rise or fall of the volume of imports. The influence was seen empirically when the crisis hit Indonesia in 1998. With the depreciation of the rupiah, the price of imported goods became more expensive relative to the price of domestic goods. However, since the majority of Indonesian imports were imported auxiliary raw materials and capital goods, even if they were expensive, they were still imported. Therefore the effect of the price relative to the volume of imports becomes inelastic.

In the early 1980s, imports of raw materials and auxiliary goods in terms of volume had an average share of above 90% of total imports, while in terms of value they had an average share of about 74% of total imports. The share of imports of capital goods in terms of volume was only 1.9%, but when viewed in terms of value it reached 19%. The rest of the market share was held by imports of consumer goods.

The high dependence on imports of raw and auxiliary materials and capital goods led to the volume of imports dropping since the fourth quarter of 1984 and they increased again in the third quarter of 1998. Therefore, the relative price has a significant role in the change of the volume of imports but it is not elastic.

The fall in the value of imports of machinery (HS 84) indicates that the capacity of the processing industry which uses the machines has not been growing rapidly and may indicate also that investment in the real sector is not yet satisfactory. Thus the price factor plays an important role in determining the level of import

World income and domestic income. World and domestic income provides a significant and positive influence on the volume of exports and imports with coefficients respectively at 9.86 and 0.98. This means that the growth of exports and imports of Indonesia is strongly influenced by world and domestic income.

World economic conditions, especially those of the economies of the main trading partners, will affect Indonesia's exports. Since 1986, Indonesia's export-destination countries have not experienced a fundamental change in terms of both volume and value. Two countries which are major trading partners are Japan and USA. Until 2006, as proportions of Indonesia's total export value, exports to Japan reached 21.56%; USA, 11.14%; ASEAN amounted to 18.34% and the EU 11.87%.

Countries as potential export destinations are the ASEAN countries. The proportion of exports to Singapore, Malaysia and Thailand reached 14% of Indonesia's total exports. Exports to other Asian countries also increased rapidly reaching 27% of the total value of exports. This is due to the increase in exports to China. While in the 1980s the Chinese were not in the top ten of Indonesia's main export destinations, in 2006, the Chinese position was ranked 4th. The same phenomenon is true for India which was ranked 7th as an export destination in 2006.

The world's high income-elasticity coefficient indicates the importance of attention to economic growth of Indonesia's major trading partners. This relates to the factors of demand for Indonesian export goods. The decline in the performance of the world economy, especially among Indonesian trading partners, will affect export performance. The rise in domestic income growth will raise imports by 0.98%, and vice versa. With an almost elastic coefficient of domestic revenue to imports, it can be stated that the development of domestic economic growth will affect imports. Empirical evidence for this occurred when the crisis hit Indonesia in 1997-1998. Indonesian GDP was minus 13% in 1998 and its affect was a decline in the volume of imports in the period of up to -13.37%, with the value of imports falling to -34.5%. With the improvement in economic growth after the crisis, the volume and value of imports increased.

Export Duty. Trade liberalization policies, as measured by export taxes, turned out to have a significant impact and is negatively marked with a coefficient of -0.29. This means that a 1% increase in export duty will reduce the export volume by 0.29%. There is an inelastic effect of the export duty on exports because only certain items are taxed exports such as timber, palm oil and coal. Export duties have a significant impact for exports such as wood. The export value with the HS 44 was ranked 2nd in 1986 and 1st in 1996, although in 2006 it was down to the rank 8.

The influence of the export tax on exports being non-elastic can also be caused due to the fact that the export tax is an instrument of trade policy which usually has short-term goals, so that in the long term, the effect is not elastic. For example, the increase in export tax imposed on CPO is intended to meet domestic needs. The government issued a policy to raise export taxes so that exporters do not export CPO. By taxing exports, domestic prices are relatively cheaper and exports will decline because exporters will reduce the amount exported for sale in the country. On the one hand, this is a favorable export tax for Indonesia because

Indonesia is a large country in terms of CPO commodities. On the other hand, the imposition of an export tax entails losses, causing Indonesian exports to drop.

Import duty. The coefficient value of import duty amounted to -0.29, meaning that if the duty increased, the imports would fall by 0.29%. Vice versa, if the duty lowered, imports would rise by 0.29% as well. Just like export duties, import duties also influence inelastic imports. Indonesia has reduced import duties gradually since deregulation in 1986. The maximum duty rate was lowered from 225% to 60% during the period 1986-1990. This concerns not only product manufacturing: the average import duty for unweighted agricultural products in 1995 was 19% and continued to decline, reaching 8.6% in 1998. In 1995, the number of tariff lines with duty 0.10% was 3,832, covering 51.88 % of total tariff lines.

Reduction of import duty impacts the increase in import volume. The biggest increase in import volume occurred in 1987 where the volume of imports increased by 31%. After 1995, the import volume increased by an average of 10% and in 1999 the volume of imports increased by 21%.

2.4.2.2 Short-Term Effect

1996 marked the beginning of a policy reform in Indonesia. Indonesia, in the 1970s until the mid-1980s, had a policy of import substitution. Until the early 1980s it continued to apply quantitative restrictions. After the oil shock of 1985, the government began trying not to be too dependent on revenues from oil and gas exports alone. The Government issued a package of measures to encourage the private sector in the field of non-oil exports and capital investment.

The Government embarked on a policy of deregulation on 23 May 1995 named Pakmei 1995. It included the lowering of tariffs and additional import duties, import regulation, entreport production, export/bonded zones and licensing. Pakmei 1995 contained a series of tariff reduction schedules from 1995 to 2003 where the import duty before 1995 of

25% -40% should be decreased to a maximum of 10% in 2003, while the maximum for import tariff heading with a duty of 5% -20% before the year 1995 should be 5%. A further external factor that encourages the implementation of further liberalization is tariff decline in multilateral agreements within the framework of the WTO. All members of the WTO should lower their tariff rates and in accordance with the constraints, non-tariffs should be quantified in the form of tariffs. Trade liberalization policies in the form of reduction in customs duties were unilaterally adjusted with Indonesia within the WTO commitments.

Both in exports and imports, in the short term, inaction (lag) is very influential. On export, the export of the previous quarters affects export quarterly growth now. Imports from four previous quarters affect the current quarterly imports. It is more realistic in the sense that exports and imports require adjustments to differences arising between the number of requests in the current quarter with the previous quarter. By doing so, exports and imports make partial adjustments to such differences.

Relative prices do not affect exports in the short term because in practice, export activities are activities that are tied to the employment contract. If there had been an agreement between exporters and importers, the price has no effect in the short term. Adjustments to price changes also cannot be immediately carried out by the exporter or producer because exporters cannot easily turn the use of the factors of production into inputs for the production process.

Without having effect on export prices, relative price affects imports in the short-term. The increase in prices will affect the growth of imports. In contrast to exporters, importers easily switch between inputs or factors of production if the price of imported goods is expensive. Nevertheless, the influence of relative prices in the short term as well as long-term is inelastic. This is because Indonesia has the largest proportion of imported raw material imports.

Import duty in the short-term is negatively related to imports. Together with the long-term, with the reduction or elimination of distortions to trade, one of which is import duty, then the more efficient allocation of resources means that the principle of comparative advantage applies. In free trade, countries will import goods that are not comparatively superior. A decrease in the current period and the duties of the previous quarter in the volume of imports will increase the current period. With more duties than the coefficient of export taxes in the short-term, the change in customs duties are more influential than the import tax in causing fluctuations in the volume growth of exports and imports.

A liberalization policy has a positive and significant impact on imports in the short-term. This is consistent with the hypothesis that liberalization will actually increase the volume of imports. Liberalization policies that reduce trade distortions in the direction of freer trade with the elimination of tariffs and non-tariff constraints will affect export-import. Especially after 1998 when various barriers, not only tariffs but also non-tariff constraints reduced the volume of imports to 21% in 1999.

The speed of adjustment of the export equation is 0.29% and the import equation is 0.79. This means that the adjustment of exports to return to equilibrium happens more slowly than imports. The ECT coefficient value of 0.29 for exports shows that the disequilibrium in exports in the last quarter will be corrected in the current quarter by 29%, while the disequilibrium in total imports in the last quarter will be corrected in the current quarter by 79%. Thus, imports return more quickly to equilibrium than exports.

2.5 Conclusions

This study aims to analyze the impact of trade liberalization policy variables on the development of exports and imports identify the variables which have the most impact in the short and long-term. In accordance with the objectives, it has done tests with cointegration analysis and the error correction model.

Trade liberalization policies which shift from a policy of import substitution to export promotion expansion is critical for the growth of exports and imports. In the long-term, trade liberalization policies which are measured through export taxes and import duties have a negative impact on exports and imports.

In the short-term, trade liberalization policies have a negative impact on exports and positive impact on imports, while in the long-term, the effect of trade liberalization policies on exports and imports are no different. Imports return faster to equilibrium than exports because of the error correction term value of imports being greater than exports. Policies would affect imports faster than exports because policies are often carried out unilaterally, while a slow adjustment to the export may mean that the obstacles for Indonesian exports are due to more than the supply side.

From the observation of the long-term model and a short-term model, the most dominant variable effect for export and import growth is an income variable, concerning both world and domestic income revenue.

CHAPTER 3 FREE TRADE POLICIES' IMPACTS ON IMPORTS DUTY REVENUE IN INDONESIA

3.1 Introduction

3.1.1 Background

During the economic crises, the Indonesian Government's expenditure allocation sharply increased with the launching of various programs to cope with the crises' impacts. These took the form of a subsidy policy, protection for poor families and fiscal stimuli for small and medium-sized enterprises and cooperatives. The recovery efforts and protection for poor families have yet to be completed maximally due to several limitations on the Government's expenditures.

Import duty is unique as a tax revenue because of its function, not only as a state revenue but also as an import regulator for both domestic consumption and production goods (Directorate General of Customs and Excise, 2006). Furthermore, the policy on import duty is closely related to economic-political interests of other countries, that is, imports from the relevant countries. Therefore, policies on import duty should be prudently applied and comply with international trade policies. Import duty is one of the international tax revenues set forth in the Indonesian's State Budget (APBN). As revenue, import duty has strategic functions. However, the Government should be very careful in determining rates of import duty because of their potentially perverse effect on national economic development.

Free trade regimes and organizations have played their increasingly significant roles since a series of meetings in the Uruguay round in 1986. These resulted in strategic agreements on GATT, followed by the Marrakesh Accord in 1994 in order to realize WTO per 1 January 1995. The main objective of the free trade regime is to reduce, and even to remove, trade obstacles in the forms of both tariffs and non-tariffs.

At first glance, the policy to decrease types and rates of import duty will decrease state revenue from this source. As an illustration, the revenue from import duty during the fiscal years of 1994/1995 to 1999/2000 was continually lower than that of 1994/1995, reaching Rp

3.5 trillion. The annual average decrease was 8.5%. This tendency of decreasing import-duty revenue cannot be separated from the policy to decrease import-duty tariffs as regulated in the May 1995 Regulation Package and a series of Deregulation Packages in 1996, followed by the Decree of the Minister of Finance Number 178 of 1996 on Schedules of Import Duty Tariff Decreasing in June 1996. This regulated, among other measures, the scheduled decrease of import duty until 2003. In addition, the Indonesian Government entered the *CEPT for AFTA (common effective preferential tariff for Asean free trade area)*, an agreement with ASEAN countries, followed by the policy to decrease import duty of 1,600 tariff posts in June 1997 and 157 tariff posts in September 1997.

Looking at this fact in depth, it can be seen that although the Government has consistently applied free trade policy, state revenue from import duty has actually been increasing since the fiscal year of 1986 (Rp1.2 trillion) when the liberalization was started. Such an increase continued in 1998 (Rp2.3 trillion), when Indonesia was hit by the economic crisis, and was extended by a significant increase in 1998 (Rp26 trillion). These facts suggest that import duty is not the only important factor affecting revenues from import duty.

This phenomenon is worthy of deeper analysis. It is also necessary to explore factors affecting import duty and ways to stimulate and to optimize revenue from import duties. This study will attempt to answer questions concerning the factors determining revenues from import duty, particularly during the trade-liberalization era. The economic crisis will be also analyzed because Indonesia experienced it in 1998.

3.1.2 Research Questions

The following questions which will be answered: Which is the best model to explain correlation between trade liberalization and state revenue from import duty? Which variables affect state revenue from import duty? What is the impact between implementation of

liberalization and state revenue from import duty? Does economic crisis impact state revenue from import duty?

3.2 Conceptual Framework

According to international-trade theory, every country involved in international trade relations will be encouraged to perform specialized production and export certain commodities according to comparative advantage, so that each country will be focused on areas of expertise or superiority, and eventually world output will become larger and each country involved will benefit. When associated with the distribution of ownership of production factors and technologies that exist today between developed and the developing countries, then developing countries must continue to specialize in the production and export of raw materials or primary commodities, fuel, mining materials, and food to the developed countries which in return will supply manufactured products to developing countries.

International trade or commerce among countries is unavoidable given the limitations and differences in resources, technology and competencies of each. However, each country's national interests are often the cause of obstacles to international trade in the form of tariff barriers, non-tariff and other trade barriers. Efforts to reduce barriers to trading were mostly made through agreements, be they bilateral, multilateral, regional cooperation, sub-regional, even international. All this is done according to the same premise that an increased volume and flow of international trade will provide a welfare impact for mankind as a whole.

Each country has a comparative advantage concerning some commodities or products caused by the different levels of labor productivity and the bounty of natural resources owned by each.

3.2.1 International Trade Policy in Import

International trade policy regarding imports covers various acts and regulations set by the Government, which, either directly or indirectly, will affect the structure, composition and nature of operations, and protect or promote the growth of the domestic industry and save foreign exchange. International trade policy concerning imports in general can be classified into 2 types of policies, they are:

a. Non-Tariff Barriers Policy

Non-tariff barriers policy concerns various trade policies excluding import duty which can cause distortion, thus reducing the potential benefits of international trade. In general, the policy of non-tariff barriers can be grouped as follows:

- 1) Specific limitation: the absolute prohibition of imports, import restrictions, import quotas, regulatory or technical requirements for imports of certain products, regulation of health / quarantine, import licenses, embargoes, and voluntary export restraints and orderly marketing agreements.
- 2) Customs administration: rules regarding the treatment of certain imports procedures, customs values, the establishment of foreign exchange and forex controls, packaging / labeling regulations and tariff classification.
- 3) Government participation: the policy of government procurement, subsidies, and export incentives (countervailing duties and trade-diverting).
- 4) Import charges: import deposits and supplementary duties and variable levies.

b. Tariff Barriers Policy

Tariff barriers take the form of duties on goods imported and can be divided into:

- 1) Low Rates / exemption from import duty (between 0% to 5%), generally apply to basic needs and strategic materials, such as rice, factory machinery, military equipment and defense.
- 2) Moderate Rates (between 5% to 20%), generally imposed on semi-finished goods and other goods not produced enough locally.
- 3) High rates (above 20%) are generally applied to luxury goods and other goods already produced enough in the country, and not staple goods.

Tariff-based policies on the objectives can be classified into:

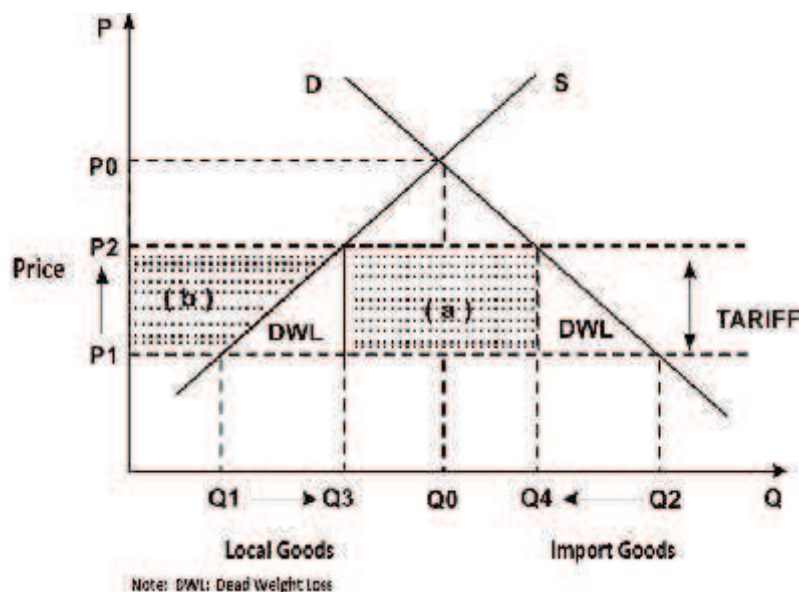
- a. The Revenue Tariff: the imposition of tariffs intended to increase the country's revenues.
- b. Protection Tariff: the imposition of high tariffs to prevent / restrict the import of certain goods.

Based on these objectives, import-duty policies have the following functions:

1) Regulatory Function, which is to regulate the protection of the interests of the economy / industry in the country, 2) Budgetary Function, a source of the country's revenue, and 3) Distribution Function, to create an equitable distribution of national income through high tariffs for imported goods that are categorized as luxury goods.

As a policy which emphasizes the regulatory functions, the application of import duties would have the following result, illustrated graphically below:

Figure 3.1 Impact of Import-Duty Policy



Source: Authors

Price Effect, the price of goods subject to import duties will be higher (from OP_1 to OP_2).

- Consumption Effect, the total number of goods consumed will be reduced (from OQ_2 to OQ_4).
- Protection Effect, the number of domestically-consumed goods will increase (from OQ_1 to OQ_3) while the number of imported goods will decrease (from Q_1Q_2 to Q_3Q_4).
- Revenue Effect, the government will receive revenue from customs duties for hatching space (a).
- Redistribution effect, domestic producers will get additional revenue from hatching space (b).

The systems and procedures for the collection of tariffs in its implementation can be divided into:

a. Advalorem Tariff

The amount of import duty on imported goods is determined proportionally based on the percentage rate times the CIF price of the item (Import Duty = % tariff x CIF price). The advantages of this system are:

- 1) To keep track of the price level / inflation, and
- 2) Determine price differentiation based on product quality.

While the weaknesses are:

- 1) A high burden for the administration of government, because it requires data and a complete breakdown of prices of goods, and
- 2) Frequent disputes and differences of interpretation in determining the price (quality and percentage rate) for the calculation of import duties.

2. Specific Tariff

The amount of import-duty charges are based on the size of certain units of imported goods. Before 1991, this tariff system was used in Indonesia and recently re-imposed on certain imported commodities, such as the imposition of import duty of Rp. 550/kilogram for sugar imports. The advantages of this system are:

- 1) It is easy to implement because it does not require detailed prices according to quality goods, and
- 2) It can be used as a means of control for domestic-industry protection.

While the weaknesses of this system are:

- 1) The imposition of tariffs is unfair because there is no distinction based on the quality of goods, and
- 2) It can be only used as a tool of control which is a form of static protection.

3. Compound Rate

The amount of this import duty is a combination of advalorem and specific tariff rates. As an example, a certain good subject to tariffs of 10% ad valorem plus Rp. 100 for each unit. Because of the complexity in calculating the amount of import duty, the system is rarely used.

3.2.2 Free Trade Policy

For liberals, world economic expansion will never happen if political interests constantly prevail over the market mechanism. The welfare of a nation can be improved through a comprehensive process of economic growth. To achieve this goal, a country should not intervene in regulating the market mechanism. The great advantage in the aggregate can only be generated through cost-benefit calculation carried out by business people. Because business is concerned with the pursuit of profit, transactions between businesses on a local, national and international scale will by themselves generate maximum economic growth.

A global free market system can work perfectly if supported by two important things. First, the existence of a stable system of international payments in terms of exchange rate which can be maintained for a long time and does not fluctuate. Second, the selection of product specialization by each country based on absolute advantage so that a country does not produce goods that can be purchased from other countries at lower prices than it can produce itself. The barometer used by Adam Smith is the number of workers (as factors of production) used in producing a product. Absolute advantage theory is flawed because it assumes that the wage levels in each country are always the same and it cannot answer whether a country's situation should make it halt all its production when the cost of production of all its products are higher than other countries'.

In terms of policy implications, Law, Tan and Azman (2015) suggest that it is important for East Asian economies to actively participate in liberalising their trade and

capital accounts to upgrade institutional quality. Institutional reform that results from efforts to promote globalization represents an important channel in terms of its overall effect on financial development and economic development. Bas and Strauss Kahn (2015) explore the impact of input trade liberalization on imported input and exported product prices. Using Chinese transaction data for 2000–2006, they capture causal effects between exogenous input tariff reductions and within firm changes in HS6-traded product prices.

By and large, developing countries tend to consider that trade liberalization will have adverse effects on trade taxes. However, measurements of trade reform and their implications to revenues can be positive, negative and neutral, depending on the sources of barriers and characteristics of each country (Ebrill *et. al.*, 2002). Several studies and available data on the impacts of liberalization show that trade policies can either increase or decrease revenues from import duties. Theoretically, direct changes in revenues resulting from import duty due to policies and trade liberalization are ambiguous, depending on other factors such as productivity and elasticity of revenues from import duty (Matlanyane and Harmse, 2002). Many researchers have frequently used productivity of revenue from import duties to GDP. Studies conducted by the IMF or the World Bank generally state that variables such as import duty, exchange value, average tariffs and liberalization dummy variables can affect revenues from import duties (Dandapani Paudel, 2006).

3.3 Methodology

3.3.1 Specification of Research Model

Considering this study, it will involve a number of variables and data will be used in the form of time series data, then econometrics will be used to determine basics of data processing and results of empirical research interpretation. To formulate the specifications of the econometric model that describes the relationship between the independent variable and dependent variable in accordance with economic theory, the initial research of this study has

been conducting investigations and producing a review of literature on government revenues, taxes, import duties and free trade policies.

In theory, the level of tax revenue may change because of changes in tax bases, tax rates and tax-policy changes. The ability of a tax revenue to face these changes (tax responsiveness) is often measured by the elasticity of tax (tax elasticity) and the ability to float (tax buoyancy), which represents the percentage change in tax revenue compared to the percentage change in gross domestic product ($\% \Delta \text{ revenue} : \% \Delta \text{GDP}$). According to the objective of this study which seeks to ascertain the impacts of free trade policies on the level of import-duty revenue, the empirical measurement of tax-revenue productivity used is as follows (Osoro, 1993; Matlanyane and Harmse, 2002):

$$T = \phi Y^{\alpha} \varepsilon$$

where **T** is a tax revenue (in this case import-duty revenue), ϕ is coefficient, **Y** is Gross Domestic Product, α is tax buoyancy, and ε represents error.

By using the OLS method, the above initial equation is transformed to be a form of a natural linear logarithm as following:

$$\ln T = \phi + \alpha \ln Y + \mu \quad (1)$$

where LN is a logarithm with main number e, T is Import Duty Revenue, ϕ is constant coefficient, Y is Gross Domestic Product, α is tax buoyancy, and μ represents error. Furthermore, for ease of understanding, the notation T for import duty revenue is converted to CR and notation Y for gross domestic product converted into GDP. Therefore, the above equation becomes

$$\ln CR_t = \beta_0 + \beta_1 \ln GDP_t + e_t$$

where CR is Import Duty Revenue, in billions of Indonesia Rupiah. GDP is Gross Domestic Product with constant Price (1993=100), in billions of Indonesia Rupiah. β_0 is Coefficient, e_t is a stochastic disturbances term. Next, this equation (1) is called model A. Furthermore, in order to calculate impacts of free trade policies, exchange rate, import volume and tariff level as regards import-duty revenue, the equation (1) is transformed again to calculate impacts of inflation and other macroeconomic conditions so that the linear form of the natural logarithm becomes the following:

$$\ln TR = \beta_0 + \beta_1 \ln M + \beta_2 \ln W + \beta_3 D + \beta_4 r + \eta$$

where TR is the percentage of duty revenue of GDP, β is coefficient, M is the percentage of imports toward GDP, W is US\$ exchange rate to the Rupiah, D is dummy variable period with or without free trade policy, r is average tariff rate, and η represents error. In the year 1997/1998, Indonesia and other countries experienced an economic crisis. Therefore, to accommodate the incident, the dummy variable economic crisis was added. With a modification to the initial notation for research purposes and the addition of dummy variables, the equation (2) becomes:

$$\ln CRGDP_t = \beta_0 + \beta_1 \ln MGDGP_t + \beta_2 \ln ER_t + \beta_3 ATR_t + \beta_4 D_FREE_t + \beta_5 D_CRISIS_t + e_t \quad (2)$$

Where $CRGDP$ is Import Duty Revenue (% of GDP), in billions of Indonesia Rupiah. $MGDP$ is Import Value (% of GDP), in billions of Indonesia Rupiah. ER is Exchange Rate, in thousands of Indonesia Rupiah. ATR is Average Tariff Rate, in percentage, D_FREE is a dummy variable for trade liberalization, started in 1986, D_CRISIS is a dummy variable for Economic Crisis, began in 1998. *Gross Domestic Product (GDP)* means GDP constant with the base year 2000 with units in billion dollars. Furthermore, Equation (2) is called model B.

3.3.2 The Data

The data used in this study is secondary annual time series data from 1975 to 2012 (38 years) which has been processed and published by Central Bureau of Statistics (Statistics Indonesia). The description statistics of variables shown in Table 3.1. and Figures 3.2. to 3.7. show whether the data has normality distribution or not.

Table 3.1 Description statistics of variables

	Mean	Standard Deviation	Minimum	Maximum	Number of Years
Model A:					
$\ln CR$	7.79	1.60	4.71	10.07	38
$\ln GDP$	12.62	0.54	11.60	13.53	38
Model B:					
$\ln CRGDP$	-0.22	1.06	-2.28	1.15	38
$\ln MGDG$	3.14	1.56	0.59	0.59	38
$\ln ER$	7.85	1.15	6.02	5.45	38
ATR	4.75	3.17	0.65	11.56	38
D_FREE	0.71	0.45	0	1	38
D_CRISIS	0.39	0.49	0	1	38

Source: Author's calculation

Figure 3.2 Normality Data for $\ln CR$ Variable

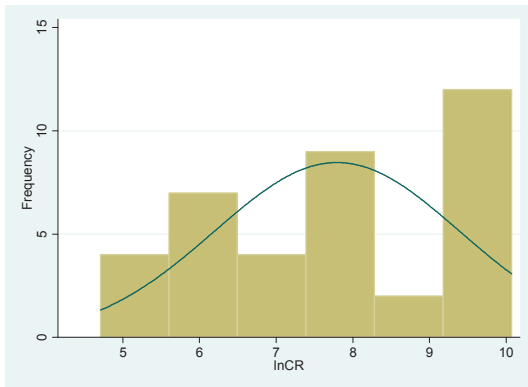


Figure 3.3 Normality Data for $\ln GDP$ Variable

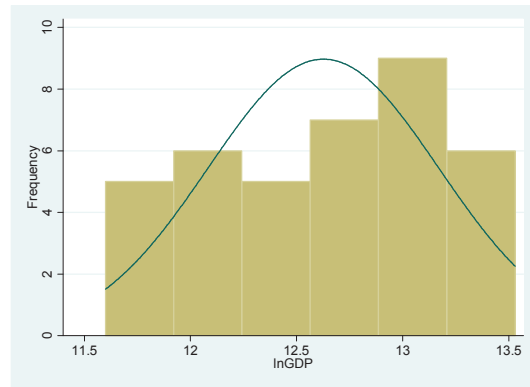


Figure 3.4 Normality Data for $\ln CRGDP$ Variable

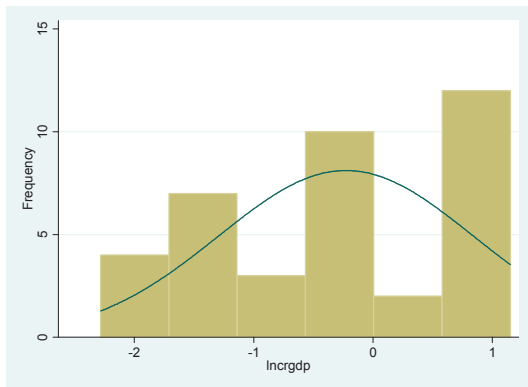


Figure 3.5 Normality Data for $\ln MGDP$ Variable

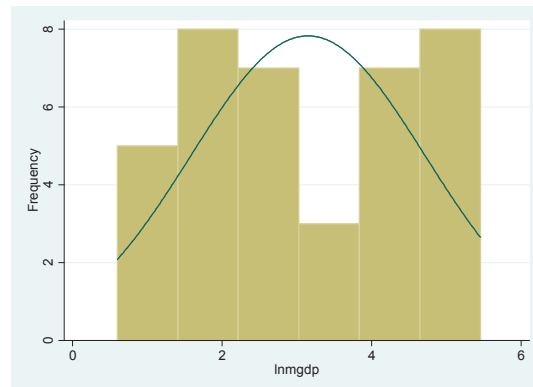


Figure 3.6 Normality Data for $\ln ER$ Variable

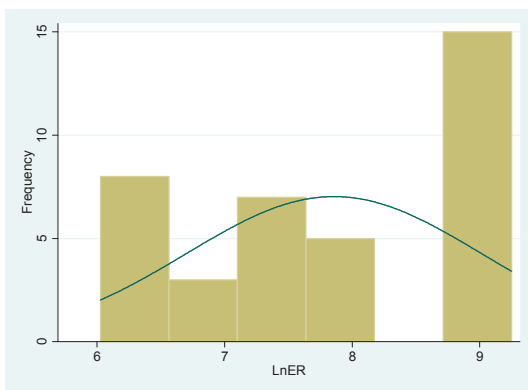
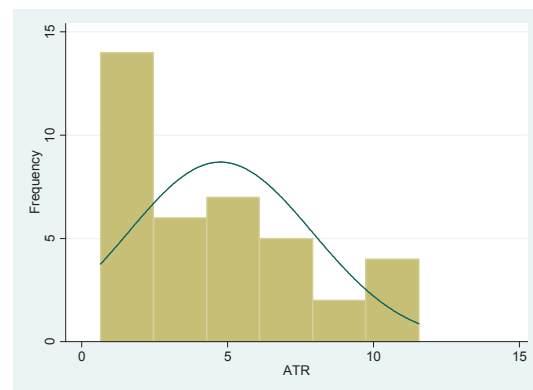


Figure 3.7 Normality Data for ATR Variable



Source: Author's calculation

3.3.3 Methods of Analysis

This study uses time series data for a period of 38 years (1975–2012). The initial econometrical model was designed based on economic theories before estimations are made, with the best model being selected from available alternative models. After obtaining the best economic model, an estimation using the OLS method was made. If the time series data regressed, there is the possibility of a co-integration problem or that spurious regression or non-sense regression has occurred. Therefore, in this study we propose the co-integration analysis test. A stationery test was performed to determine whether there is a variable that is not stationary. If variables that are not stationary in the model are found and co-integration is indicated, the appropriate model for the time series data is an ECM. After testing for co-integration, the next test performed is a diagnostic test (heterocedasticity and autocorrelation). The details are described below:

3.3.3.1 Selecting the Best Model

According to Richard and Hendry (1983), a model chosen for empirical analysis should satisfy the following criteria:

- a. *Be data admissible*; that is, predictions made from the model must be logically possible.
- b. *Be consistent with theory*; that is, it must make good economic sense.
- c. *Have weakly exogenous regressors*; that is, the explanatory variables, or regressors, must be uncorrelated with the error term.
- d. *Exhibit parameter constancy*; that is, the values of the parameters should be stable.

Otherwise, forecasting will be difficult. As Friedman notes, “The only relevant test of the validity of a hypothesis (model) is comparison of its predictions with experience.”

(Friedman, 1953). In the absence of parameter constancy, such predictions will not be reliable.

- e. *Exhibit data coherence*; that is, the residuals estimated from the model must be purely random (technically, white noise). In other words, if the regression model is adequate, the residuals from this model must be white noise. If that is not the case, there is some specification error in the model. Shortly, we will explore the nature of specification error(s).
- f. *Be encompassing*; that is, the model should encompass or include all the rival models in the sense that it is capable of explaining their results. In short, other models cannot be an improvement over the chosen model.

Basically, there are five mistakes related to model specification, namely (1) exclusion of relevant independent variables; (2) inclusion of irrelevant independent variables; (3) use of incorrect functions; (4) incorrect measures; and (5) incorrect specification concerning the interfering variables. Specification errors numbers (1) to (4) are known as model specification errors. In this case, the right model is known but it is not correctly estimated.

The second specification error arises due to lack of knowledge of which model is correct. This error is related to specification error number (5). For example, there are two major concepts concerning the effectiveness of economic policy in macroeconomics: Keynesian and Monetary. According to Keynes, fiscal policy is far more effective than monetary policy, whereas the monetary view believes otherwise; that monetary policy is more effective than fiscal policy.

3.3.3.1.1 Ramsey Reset Test

The Ramsey regression is a specification-error test for omitted variables which was created by Ramsey. The Ramsey Reset attempts to determine whether an independent

variable in the model is adequate to describe the dependent variable. This testing has the following hypothesis:

H0 : Model has no Omitted Variable

H1 : Model has Omitted Variable

Zero hypothesis (H0) will be rejected if $(\text{Prob}>F) < \alpha(0.005)$ or t-stat value $>$ critical value of t-table.

3.3.3.1.2 Akaike Information Criteria (AIC) Test and Bayesian Information Criterion

(BIC)Test

The AIC and BIC test is a popular testing method to compare the maximum likelihood value in the model. The AIC and BIC may be defined as follows:

$AIC = -2 \cdot \ln(\text{likelihood}) + 2 \cdot k$; $BIC = -2 \cdot \ln(\text{likelihood}) + \ln(N) \cdot k$, In which:

k = model degrees of freedom; N = number of observations

The A model is selected if the AIC and BIC value is lower than the other model.

3.3.3.2 Stationarity Test

Since this test uses time series data, a data stationarity test must be conducted. The definition of stationarity is related to the consistency of the movement of time series data. A set of data is said to be stationary if the average value and the variants are constant at all times, which is followed by the covariant value between two periods of time which solely depend on the space or interval between them.

Stationary data will move in a stable and convergent manner around the average value with a certain range (insignificant deviation) without a positive or negative trend. If a set of data is not stationary and is included in a regression equation, it will result in a fake regression (spurious regression) with values of t-stat, F-stat, and R^2 invalid value.

One of the formal concepts used to determine the stationarity of a set of data is the unit root test. This test is a popular test developed by David Dickey and Wayne Fuller and is called the Augmented Dickey-Fuller (ADF) Test. If a data time series is not stationary on zero order, $I(0)$, the data stationarity may be determined in the next order, hence the level of stationarity on the n-order (first difference or $I(1)$, or second difference or $I(2)$), and so on. Several models which may be selected to conduct the ADF test are :

$$\Delta Y_t = \delta Y_{t-1} + u_t \quad (\text{without intercept})$$

$$\Delta Y_t = \beta + \delta Y_{t-1} + u_t \quad (\text{with intercept})$$

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + u_t \quad (\text{intercept with time trend})$$

Δ = first difference of the variable used ; t = variable trend

The hypothesis for this test is:

$H_0 : \delta = 0$ (there is a unit root, not stationary)

$H_1 : \delta \neq 0$ (no unit root, stationary)

All data used in the regression are tested by a unit root test referring to the critical limit value of ADF and the p-value of Mac Kinnon. If the statistical test value is less than the critical value or the p-value of Mac Kinnon is greater than a certain significance level, the data time series is not stationary.

3.3.3.3 Cointegration Analysis

The cointegration test was popularized by Engle and Granger (1987). The cointegration approach is closely related to the testing of the possibility of a long-term equilibrium relationship between economic variables as required by economic theory. The cointegration approach can also be seen as a test of the theory and is an important part in the

formulation and estimation of a dynamic model. In the concept of cointegration, two or more variables are not stationary time series to be co-integrated if the combination is also linear with time, although it is possible that each variable is not stationary. When the time series variables are cointegrated but not stationary, there is a stable relationship in the long term comprising cointegrated X_t and Y_t . The representation is as follows:

$$Y_t = \beta_0 + \beta_1 X_t + \varepsilon_t$$

$$\varepsilon_t = Y_t - \beta_0 - \beta_1 X_t$$

such that ε_t (error term) stationary, $I(0)$. To determine if the time series is stationary or not, regression analysis can be used. The cointegration test used in this study was developed by Johansen and Juselius (1990) who provided two different test statistics—from the trace test and the maximum eigenvalue test—that can be used for the hypothesis of the existence of r co-integrating vectors.

The two statistics take the following forms;

Trace Test;
$$\lambda_{trace}(r) = -T \sum_{i=r+1}^n \ln(1 - \lambda_i)$$

The trace statistic tests the null hypothesis that the number of cointegrating vectors is less than or equal to r against a general alternative.

Maximum Eigenvalue Test;
$$\lambda_{max}(r, r+1) = -T \ln(1 - \lambda_{r+1})$$

The maximum eigenvalue statistic tests the null hypothesis that the number of cointegrating vectors is exactly equal to r against the alternative of $r+1$ cointegrating vectors.

3.3.3.4 Error Correction Model

When two time variables are not stationary but mutually co-integrated, it can be concluded that there is a long-term equilibrium relationship between the two variables. In the

short term there may be an imbalance (disequilibrium), and the ECM is used to overcome this. ECMs were introduced by Sargan (1984) and later popularized by Engle and Granger (1987). An ECM has several uses, but the most common in econometrics is overcoming time series data that are not stationary and spurious regression. Engle-Granger ECMs can be defined as follows:

$$\Delta Y_t = \alpha_0 + \alpha_1 \Delta X_t + \alpha_2 E_{t-1} + \varepsilon_t$$

with $E_{t-1} = Y_{t-1} - \beta_0 - \beta_1 X_{t-1}$, $\Delta X_t = X_t - X_{t-1}$,

where,

α_1 = short-term coefficient,

β_1 = long-term coefficient and

α_2 = imbalance correction coefficients.

The imbalance correction coefficient α_2 is an absolute value that describes the time required to obtain the equilibrium value. If the probability value of coefficient α_2 is less than 0.05, then a short-term relationship is indicated.

3.3.3.5. Diagnostic Test

- Heteroscedasticity

One of the most important assumptions of the Classical Linear Regression Model (CLRM) is the error value (ε_t) of homoscedasticity. When there is heteroscedasticity, the OLS estimation will be unbiased since the estimator result will have an error movement with pattern. Since the estimation made by OLS no longer has minimum variation or since it is already efficient, BLUE shall no longer exist. There are two ways to determine heteroscedasticity:

1. Residual and fitted plots

These plots are graphical procedures to determine whether there are patterns between residual (error) and fitted values (predicted values) of the result of regression estimation. The graph also serves as an initial indicator of heteroscedasticity in the econometric model. An effective econometric model is the one where residual and fitted plot values do not show a pattern.

2. Cook and Weisberg's test

In an estimation which uses cross section data, a common problem which arises is heteroscedasticity or non-uniform residual variance. One of the methods to test the heteroscedasticity in econometrics is the Cook and Weisberg test. The hypothesis for this test is:

H0 : Constant Variance

H1 : No Constant Variance

If $(n-p) R^2 > X_p^2$ or the p-value is less than a certain level of significance, then reject H0 or there is a heteroscedasticity problem.

- *Autocorrelation*

Autocorrelation is a circumstance in which there is error correlation between time periods. Greene (2012) states that even though the presence of autocorrelation may result in linearity (on large data), there is no longer minimum variation. Autocorrelation will make model into BLUE.

One of the tests to determine autocorrelation besides the Durbin-Watson (DW) value is the Breusch-Godfrey (BG) test / LM test. The hypothesis for this test is:

H0: $\rho_1 = \rho_2 = \rho_3 = \dots = \rho_p = 0$ (no autocorrelation)

H1: There is autocorrelation

If $(n-p) R^2 > X_p^2$ or the p-value is less than a certain level of significance, then reject H0 or there is an autocorrelation problem.

3.4 Results and Discussions

3.4.1 Selecting the Best Model

According to the previous discussion, this study has two models, namely model A and model B, in which model A has only one independent variable while model B has three independent variables and two dummy variables. Therefore, the selection of the best model is only applied to model B. Similar to the previous discussion, we formulate a model B research specification to the equations referred to below:

$$\ln CRGDP_t = \beta_0 + \beta_1 \ln MGD P_t + \beta_2 \ln ER_t + \beta_3 ATR_t + \beta_4 D_FREE_t + \beta_5 D_CRISIS_t + e_t$$

However, in order to obtain the best model B, testing is made to obtain the correct equation and avoid errors in model specification. Testing will be started when the said model has only two variables in which the dependent variable of *CRGDP* will only be affected by the independent variable of *MGDP*, namely the said Model B₁ :

$$\ln CRGDP_{t_1} = \beta_0 + \beta_1 \ln MGD P_t + e_t \quad (1)$$

Next the testing is done when the model has more than two variables, in which the dependent variable of *CRGDP* is not only affected by the independent variable of *MGDP* but also by the independent variable of *ER* and that of *ATR*, namely the said Model B₂:

$$\ln CRGDP_{t_2} = \beta_0 + \beta_1 \ln MGD P_t + \beta_2 \ln ER_t + e_t \quad (2)$$

The last model being tested is the one having a dummy variable in which the dependent variable of *CRGDP* is not only affected by the independent variables of *MGDP*,

ER and *ATR* but also by the dummy variables of *FREE* and *CRISIS*, namely the said Model B₃:

$$\ln CRGDP_{t_3} = \beta_0 + \beta_1 \ln MGD P_t + \beta_2 \ln ER_t + \beta_3 ATR_t + \beta_4 D_FREE_t + \beta_5 D_CRISIS_t + e_t \quad (3)$$

Testing to select the best model is done by using the Ramsey Reset test to find out whether any variable is omitted and also by use of the Akaike Information Criteria (AIC) test and the Bayesian Information Criterion (BIC) test.

The outcome of the regression and Ramsey Reset and the AIC and BIC test for the three models (1), (2), and (3) is shown on Table 3.2.

Table 3.2 The outcome of the regression and Ramsey Reset and AIC and BIC test

	ln <i>CRGDP</i> _{t_1} (Model B ₁)	ln <i>CRGDP</i> _{t_2} (Model B ₂)	ln <i>CRGDP</i> _{t_3} (Model B ₃)
Ln MGD P	0.65***	0.61***	0.70***
Ln ER		0.23	0.88***
ATR		0.06**	0.13***
D_FREE			-0.51*
D_CRISIS			-1.19***
CONSTANT	-2.29***	-4.31***	-9.16***
Observations	38	38	38
AIC Test	14.35	10.96	-1.35
BIC Test	17.62	17.51	8.46
(Prob>F) Ramsey Reset Test	0.17	0.00	0.00
Adjusted R ²	0.92	0.93	0.95

Source: Author's calculation

Note: the numbers in parentheses are t statistics

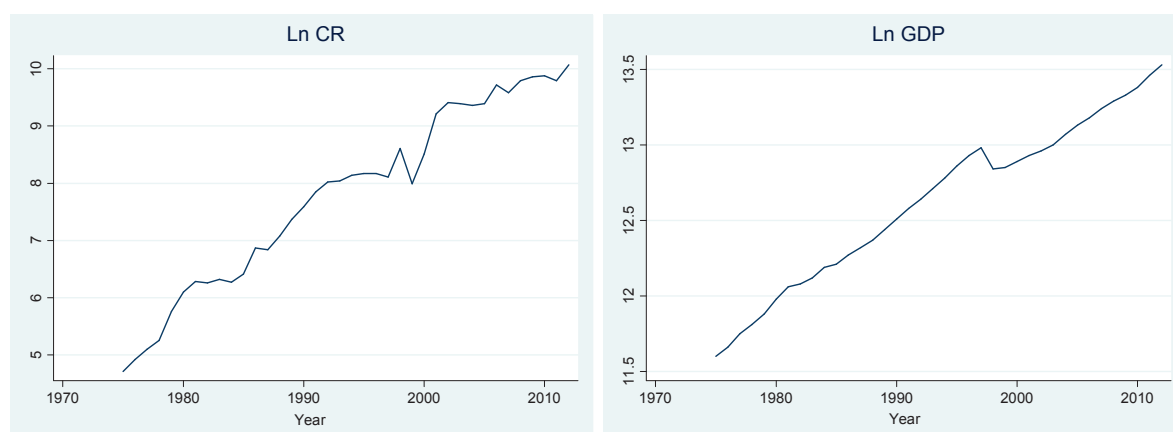
*Asterisks indicate statistical significance: *, **, ***: Significant at 10%, 5%, 1%*

The Ramsey Reset test on Model B₁ results in the value of $(\text{Prob}>F) > \alpha$ (1%, 5%, 10%). It shows that there is no adequate evidence to reject H₀. It means that the independent variable in Model B₁ is not adequate to describe the dependent variable. Thus, there is still a need to add an independent variable. The Ramsey Reset test on Models B₂ and B₃ results in the value of $(\text{Prob}>F) < \alpha$ (1%, 5%, 10%). It shows that there is no adequate evidence to accept H₀. It means that the independent variable in Models B₂ and B₃ is adequate to clarify the dependent variable. The AIC and BIC test shows that Model B₃ has a lower AIC and BIC value than Model B₁ and Model B₂. It means that Model B₃ becomes Model B which is the best model to describe the objective of the research sought.

3.4.2 Stationarity Test

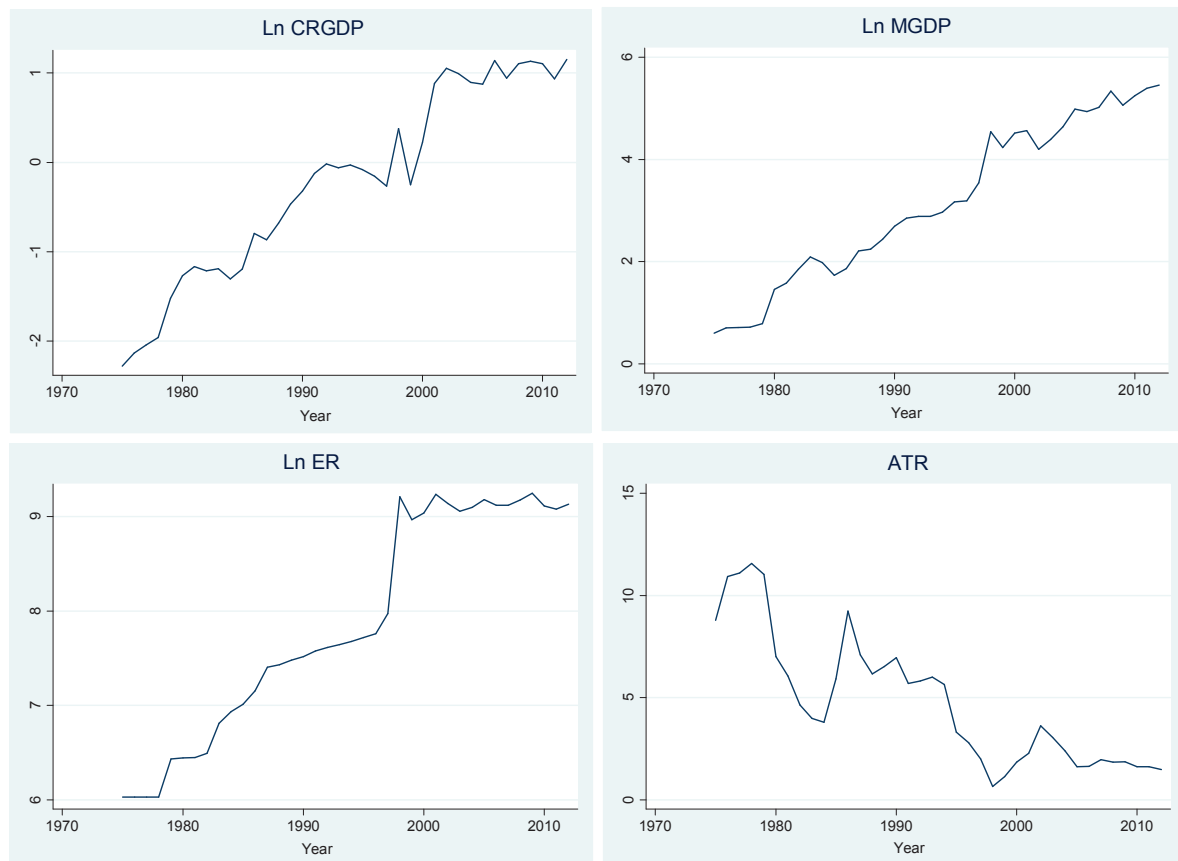
The time series test may also be carried out by the use of figures. The following figures show the result of the stationarity test for models A and B.

Figure 3.8 Stationarity Test: Model A



Source: Output STATA, Author's calculation

Figure 3.9. Stationarity Test: Model B



Source: Output STATA, Author's calculation

Based on Figures 3.8 and 3.9 above, it is shown that there is an annual rising trend based on a 38-year observation. It can be said that the data is suspected to be non-stationary. However, for more certainty, a unit root test (ADF test) is conducted. The result of the unit root test is shown in Table 3.3 as follows:

Table 3.3 Unit Root Tests Results

Variables	I(0)	I(1)
Ln CR	-1.47	-6.84***
Ln GDP	-1.23	-4.43***
Ln CRGDP	-1.48	-7.30***
Ln MGDG	-0.74	-6.74***
Ln ER	-1.15	-6.41***
ATR	-1.34	-5.03***

Source: Author's calculation

Note: The Augmented Dickey-Fuller (ADF) test assumes that the series follows an $AR(p)$ process and adding p lagged difference terms of the dependent variable to the right-hand side of the test regression: $dy_t = \alpha y_{t-1} + x_t' \delta + \beta_1 dy_{t-1} + \beta_2 dy_{t-2} + \dots + \beta_p dy_{t-p} + v_t$. The test reported is a t -ratio which it is used to test the null hypothesis that the variable employed in the study has a unit root. 95% critical values are -2.969.

Asterisks indicate statistical significance: *, **, ***: Significant at 10%, 5%, 1%

The results of the ADF test from Table 3.3 indicate that each variable is non-stationary in level, $I(0)$ but they are all found to be stationary in their first differences, $I(1)$. From the results, we conclude that all variables used for Model A and Model B are integrated of order 1 and the next step is cointegration analysis.

3.4.3 Cointegration Analysis

To identify cointegration, this study test uses the Johansen cointegration test. For Model A, trace test and maximum eigenvalue explain the null hypothesis (H_0), which states there is no cointegration between variables accepted at the 95% confidence interval, so that the alternative hypothesis (H_1) is rejected. Trace test indicates no cointegrating vector in the model A.

Table 3.4 Johansen's Cointegration Test Result for Model A

Hypothesized No. of CE(s)	Tests			
	Maximal Eigenvalues		Eigenvalue Trace	
	Statistics	5% Critical Value	Statistics	5% Critical Value
None	8.193516	14.26460	10.26168	15.49471
At most 1	2.068162	3.841466	2.068162	3.841466

Source: Author's calculation

Table 3.5 Johansen's Cointegration Test Result for Model B

Hypothesized No. of CE(s)	Tests			
	Maximal Eigenvalues		Eigenvalue Trace	
	Statistics	5% Critical Value	Statistics	5% Critical Value
None*	29.12941	27.58434	54.46013	47.85613
At most 1	19.56905	21.13162	29.33073	29.79707
At most 2	7.050412	14.26460	9.761680	15.49471
At most 3	2.711267	3.841466	2.711267	3.841466

Source: Author's calculation

For model B, trace test and maximum Eigenvalue indicate that there is one cointegration significance at 95% confidence interval. It means that the null hypothesis (H_0), which states there is no cointegration between variables rejected at the 95% confidence level, so that the alternative hypothesis (H_1) is not rejected. Trace test indicates one cointegrating vector in the model B.

Since it has been determined that the variables are integrated of order 1, cointegration analysis is performed. In this section, the cointegration test, using Johansen Test, is employed. In the first step, the OLS regression is performed in order to obtain the long-run equilibrium relationship among variables of interest. In this step, model A is estimated by regressing the real GDP. The result is as follows;

$$\ln CR_t = -28.79 + 2.89 \ln GDP_t$$

$$(-26.34) \quad (33.50)$$

$$R^2 = 0.96 \quad DW = 0.88$$

where the numbers in parentheses below the estimated parameters are t statistics.

Then, the long-run of model B is estimated by regressing the percentage of duty revenue of GDP, the percentage of imports toward GDP, exchange rate and average tariff rate. The result of the long run of model B is as follows:

$$\ln CRGDP_t = -9.16 + 0.70 \ln MGDP_t + 0.88 \ln ER_t + 0.13 ATR_t - 0.51 D_FREE_t - 1.19 D_CRISIS_t$$

(-4.68) (5.17) (3.07) (3.69) (-1.83) (-3.41)

$$R^2 = 0.96 \quad DW = 1.03$$

where the numbers in parentheses below the estimated parameters are t statistics.

3.4.4 Error Correction Model (ECM)

if a set of observed variables is not stationer and cointegrated, then there is a long-term relationship between these variables to establish equilibrium. However, in the short-term it is possible there is an imbalance where economic agents require adjustment in order to return to equilibrium. To observe the dynamic behavior of the short-term variables observed, the error correction model can be used because this model uses adjustments to correct the disequilibrium which has occurred.

In the model A, each variable is non-stationary in level, $I(0)$ but they are all found to be stationary in their first differences, $I(1)$. Trace test and maximum Eigenvalue indicate that there is no cointegration significance at 95% confidence interval. It means there is no long-run relationship between the variables identified in the model A, so that the alternative hypothesis (H_1) is rejected. Trace test indicates no cointegrating vector in the model A.

The coefficient of error correction term (ECT) of model A which shows the speed of adjustment is negative and amounted to -0.10, is statistically no significant (0.54) and value of t -statistics is very low (0.61). This means ECM can not be applied for model A. Hence, model A has the equation as follow:

$$\Delta \ln CR_t = 0.17 - 0.66 \Delta \ln GDP_t$$

While in the model B, each variable is non-stationary in level, I(0) but they are all found to be stationary in their first differences, I(1). Johansen Test indicates that there is one cointegration significance at 95% confidence interval. It means there is a long-run relationship between the variables identified in the model B so that the alternative hypothesis (H₁) is not rejected. Trace test indicates one cointegrating vector in the model B. The result of the ECM is shown in Table 3.6 as follows:

Table 3.6 Summary of Error Correction Model for Model B

Variable	Coefficient
D(LNMGDP)	0.313380 (1.61)
D(LNER)	0.257077 (1.32)
D(ATR)	0.042992 (1.40)
D_FREE	-0.040083 (-0.49)
D_CRISIS	-0.004413 (-0.06)
C	0.070560 (1.15)
ECT (-1)	-0.491842*** (-2.93)
R-squared	0.499630
Adjusted R-squared	0.399556
Durbin-Watson stat	1.481648
Prob	0.001186

Note: the numbers in parentheses are t statistics

*Asterisks indicate statistical significance: *, **, ***: Significant at 10%, 5%, 1%*

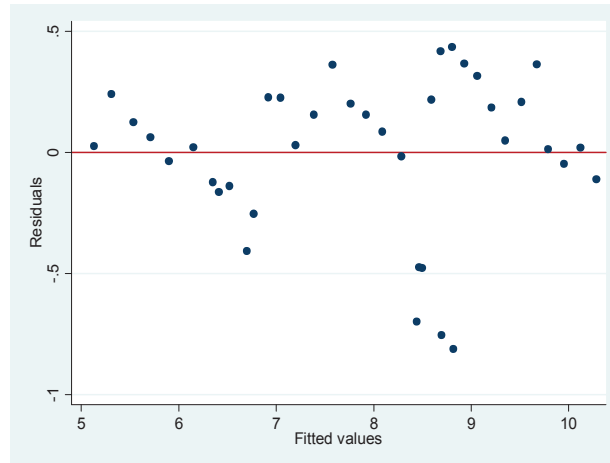
Or the equation can also be written as:

$$\Delta \ln CRGDP_t = 0.07 + 0.31 \Delta \ln MGDP_t + 0.25 \Delta \ln ER_t + 0.04 \Delta ATR_t \\ - 0.04 D_FREE - 0.004 D_CRISIS - 0.49 ecm_{t-1} ***$$

3.4.5 Diagnostic Test

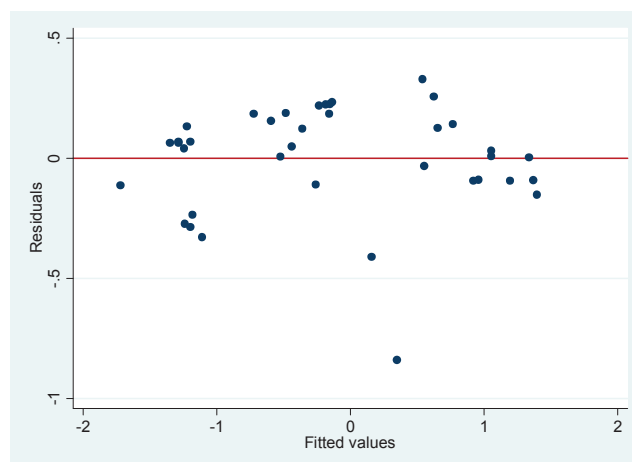
The outcome of the diagnostic test is shown in Figures 3.10. and 3.11. and Table 3.7 below:

Figure 3.10 Residual vs Fitted Plots (Heteroscedasticity): Model A



Source: Output STATA, Author's calculation

Figure 3.11 Residual vs Fitted Plots (Heteroscedasticity): Model B



Source: Output STATA, Author's calculation

Table 3.7 Diagnostic Test

Variables	Multicollinearity		Heteroscedasticity	Autocorrelation
	VIF	1/VIF	Breusch-Pagan Test	Breusch-Godfrey Test
Model A:				
D(Ln GDP)	-	-	0.19	0.59
Model B:				
D(Ln MGDP)	2.38	0.419	0.11	0.06
D(Ln ER)	1.74	0.573		
D(ATR)	1.51	0.662		
D_FREE	1.35	0.738		
D_CRISIS	1.35	0.740		

Source: Author's calculation

For model A, because it has only one independent variable regression equation, it contains no multicollinearity problem and it is not necessary to test multicollinearity.

Figure 3.10 shows that for heteroscedasticity, the error value mostly ranges between -5 to +5, hence the error value has no heteroscedasticity issue. To remove doubt, the result of the Breusch-Pagan (BP) Test is shown in Table 3.7. The Prob> chi2 value is greater than all levels of significance, hence it may be stated that there is no heteroscedasticity issue. The result of the Breusch-Pagan (BP) test shows that the value of Prob> chi2 is greater than all levels of significance, hence it may be stated that the outcome of the regression estimation of model A has no autocorrelation issue.

For model B, Table 3.7 shows the Variance inflation Factor (VIF) value of each variable, none of which is higher than 10. It shows that the outcome of the said regression has no issue with respect to multicollinearity.

Figure 3.11 shows that for heteroscedasticity, the error value mostly ranges between -5 to +5, therefore the error value has no heteroscedasticity issue. To remove doubt, the result of

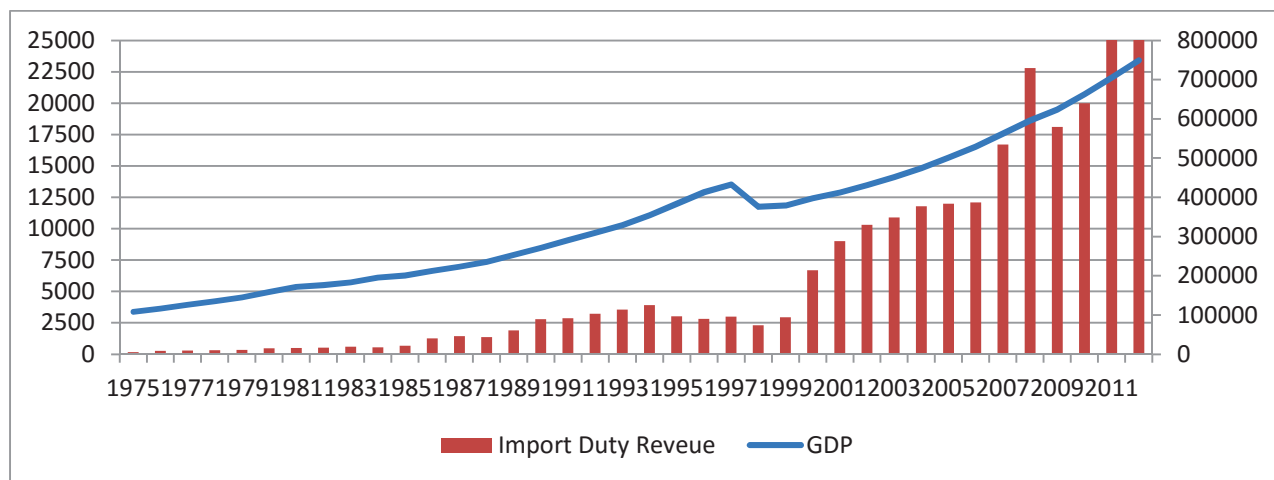
the BP Test is shown on Table 3.7 The Prob> chi2 value is greater than all levels of significance, hence it may be stated that there is no heteroscedasticity issue.

Table 3.7 shows that the value of Prob> chi2 of the Breusch-Godfrey Test is greater than all levels of significance, therefore it may be stated that the outcome of the regression estimation of model B has no autocorrelation issue.

3.4.6 Analysis

The relevance of import duty and gross domestic product (GDP) during the period of the study can be analyzed according to the figure below:

Figure 3.12 Import Duty and GDP of Indonesia (Million Rupiah)



Source: Ministry of Finance

From the analysis of the graph above between the Import Duty Revenue and Gross Domestic Product, we observe that the tendency of Gross Domestic Product to increase is followed by a tendency of Import Duty Revenue to rise. Therefore, when viewed from the aspect of Import Duty Revenue, import policy still affects Import Duty Revenue.

Data from 1999 to 2005 showed a sharper increase of Import Duty Revenue. These years showed an increase in activity and in the value of imports. Likewise, observing conditions in the years 2007 to 2011, the same trend of both rising Gross Domestic Product and Import Duty Revenue is displayed, reflecting import-export activities' ability to provide

a stimulus to the level of consumption, investment and government spending. From the results shown, signs of regression coefficients Gross Domestic Product parameters are positive and have a significant influence. This shows that the increase/decrease in the Gross Domestic Product will affect the increase or decrease in Import Duty Revenue with a significant degree of influence.

Thus, the hypothesis of the study, stating that import duty revenue has a positive elasticity to changes in gross domestic product is acceptable. The productivity value of international trade taxes (tax buoyancy) is 2.89. It can be said that the elasticity of GDP to Import Duty Revenue indicates that a 1% increase in Gross Domestic Product will increase Import Duty Revenue by 2.89%. In other words, the productivity of Import Duty Revenue or the elasticity of the Gross Domestic Product to Import Duty Revenue amounted to 2.89. The elasticity of the elastic category, which changes the value of the Gross Domestic Product, will lead to changes in the value of Import Duty Revenue, making it greater.

Gross Domestic Product includes factors of consumption, investment, government spending, exports and imports. Assuming the factors of consumption, investment, government spending and exports are fixed, then an increase of 1% in the value of imports will cause an increase in the value of Import Duty Revenue amounting to 2.89%. Under these conditions, it is necessary to analyze further the dominant type of goods imported, whether they be consumer goods (finished goods) or intermediate goods (semi-finished goods or raw materials). With the levels of productivity or elasticity at 2.89 percent, it should be assumed that most of the imported goods are consumer goods, leading only to an increase in national output elements such as the level of consumption.

However, the level of investment and exports is not likely to increase significantly. This condition is certainly not beneficial for the economy as it will engender a trade deficit, due to the higher level of imports than exports. If we adopt the income-elasticity approach,

the elasticity of the Gross Domestic Product to Import Duty Revenue is indeed elastic, and if the goods are elastic, they are included in the category of primary and luxury goods. In general, it is known that luxury goods are only accessible to high-income categories of consumers with a minor impact on the economy.

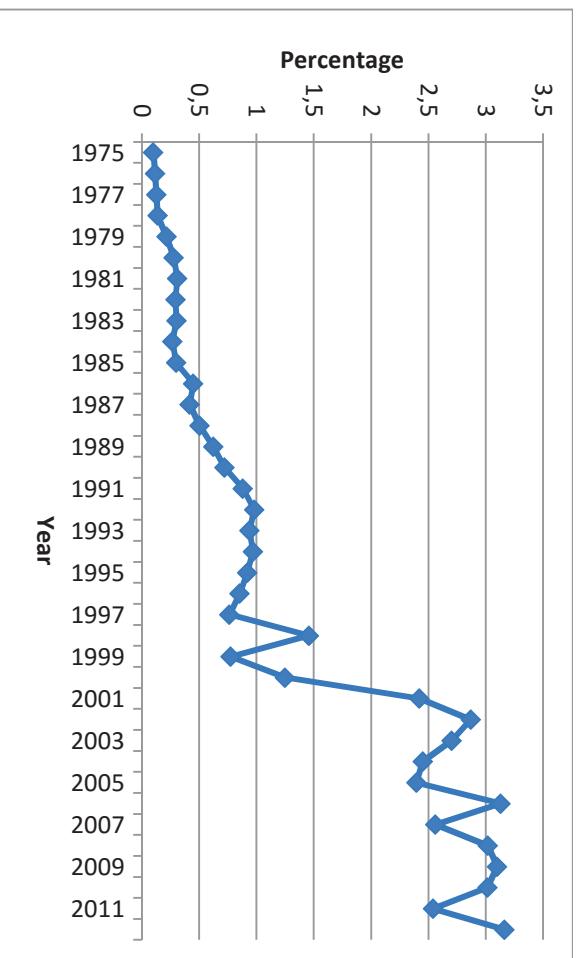
This may reflect the fact that the increase in imports would increase Import Duty Revenue but not have a broad effect on the economy or national output, because the increase only raises the level of consumption. Surely, a government expects import activities to provide a strong impulse to increased investment and export growth.

The policy conducted by the government today still provides opportunities for substantial imports of consumer goods, which are certainly not optimal in providing added value for the economy. It can also be concluded that the government's policy in relation to international trade is not sufficient to provide a significant stimulus for increased investment and export-oriented production.

Another element to be considered is the fact that the supervision of imported goods carried out by the Directorate General of Customs and Excise is not optimal. This is because of alleged rampant illegal imports into Indonesia. Likewise, the behavior of employers, entailing a likely continued misuse of the facilities provided by the government. One example is the declaration of imported goods as raw materials, when in reality they are finished goods, another is companies that used the Import Facility for Export Purpose, but in fact the goods were not exported, but sold domestically.

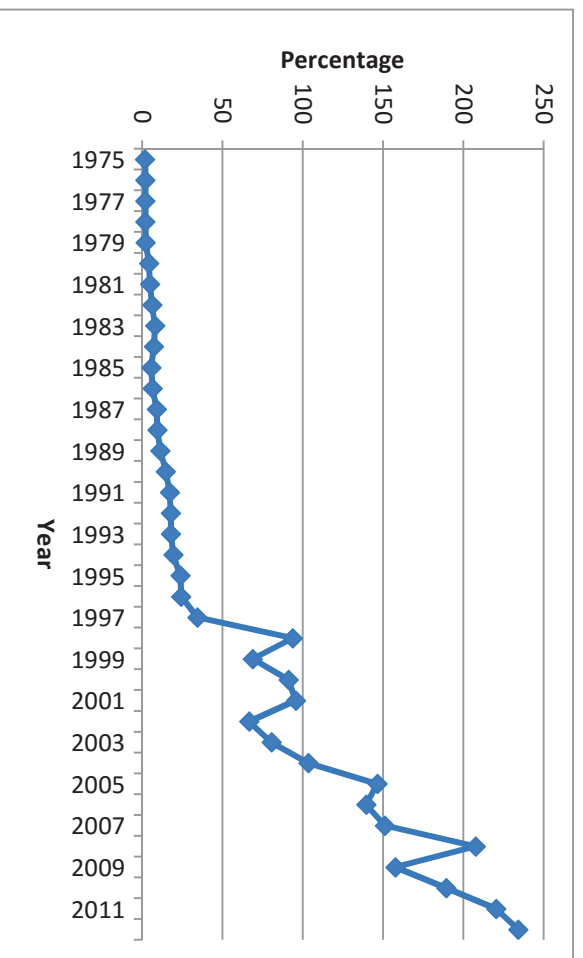
Graphs of Import Duty Revenue, GDP, the value of imports, exchange rates and average tariff rates can be seen in Figures 2.15, 2.16, 2.17 and 2.18.

Figure 3.13 Import-Duty Revenue GDP (percentage)



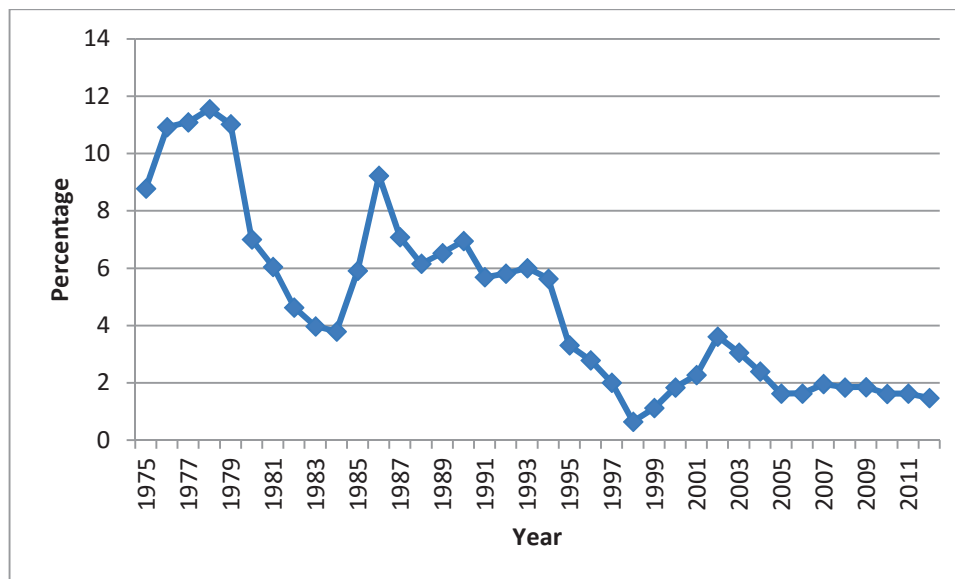
Source: Ministry of Finance

Figure 3.14 Import Value to GDP (percentage)



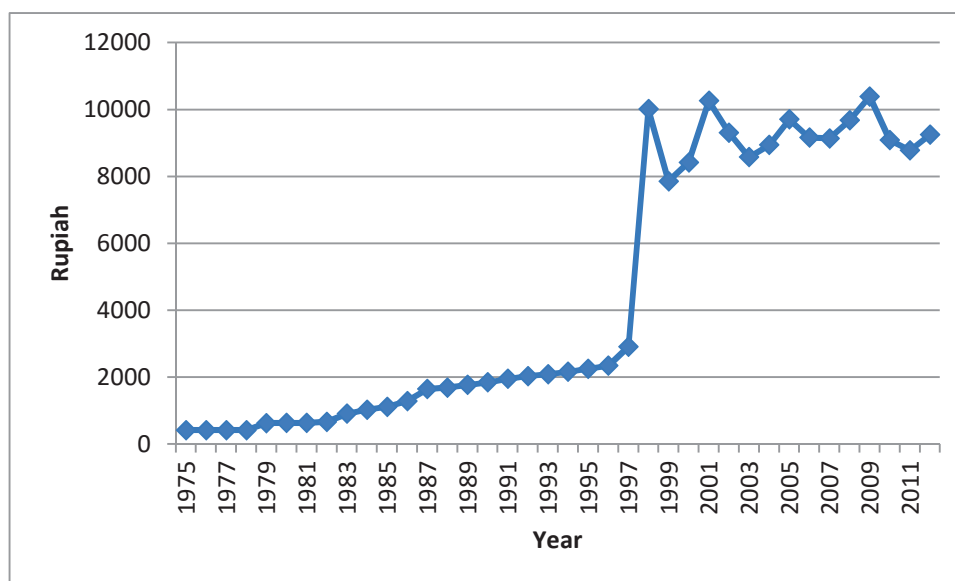
Source: Ministry of Finance

Figure 3.15 Average Tariff Rate (percentage)



Source: Ministry of Finance

Figure 3.16 Exchange Rate (Rupiah)



Source: Ministry of Finance

From these figures it can be seen that the trend of import duty revenue is almost similar to the tendency of the value of imports. The exchange rate has a tendency to be slightly different, while the average tariff rate has a tendency to decrease in line with the lowering of tariffs due to trade liberalization agreements.

The results of regression show that the coefficients of import value are positive and have a significant effect at 99% confidence level, meaning an increase in the value of imports

will lead to a rise in Import Duty Revenue. The long-term coefficient of elasticity of the percentage of import duty revenue of GDP to percentage of imports of GDP is 0.70 percent. This means that any increase of 1% in the percentage of imports of GDP will increase the percentage of duty revenue of GDP by 0.70 percent in the long term. In the short term, changes in the value of imports (MGDP) have a positive influence on changes in import duty revenue. MGDPT coefficient of 0.31 is the short-term coefficient when the long-term coefficient is 0.70.

From these results, with the elasticity approach, it can be said that the change of the value of imports led to changes in import duty revenue which is lower or in the inelastic category. This is due to government policies related to import duty exemption for receiving facilities of bonded storage or ease of import destined for export, where the granting of such facilities means the import duty component is deferred or paid by the government.

Another factor is the optimization of the investigation which led to the reasonableness of the value of imports. Importers notified in the Import Declaration document were allegedly still guilty of unfair trade practices such as under-invoicing. To minimize the practice of under-invoicing, there are necessary demands for professionalism and integrity as well as support from Indonesia Customs employees so that comparative data are up-to-date and valid. To optimize the examination of the import value of notified importers, it is also required to optimize the inspection policy during the post-clearance audit compared with the pre-clearance inspection. The advantages of post clearance audit examination do not hamper the process of acceleration of expenditures, as well as giving a more accurate examination done by the audit mechanism.

The long-run of the coefficient of elasticity of the percentage of duty revenue of GDP to exchange rate is 0.88 percent. This means that any increase in the percentage of exchange rate of 1% will increase the percentage of duty revenue of GDP by 0.88 percent in the long term. The coefficient of the exchange rate (against the US dollar) is positive and have a

significant effect at 99% confidence level, which means a change in the exchange rate would lead to a increase in import-duty revenue. In the short term, changes in the exchange rate (ER) have a positive influence on changes in import duty revenue. ER_t coefficient of 0.25 is the short-term coefficient when the long-term coefficient is 0.88.

This shows that an increase in the exchange rate that causes the relative price of imported goods to become more expensive will cause an increase in import duty revenue. This can occur when the volume of imports do not experience a drastic decline because the demand for goods imported for further processing into export-oriented goods has increased so that the increase in the exchange rate is positively correlated to import duty revenue. In other words, an increase in the exchange rate is able to provide stimulus for export activities.

The long-run of the coefficient of elasticity of the percentage of duty revenue of GDP to average tariff rate is 0.13 percent. This means that any increase in the percentage of average tariff rate of 1% will increase the percentage of duty revenue of GDP by 0.13 percent in the long term. The coefficient of the average tariff rate is positive and have a significant effect at 99% confidence level, which means a change in the average tariff rate would lead to a increase in import-duty revenue. In the short term, changes in the average tariff rate (ATR) have a positive influence on changes in import duty revenue. ATR_t coefficient of 0.04 is the short-term coefficient when the long-term coefficient is 0.13.

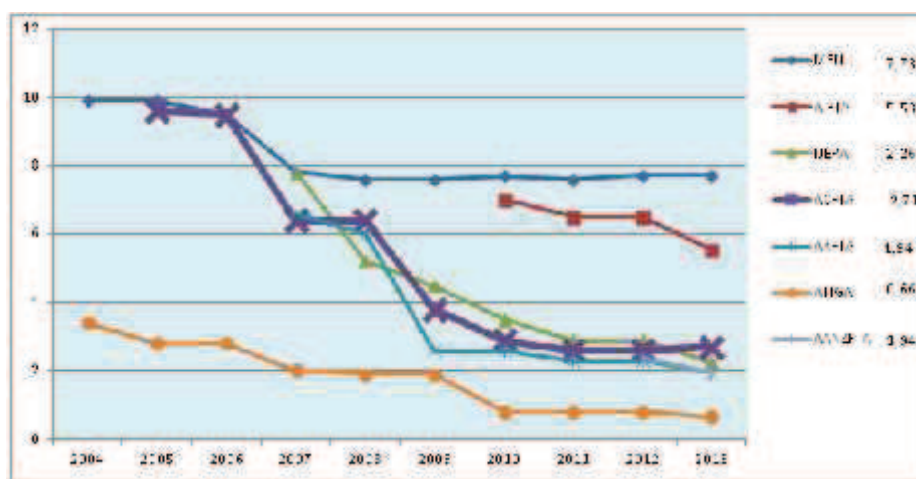
When analyzed from the table of tariffs, the obtained information on the range in the period 1999 to 2007 indicated an increasing trend in the level of average tariffs, followed by an increase in Import Duty Revenue. In the period, the government adopted a policy of harmonization of tariffs.

Harmonization of the import tariff program is basically a gradual tariff adjustment scheme, so as to create a structure of tariffs which are harmonized, either in inter-industrial group fashion (upstream and downstream) or between products within an industry. The

Objectives of Rates Harmonization program basically exists to encourage greater efficiency and competitiveness in the domestic industry, which is fair for all industry sectors, providing certainty for investors, in anticipation of economic globalization (AFTA, APEC, and the WTO) and improvement in the efficiency of customs administration and prevention of smuggling. The Import Tariff Harmonization Program will be set up gradually by taking into account the level of competitiveness of national products and will provide legal certainty for investors, protection for consumers, and improvement in the efficiency of customs administration.

Trade cooperation can be classified into two categories, namely the Free Trade Area (FTA) and Economic Partnership Agreement (EPA). In practice, as regards FTA and EPA, it was agreed that for at least 90% of all traded products, import duty rates should be lowered immediately and gradually abolished in the next few years. Through the liberalization of international trade cooperation, one by one, tariffs began to be revealed. The modalities of the lowering of tariffs are as follows:

Figure 3.17 Decline in Import Tariff Preferences 2004-2013 (percentage)



Source: Ministry of Finance

The terms of the agreement lowering tariffs apply reciprocally to all member countries in any trade cooperation. This provision is the primary means to achieve the goal of

globalization in trade between countries, in other words the promotion of trade between countries in the form of increased exports and imports.

Currently, implementations of the application of tariff preferences are very diverse. Different tariffs exist with ASEAN-Japan, ASEAN-Korea, ASEAN-China, ASEAN-ANZ, Indonesia-Japan and ASEAN-India. This gives rise to differences in the number of FTA preferential tariff rates, the result of the free trade agreements between Indonesia and other countries. For example, for Indonesia and China, some imported goods from China are categorized sensitive goods where there are no lowered import duties, but for trade with Korea, there is different treatment of imported goods where they could be in the category of normal goods. This is the Spaghetti Bowl Effect, a phenomenon that is increasing the complexity of the application of the rules of origin of imported goods due to the complexity of international trade policy in a free trade agreement signing. These conditions have resulted in trade policies that discriminate tariffs between countries.

The dummy variable coefficient of liberalization policies is negative. It means trade liberalization policies negatively affect the reception duties. As studies by the IMF and the World Bank state, the effect of trade liberalization on international tax revenue is ambiguous, depending on many factors such as elasticity of GDP to reception duties possessed. From the results of this study, it can be concluded that the policies of trade liberalization are still able to increase the volume of imports, because the import activities provide a stimulus for investment activities, as well as export activities.

Policies for inter-regional trade liberalization as well as bilateral agreements between governments also have an impact on the increase in imports. Such policies are CEPT-AFTA, the ASEAN-China FTA and ASEAN-Korea FTA, featuring incentives in the form of tariff reduction, so that trade tax becomes smaller but the volume and value of imports increases. The end result is still a positive influence on reception duties.

The trade liberalization policy refers to the Heckser-Ohlin (HO) theory which suggests that a country's international trade is influenced by endowment differences. The difference between the opportunity cost of a product of a country with other countries can occur due to differences in the number or proportion of the production factors owned by each country.

From the analysis of the policies taken by a government, such as ease of licensing, simplification of bureaucratic procedures and reduction of non-tariff barriers, it can expect to encourage investments and also provide an increase in imports. There is issuance of other policy packages that aim to improve the competitiveness of Indonesian exports and decrease barriers which lead to a lack of investor interest. These ease the trade system of non-oil exports, the import duty refund facility, exemption from import duty, and enforcement of bonded zones that can increase the volume of importation.

In 2010, Import Duty Revenue increased from Rp12.1 trillion to Rp20.0 trillion in 2010, with an average growth of 13.3 percent. Progress of Import Duty Revenue is influenced by foreign exchange paid for imports (dutable imports) and the progress of tariffs is highly dependent on tariff harmonization policy. The policy needs to be carried out with respect to harmonized implementation of additional free trade agreements with several countries or regions such as ASEAN (AFTA), ASEAN-China FTA (ACFTA), ASEAN-Korea FTA (AKFTA), and Indonesia-Japan (IJEPA).

In 2010, the Government of Indonesia concluded a new trade agreement with the countries of India, the ASEAN-India FTA (AIFTA). Cooperation within the AIFTA framework entered into force in September 2010 as stipulated in the Regulation of the Minister of Finance No. 144/PMK.011/2010 concerning Stipulation of Import Duty Tariff within the Cooperation of the AIFTA Framework.

The harmonization policy concerning import duty in Indonesia in year 2005-2010 was established in the Ministry of Finance Decree No. 591/KMK.010/2004, and the Minister of

Finance Regulation No. 132/ PMK.010/2005 on the Program of harmonization of Import duty 2005-2010. In the process, the Government set a change to the policy of tariffs on the import of agricultural products, fisheries, pharmaceuticals, manufacturing, agro-industry, high technology-based industries and small and medium industries as stipulated in the Regulation of the Minister of Finance No. 241 / PMK. 011/2010 on the Classification System of Goods and Imposition of Import Duty on Imported Goods. In the harmonization policy concerning import duty, rates for several industries in the *normal-track* category were scheduled to increase from 0 percent in 2005-2009 to 5 percent in 2010.

The dummy variable coefficient of crisis is negative, which means that a crisis negatively affects the import duty revenue. This shows that an economic crisis has an impact on the decline of import operations. Another factor is that an economic crisis will reduce levels of income and the purchasing power of society, so there is a shortage on the demand side. The level of investment was also greatly reduced, so that the supply side experienced a decline; in this case, the production of goods for export also experienced a sharp decline. For the economy as a whole, the economic crisis had a strong negative effect on the economy in terms of both demand and supply of the marketing of goods/services and money and capital markets. To help overcome the economic crisis, the government implemented various fiscal incentives and disincentives for the abolition of capital investment projects that were facing problems due to the crisis. This incentive program was a tax incentive for investors. Incentives came in the form of a tax exemption (tax holiday), which was valid until 31 March 2000. The tax allowance/tax deduction was imposed on 1 April 2000.

Then in year 1995/1996, import duties revenue reached Rp 870.7 billion, or 22.3 percent when compared with the results of the previous year. But in the budget, Import Duty Revenue still contributed significantly, i.e. 6.2 percent of total tax revenue, or 4.1 percent of domestic revenues. The lower revenue is primarily due to a policy of lowering rates in the

May 1995 Deregulation Package and the lowering of tariffs on Deregulation Package of January 1996.

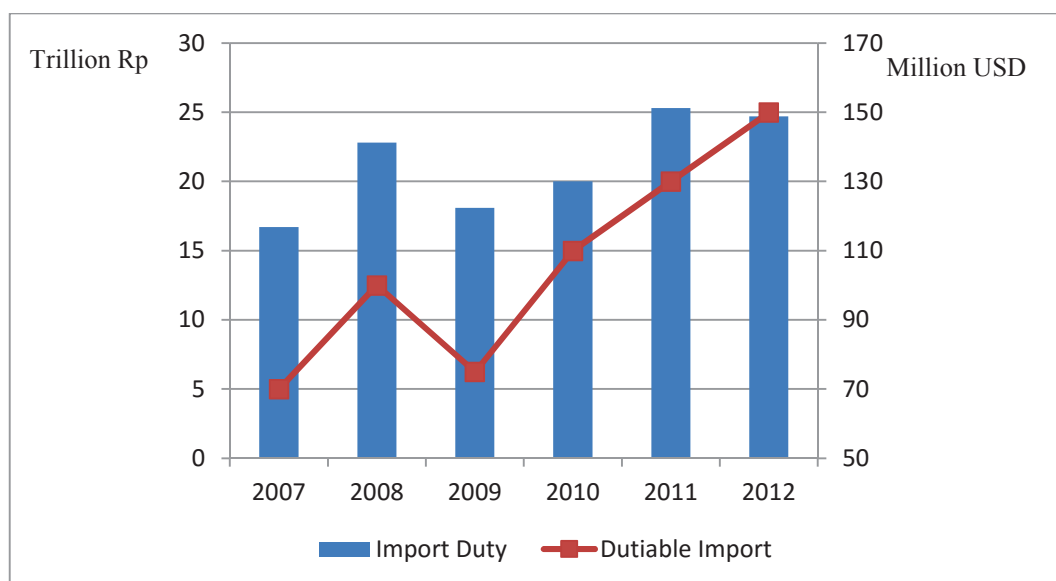
Furthermore, in the year 1996/1997, Import Duty Revenue declined and only reached Rp 2807.1 billion or 18.6 percent lower than in the state budget where it totaled Rp 3450.5 billion. When compared with the previous fiscal year (1995/1996), reception duties decreased to Rp 440.8 billion or 13.6 percent. The decline is due to deregulation contained in the Minister of Finance Decree No. 378 of June 1996 on the Customs Tariff Schedule decline which included the lowering of tariffs scheduled up to 2003. In addition, the decrease can be explained by the agreement between the government of Indonesia and ASEAN countries in the framework of the Common Effective Preferential Tariffs for ASEAN Free Trade Area (CEPT for AFTA). The series of tariff reductions certainly has an impact on the acceptance of duties.

Subsequently, in July 1997, the government lowered import duty on 1,600 tariffs and in September 1997 on 153 tariffs. To optimize Import Duty Revenue, efforts continued to be made, including the implementation of a self-assessment system, which calculated and paid duties owed with regard to the provisions prohibitions and restrictions on imports. In the case of import supervision, implementation focused on the examination of imported goods followed selectively by post-audit verification activities and there were also continued efforts to increase supervision in order to prevent smuggling.

The volatility of the rupiah has strengthened the impetus to further spur the increase in non-oil exports. In connection with this, the Government issued a Policy Package in November 1997 which included deregulation in the areas of trade, export, and import. The policy package of November 1997 also included deregulation in the field of imports, namely the lowering of tariffs for some commodity groups, fishery products, chemical products and metals. In addition to a reduction in import duties, the Government also exempted import

duties on imported machinery and raw materials / auxiliary materials for the construction and development industry.

Figure 3.18 Import Duty Revenue and Dutiable Import



Source: Ministry of Finance

In the period 2007-2011, international trade tax revenues experienced an average growth of 26.8 percent. Based on the composition, reception duties contributed an average of 71.1 percent. The progress of international trade tax revenues was strongly influenced by external economic conditions, mainly due to the activities of world trade and commodity prices, especially crude palm oil (CPO) in the international market. In addition, international tax revenue was also affected by international trade policy that may have affected the structure of tariffs which were applicable. Revenue from import duties in the period 2007-2011 increased by an average of 10.9 percent. The main factors affecting Import Duty Revenue included an increase in the value of imports of foreign exchange and extra efforts in the field of customs and excise.

The coefficient of error correction term (ECT) of model B which shows the speed of adjustment is negative and amounted to -0.49, is statistically significant at 99% confidence level. This means error correction model used in this study is valid. The EC_t 0.49 coefficient

value of 0.49 mean 49 percent of the imbalance in the previous year was corrected in the current year.

3.5 Conclusions

In research of trade liberalization, a lot of attention has been paid to its impact on export performance, economic growth, employment, income distribution, and wage inequality, but very little to its impact on taxation and government revenue. These are equally important areas of inquiry, because if trade liberalization leads to a reduction in tax revenues, this can have serious implications for fiscal reform of countries that have a budget constraint. The main aim of this study to analyze the impact of trade liberalization on import-duty revenue in Indonesia using time series data during period 38 years. In accordance with the objectives, it has done tests with OLS analysis and we also propose cointegration analysis since there are non-stationary problems with the data.

Import duty is a unique tax revenue because of its function not only as state revenue but also as import regulator for both domestic consumption and production goods. Furthermore, the policy on import duty is closely related to economic-political interest of other countries, that is, imports from the relevant countries. Therefore, policies on import duty should be prudentially applied and comply with international trade policies.

Import duty is one of the international tax revenues set forth in the Indonesian State Budget (APBN). As revenue, import duty has strategic functions. However, the Government should be very careful in determining rates of import duty because they can instead hamper national economic development.

In the long-run the greatest variable effects on the import-duty revenue (% of GDP) are Exchange Rate, Import Value (% of GDP), and average tariff rate. In the short run, the results is little different with long-run. The greatest variable effects on the import-duty revenue (% of GDP) are Import Value (% of GDP), Exchange Rate, , and average tariff rate.

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From the analysis of the policies taken by a government, such as ease of licensing, simplification of bureaucratic procedures and reduction of non-tariff barriers, it can expect to encourage investments and also provide an increase in imports. There is issuance of other policy packages that aim to improve the competitiveness of Indonesian exports and decrease barriers which lead to a lack of investor interest. These ease the trade system of non-oil exports, the import duty refund facility, exemption from import duty, and enforcement of bonded zones that can increase the volume of importation.

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CHAPTER 4 TRADE LIBERALIZATION, POVERTY AND INEQUALITY IN INDONESIA

4.1 Introduction

4.1.1 Background

The proponents of trade liberalization have always campaigned that trade liberalizations are good for the economy with the “gains from trade” that make every person “better off”. Another argument that supports trade liberalization and poverty alleviation is that liberalization could increase the price of agricultural products, which in turn is expected to increase the incomes of rural economies in developing countries where poverty issues are central. (Hertel *et al.*, 2004). The world economy is undergoing a process of trade liberalization. It is marked by the formation of the GATT in 1947, the role of which is now replaced by the World Trade Organisation (WTO). The relationship between trade liberalization and poverty has been debated in recent years, at the Geneva Conference at 1999 about the WTO and developing countries, Joseph Stiglitz, the Vice President of the world bank at that time, suggested that the next round of WTO negotiations be named “The Development Round” and that this negotiation should place emphasis on poverty alleviation. These directives were supported by Mike Moore, the recent Director General of the WTO. Finally, the current WTO Negotiation round is called “Doha Development Round” (McCulloch, Winters and Cirera, 2001). In line with this growing issue, the Parliament of Sweden in cooperation with the Trade Research Division of World Bank sponsored a conference in Stockholm in October 2000 which aimed to perform a quantitative assessment of the relationship between trade liberalization and poverty.

The Globcom Conference brought together some economists to perform the household level survey (Levinsohn, S.Berry and J.Friedman, 1999; Case, 1998; Friedman, 2001) as well as some researchers who conducted the research using the macroeconomic approach (Harrison, Rutherford and Tarr, 2002). The important aspect of this conference was the disagreement about the best approach to analyze the relationship between trade liberalization

and poverty. It could be said that the researchers still had different opinions and strived to achieve a consensus on the best approach to analyze the impact of trade liberalization on poverty, especially regarding the relationship itself (Hertel *et al.*, 2004).

Liberalization is often defined as the economy of a country which is more open. The liberalization policy reflects the movement toward a more neutral, liberal or open direction. A policy regime is considered to undergo a policy of liberalization when the overall intervention level is on the wane. In addition, a liberal policy can also be marked by the growing importance of the role of trading in the economy. In general, liberalization is marked by the reduction or even the elimination of trade barriers such as tariffs and non-tariff ones. It is important to eliminate these barriers as their absence could encourage the flow of goods and services (World Trade Organization, 2005). Until now, there has been no single agreement on the impact of liberalization. Many studies conclude that free trading has positive implications for the countries involved. In addition to the growth of the world economy (Krueger, 1997), trade liberalization also increases welfare (Krueger, 1999). Urata and Kiyota (2003) find that free trading in East Asia is able to stimulate economic growth.

The impact of liberalization is expected not only to bring about changes in national input, but also favor the expansion of job opportunities. Theoretically, it is believed that in the event of national output increases, there will be additional job opportunities. Studies on the impact of trade liberalization on job opportunities for the case of one country were done by several experts (Ravenga, 1995 ; Milner and Wright, 1998 ; Rattso and Torvik, 1998 ; Levinsohn, 1999 ; Mesquita and Najberg, 2000 ; Torres, 2001) with different results that showed that there was no exact pattern about the impact of trade liberalization on the job opportunities in a country.

Trade liberalization is often seen as an important element to overcome poverty. There is evidence that suggests that trade liberalization increases growth and production as well as

bringing improvements in the overall economy. It is based on classical economic theories such as those by Adam Smith (1776) and David Ricardo (1815) which have been practiced for more than two hundred years (Winters, McCulloh, A. McKay, 2004). Although many studies showed evidence of the benefits of trade liberalization, there are still many problems in the process, especially the problems felt by millions of people who suffer poverty caused by trade liberalization itself.

Poverty is the most urgent problem of the global economy today, especially in developing countries. Therefore there is no doubt that poverty, together with the distribution of income, is the focus of attention of all parties, particularly academics and policy makers. Poverty can be defined in the context of the relative and the absolute. Relative poverty is where the living standards are under a certain percentage of the average standard of living in a country, while absolute poverty is where the income levels fail to support a decent living or survival needs such as food and shelter.

The theory of "Trickle Down Effect" for economic growth describes the relationship between trade, economic growth and poverty. In recent years, the neoliberal economists (for example, Berg and Krueger, 2003 ; Bhagwathi, 1995 ; Dollar and A.Kraay, 2004 ; Edwards, 1998 ; Krueger, 1997 ; Krugman, 1994) have tried to build the opinion that economic liberalization succeeds in supporting economic growth and reducing poverty in developing countries. The argument says that trade liberalization encourages excellence in the organization and the management of the economy, which in turn promotes growth and prosperity. The growth achievement can reduce and alleviate poverty, improve living standards, reduce inequality between the rich and the poor, and bring about convergence between countries through faster growth in poorer countries. The best way to achieve economic growth, according to them, is by eliminating protectionist policies and by integrating the global capitalist economy. Furthermore, they claim that the liberalization of

capital, trade and investment and the privatization of the national economy, in the long run, can attract foreign capital flows and portfolio investment and create job opportunities for the poor.

The benefits of trade for growth had been lengthily and straightforwardly discussed along with the emergence of the theory of absolute advantage from the US and that of comparative advantage from David Ricardo in the 19th century (Salvatore, 2007). In the late 20th century, the focus of the debate began to vary. Most economists agreed that there were benefits to be gained from trade. There are various opinions on the liberalization of trade in developing countries. Bhagwati and Srinivasan (2002) says that liberalization in developing countries will bring a positive impact and can help reduce poverty in the country. Meanwhile, Stiglitz (2002) says that liberalization in many parts of the world brings a bad impact. According to Berg and Krueger (2003), the relationship between trade liberalization and income distribution is still ambiguous due to the data in some countries which show different results.

Indonesia has been conducting comprehensive trade liberalization since the 1980s. The development of Indonesian exports and imports had increased during the years 1996-2006. In such a long period, it is clear that poverty alleviation has not achieved the expected results. The poverty situation is exacerbated by the increase in income inequality, at least since 2002, when Indonesia began to try to emerge from the crisis. The acceleration of post-crisis development is seen not to reach the poor people. Poverty in Indonesia can be seen at the town and village levels. In general, the level of poverty in rural areas is higher than that in urban areas. The number and the percentage of poor people in urban and rural areas in the period of 1996-2005 fluctuated from year to year, even though there was a tendency to decrease during the 2000-2005 period.

4.1.2 Problem Formulation and Research Question

Indonesia has been conducting comprehensive trade liberalization since the 1980s. Meanwhile, the percentage of poor people in Indonesia had not changed since 1996 to 2005; 17.7 million in 1996 and 16 million in 2005. Trade liberalization in developing countries has a different impact on poverty. Various pros and cons to these problems emerge. It is important to note how trade liberalization affects poverty in Indonesia. Furthermore, Indonesia has uniqueness as a country with many provinces. The characters of provincial and urban and rural areas in Indonesia are also interesting things to study. For that, the research question to be answered is: Is there any significant relationship between trade liberalization on poverty in Indonesia, either directly or indirectly? How does trade liberalization influence poverty in Indonesia? Does it bring positive or negative influences?

4.2 Conceptual Framework

4.2.1 Poverty, Inequality and Absolute Poverty

Studies on poverty started more than a hundred years ago. In 1899, Seebohm Rowntree undertook a study of poverty in York, England (Haughton and Khandker, 2009). Together with some of the volunteers she interviewed 11,500 households within a period of six months. The information they collected was about home, home-ownership status, employment and income. Until now, most of the concepts concerning relative poverty are still the same as those performed by Seebohm Rowntree more than a hundred years ago, which concerned the adequacy of clothing, food and shelter. More simply, the World Bank defines that poverty is a lack which is often measured by the level of welfare.

Poverty is lack of shelter. Poverty is being sick and not being able to see a doctor. Poverty is not being able to go to school and not knowing how to read. Poverty is not having a job, is fear of the future, living one day at a time. Poverty is losing a child to illness brought

about by unclean water. Poverty is powerlessness, lack of representation and freedom. In many cases, poverty has been measured with economic prosperity terminology such as income and consumption. Someone is said to be poor when he is under a certain minimum level of welfare that has been agreed. Niemietz (2011) states that poverty is the inability to buy basic necessities such as food, clothing, shelter and medicines.

Economists measure wealth and poverty with a variety of measuring tools. Three of the most common measurement tools used are income, assets, and socioeconomic (Gorman, 2011). Sociological studies on poverty were initiated by Charles Booth and Seebohm Rowntree (Townsend, 1954). They said that families living in poverty are divided into two parts, namely a family whose income is not sufficient to meet the minimum requirements. That poverty is called primary poverty. Then, the whole family, whose income is just enough to meet their physical needs. This poverty is called secondary poverty. Chambers (2006) argues that the definition of poverty depends highly on the person asking, how it is understood and who responds to it. This perspective classifies the meaning of poverty into several groups; a group that looks at poverty from the income side, then the one which interprets the poverty as material deprivation and a third group that claims poverty as a physical deficiency or disability and with social dimensions. Finally, there is a group which defines poverty as a broader concept including multiple dimensions of deprivation.

Absolute poverty can be measured by the number of individuals to figure out how many people have an income below the absolute poverty line. If the individual count is considered part of the total population, then we obtain the individual index. The poverty line is set at a level that is always constant in real terms, so that we can track the progress made in reducing poverty in the absolute level all the time. The idea underlying the determination of this level is a minimum standard in which a person lives in absolute misery, that is, in very bad health. The terms inequality and poverty often appear in informal speech, but they should

be measured more precisely in order to give a better figure of how much progress has been achieved, how much more shall be pursued and how to provide incentives to government officials in order to focus on the most urgent needs (Todaro and Smith, 2003).

(i) The measurement of Foster-Greer-Thorbecke

Sometimes we also want to measure the degree of inequality among the poor, such as the Gini coefficient among the poor G_p , or the coefficient of variation of income (CV) among the poor, CVP. The Gini coefficient among the poor or CV is important to know because the impact of economic shocks on poverty can be very different depending on the level and source distributions among the poor.

(ii) Human Poverty Index

This measurement of poverty was introduced by UNDP in its *Human Development Report* in 1997 because UNDP was not satisfied with the poverty measurement of "income" in dollars per day that was introduced by the World Bank. UNDP sought to replace the "income" poverty measurement by the "human" measurement of poverty. The agency subsequently formed what is called the Human Poverty Index (HPI) which in many ways can be analogous to the human development index. UNDP believed that human poverty *should be* measured in terms of loss of principal things, namely life, basic education and overall, economic status.

Economists generally distinguish two principal measurements of income distribution which are both used for analytical and qualitative purposes. These measurements are income distribution which is the large or the small part of the income received by each person and the functional distribution or the owner distribution of the production factors. The distribution of personal income or the income-size distribution is a measurement that is used most by economists. This measurement directly calculates the amount of income received by an individual or household. It does not matter how they earn it. What is considered here is how

much the income received by a person, no matter where its source. In addition, the location of the source from which the income is obtained is also ignored.

4.2.2 Gini coefficient and the measurement of Aggregate Inequality

The Gini coefficient (taken from the name of the Italian statistician) is a measure of the aggregate inequality whose numbers range from zero (perfect equalization) to one (perfect inequality). In practice, the Gini coefficient for countries whose inequality degree is high ranges from 0.50 to 0.70, while for countries whose incomes are relatively evenly distributed the numbers range from 0.20 to 0.35.

We may also use such an aggregate measure as the Gini coefficient to measure the equity level of other things outside income. It is known that the Gini coefficient is a measure that meets the four criteria that are highly sought-after, namely:

1. Anominitas principle

The size of inequality should not depend on who earns higher incomes.

2. Scale Independence

A measure of inequality should not depend on the size of the economy or the state or the way we measure earnings.

3. Population Independence

The inequality measure should not be based on the number of income earners (total population).

4. Transfer

Also called the Pigou-Dalton principle that assumes that all other revenues are constant if we transfer some income from the rich to the poor, then it will generate new income distribution which is more equitable.

Using Gini coefficients based on data from the World Income Inequality Database, Martinez Vazquez *et al.* (2012) investigate how tax and expenditure policies are associated with income redistribution in an unbalanced panel of developing and developed countries over the period 1970–2009.

4.2.3 Relationship between Trade, Poverty and Inequality

The past 10 years have witnessed a growing interest amongst both academics and policy-makers in the relationship between trade and poverty (World Bank, 2002 ; Dollar and Kraay, 2004 ; Hertel and Reimer, 2004 ; Winters *et al.*, 2004). Several recent studies show that trade liberalization directly and indirectly impacts poverty through multifaceted channels (Berg and Kruger, 2002 ; Cline, 2004 ; Dollar and Kraay, 2004).

The positive direct impacts of trade on poverty include facilitating the participation of the poor in global labor divisions and production chains, providing the poor with broader access to global factor and product markets, and increasing the supply of more productive technologies that better match the needs of the poor. Therefore, the poor might have more opportunities to benefit from global economic integration, to increase their incomes, and to improve their living standards.

However, the cost and risk brought about by trade liberalization might also be significant for the poor (Nissanke and Thorbecke, 2005 ; Winters *et al.*, 2004) argue that trade liberalization might increase both the risks faced by poor households and their vulnerability to external shocks. Therefore, opening up an economy through trade liberalization will directly lead to both positive and negative impacts on poverty, creating winners and losers among the

poor. Trade liberalization might indirectly affect poverty by influencing economic growth. In the published literature, the trade–growth–poverty relationship involves two critical linkages that have been at the center of heated debate during the past 10 years: whether trade is good for growth (the trade–growth linkage) and whether growth is good for the poor (the growth–poverty linkage). Concerning the trade–growth linkage, several studies suggest that trade is one of the most important driving engines for long-run economic growth (Dollar, 1992 ; Frankel and Romer, 1999 ; Dollar and Kraay, 2004). However, these studies have been criticized on technical grounds (Rodriguez and Rodrik, 1999 ; Cline, 2004). There is also evidence that the positive trade–growth link is neither automatically guaranteed nor universally observable (Nissanke and Thorbecke, 2005). As for the growth–poverty linkage, many studies show that in the long run, growth can be a powerful instrument for poverty reduction (Kakwani *et al.*, 2000 ; World Bank, 2002 ; Dollar, 2004). In their work on growth and poverty, Dollar and Kraay (2002) show that the income growth of the poorest quartile evolves proportionately with average income growth and, therefore, that the poor have benefited from growth at least as much as anyone else in society. However, there is also evidence that different outcomes of poverty reduction are generated for a given rate of growth, where the extent by which growth contributes to poverty alleviation will depend on the initial level of inequality, and on how the distribution of income changes over time (World Bank, 2001).

Trade liberalization might also indirectly affect poverty by influencing income inequality. To investigate the trade–inequality–poverty relationship, two critical linkages should be examined: the impacts of trade on inequality (the trade–inequality linkage) and the impacts of changing inequality on poverty (the inequality–poverty linkage). Concerning the trade–inequality linkage, traditional trade theory predicts that trade openness will increase the relative demand for non-skilled labor in the developing countries, which will in turn cause a magnified drop in the relative wage of skilled labor compared to unskilled labor and,

therefore, lead to a decrease in inequality. However, several recent cross-country studies show that the effects of trade on inequality vary significantly among developing countries, and that the real impacts depend crucially on national policies (Wood, 1994, 1997 ; Feenstra and Hanson, 1997 ; Hanson and Harrison, 1999 ; Robbins and Gindling, 1999). Cardebat and Teïletche (1997) are more specifically interested in the impact of North-South trade and technical progress on relative wages, integrating such an endogenous effect of trade on productivity.

As for the inequality–poverty linkage, a critical issue is often raised as to whether inequality is an impediment to poverty-reducing growth, or more specifically, whether high inequality attenuates the growth elasticity of poverty (Ravallion, 2004; Nissanke and Thorbecke, 2005). Although several observers emphasize the unique role of growth in combating poverty by showing that growth is distributionally neutral and that the increase in growth rates leads to proportionate increases in incomes of the poor (Dollar and Kraay, 2002 , 2004), many others stress that successful poverty alleviation depends not only on favorable changes in average GDP per capita growth, but also on favorable changes in income inequality, because it is not clear that the poor will benefit automatically (Foster and Szekely 2000 ; World Bank, 2001 ; Cornia, 2004 ; Nissanke and Thorbecke, 2005).

4.2.4 The Policy of Trade and Trade Liberalization in Indonesia

Indonesian trade and investment policy has changed significantly and the closed and protected regime has changed to a more open regime. The government has changed the strategy from the *inward-looking substitution* strategy to the *more export-oriented economy*. Currently, Indonesia is one of the East Asian countries that has the most liberal regime. However, this status is still debated.

Under the leadership of the first President (Soekarno), Indonesia's economy was very enclosed and protected. The situation changed when Soeharto led. The new government liberalized trade and investment, eliminating import permit regulations, introducing the "export bonus" and simplifying the procedure of export-import through a trade policy package. The government also proposed abolishing controls on capital, signaling one of the most important moments in capital-account policies in Indonesia (Feridhanusetyawan and Pangestu, 2003). After that, during the 1970s, the oil price rose rapidly and stimulated economic growth so that the government ignored trade liberalization reforms. The government increased protection and implemented a strategy of import substitution. National private banks were involved to support credit subsidies for heavy industries through the state-owned enterprises. The protection was even tightened in the early 1980s when a new import system was introduced.

In the mid-1980s, Indonesian carried out its first trade reform. The government cut the tariffs by 60%, reduced the number of tariff levels from 25 to 11 and converted some import licensing into equivalent tariff forms. The average tariff was lowered from 27% in 1986 to 20% in 1991. Another reform was to eliminate the monopoly on imports and to simplify customs procedures. Next, the average rates persisted and trade liberalization slowed in the early 1990s. The government imposed a national car scheme and improved the tariffs of several chemical products. Then, during the 1997 crisis, the average tariff on agricultural and industrial goods remained stable at around 13%. The Indonesian government decided not to shut out the world and even increased trade liberalization through IMF programs. The government was also committed to eliminating all import licensing, eliminating non-tariff barriers and introducing competition in agricultural products.

Kim (2000) reveals that protectionism increased in some areas. An import ban increased from 7 to 27 tariff restrictions, while imports licensing increased from 27 to 1,027

tariff restrictions between 2001 and 2003. Trade liberalization was rapidly increasing in the 1990s as a result of international commitments under AFTA, APEC and the WTO. Referring to the "Bogor Goals" which was the result of an agreement in Bogor, the developed countries had to implement free-and-open trade and investment in 2010. Meanwhile, the developing countries were to apply the same scheme in 2020. In 1995, the Indonesian government was committed to implementing the tariff reduction schedule which would be at a maximum of 10% in 2003.

Currently, Indonesia has adopted three strategies for international trade, which are supporting the WTO agenda, encouraging the efforts of regional economic integration and increasing bilateral agreements and economic cooperation. The trade policy that was applied was more reactive and ad hoc rather than well-planned. The government only considered adjusting the level of tariff and non-tariff barriers in dealing with issues of international trade. Actually, the main problem in international trade occurred behind border trade such as the deregulation of the services sector, intellectual property rights and so on.

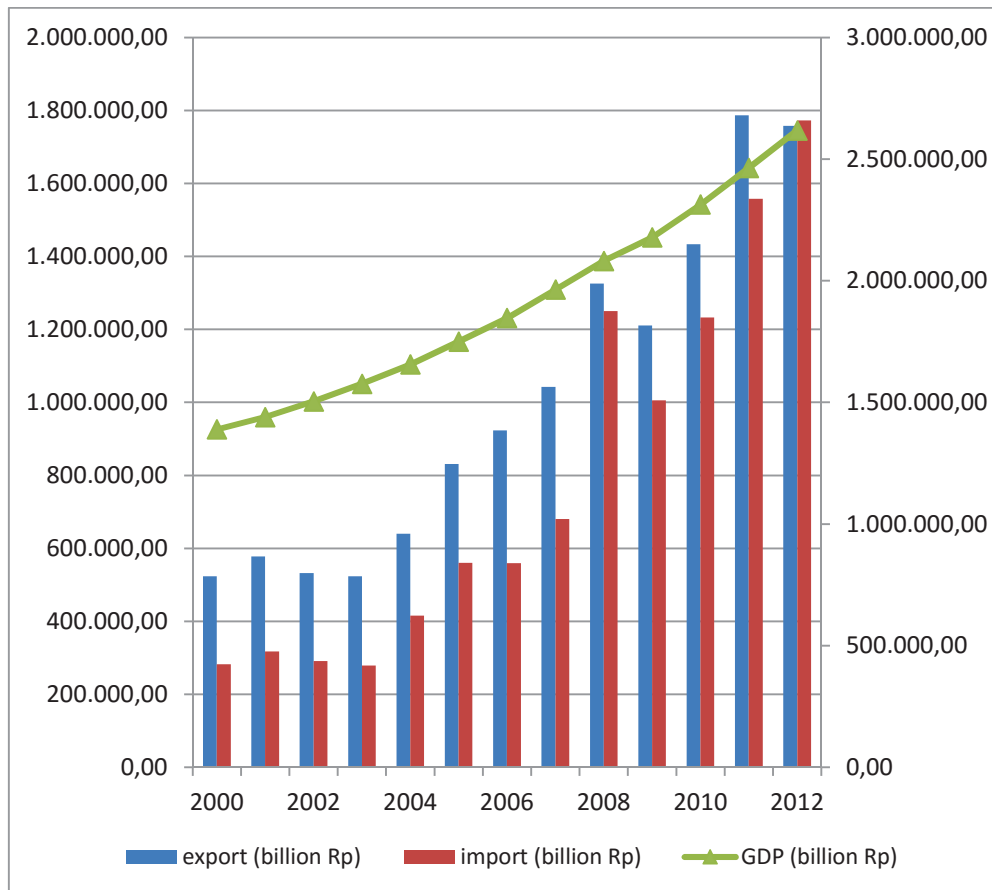
There are four regional and multilateral agreements that Indonesia is involved with today, namely Asean Free Trade Area (AFTA), Asia-Pacific Economic Community (APEC), World Trade Organization (WTO) and ASEAN-China Free Trade Agreement (ACFTA). First, ASEAN countries agreed to establish a free trade area among the state members, known as AFTA in 1992. AFTA only consisted of tariff reductions for some commodities, including agricultural products which were politically sensitive. Next, ASEAN members agreed that the liberalization of agricultural products would begin in 2003 and should have finished in 2010. Despite significant improvements in the implementation of AFTA, some ASEAN members still do not have the motivation to fully open their markets. Second, APEC was established in 1989 with the aim to enhance economic cooperation between the western and eastern countries. In the long run, APEC has an agenda to create free-and-open investment and trade

in the Asia-Pacific. Third, the WTO is a multilateral institution that was founded on January 1, 1995 as a result of the Uruguay Round. The main character of the Uruguay round was the versatility to encourage the liberalization of agricultural products which were very sensitive in developing countries. In general, Indonesia's commitments in WTO could be grouped into six main issues. One of the main issues was the commitment in terms of agriculture. Indonesia agreed to reduce tariffs by 10% for each commodity or approximately 24% for all commodities that began in 1994 and would be effective in the period of ten years.

The latest free trade area agreement signed by Indonesia was ACFTA. ACFTA was established on 4 November 2002 and would be effective in the period of ten years thereafter. Tariff reduction was to be started on 1 January 2005 to 2010 for ASEAN 6 (Brunei, Indonesia, Malaysia, Philippines, Singapore, Thailand) and China. Meanwhile, for new members of ASEAN (Cambodia, Laos, Myanmar, and Vietnam), the reduction of tariffs were to be started on January 1, 2015.

Indonesia has been conducting comprehensive trade liberalization since 2000. The development of Indonesian exports and imports increased during the year 2000. The Indonesian exports and imports developed in line with the development of Indonesia's gross domestic product, as shown in Figure 4.1.

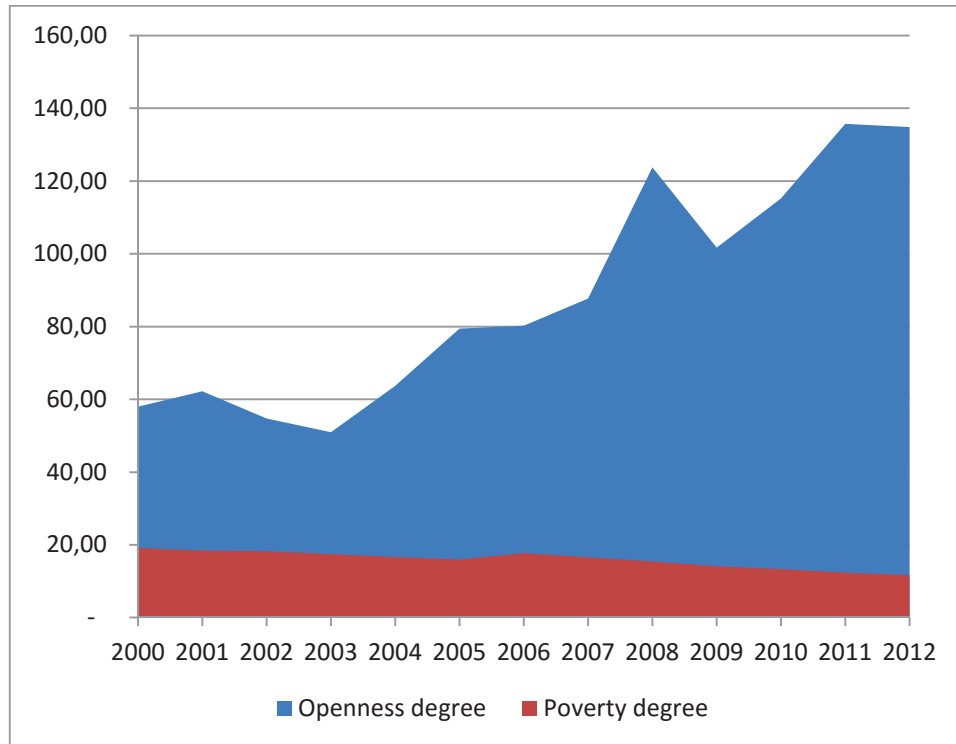
Figure 4.1 Value of Exports, imports and Indonesia Revenues, 2000-2012 (Billion Rp)



Source: Statistics Indonesia, 2000-2013

Trade liberalization is often measured as the degree of openness, which is the ratio of total trade (exports+imports) to gross domestic product (GDP). In Indonesia, trade developments which are increasingly open were followed by the poverty level that is in line with the openness (a trend in the same direction). This can be seen in Figure 4.2, which illustrates the relationship between trade openness and poverty in Indonesia during the period of 2000-2012.

Figure 4.2 Degree of Openness and Poverty Level



Source: Statistics Indonesia (2013)

4.2.5 Poverty in Indonesia

Here is a brief illustration of poverty and income distribution in Indonesia during 1996-2005 in the record of the number of poor, the Gini coefficient and the distribution of expenditures in urban and rural areas. The Gini coefficient is the indicator that describes the condition of the income distribution. Poverty in Indonesia can be seen at the town and village level. In general, the level of poverty in rural areas is higher than in urban areas. The number and percentage of poor people in urban and rural areas in the period 1996-2005 fluctuated from year to year, even though there was a tendency to decrease during the 2000-2005 period (Table 4.1.). Table 4.1 shows the total number and percentage of poor people in Indonesia in urban and rural areas. During the crisis, the percentage of poor people in Indonesia increased from 11.3% in 1996 to 24.2% in 1998. However, the total percentage of poverty declined continuously to 15.97% in 2005. This indicates that the macroeconomic conditions in Indonesia improved.

In the context of the region, the total number of poor people in rural areas was relatively higher than in urban areas. The average percentage of poor people in rural areas during the years 1996-2005 was 68.4% relative to the number of poor people in Indonesia and the highest percentage occurred in 2001 (77.3%).

Table 4.1 Number and Percentage of Poor People, 1996-2013

Year	Number of Poor People (Million)			Percentage of Poor People		
	urban	rural	urban+rural	urban	rural	urban+rural
1996	9.42	24.59	34.01	13.39	19.78	17.47
1998	17.60	31.90	49.50	21.92	25.72	24.20
1999	15.64	32.33	47.97	19.41	26.03	23.43
2000	12.31	26.43	38.74	14.60	22.38	19.14
2001	8.60	29.27	37.87	9.79	24.84	18.41
2002	13.32	25.08	38.39	14.46	21.10	18.20
2003	12.26	25.08	37.34	13.57	20.23	17.42
2004	11.37	24.78	36.15	12.13	20.11	16.66
2005	12.40	22.70	35.10	11.68	19.98	15.97
2006	14.49	24.81	39.30	13.47	21.81	17.75
2007	13.56	23.61	37.17	12.52	20.37	16.58
2008	12.77	22.19	34.96	11.65	18.93	15.42
2009	11.91	20.62	32.53	10.72	17.35	14.15
2010	11.10	19.93	31.02	9.87	16.56	13.33
2011	10.95	18.94	29.89	9.09	15.59	12.36
2012	10.51	18.09	28.59	8.60	14.70	11.66
2013	10.63	17.92	28.55	8.52	14.42	11.47

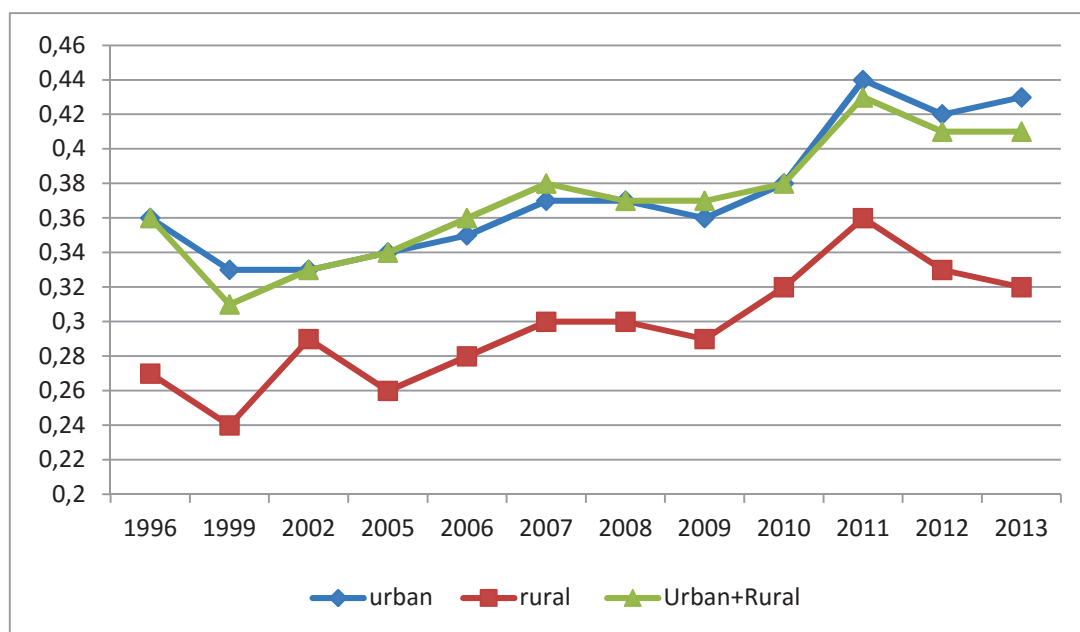
Source: Statistics Indonesia (2014)

Next, Figure 4.3 shows the Gini Ratio. In general, the numbers of the Gini ratio in the period 2002-2011 in Indonesia tended to increase. In the 2002-2007 period there was an increase from 0.33 in 2002 to 0.38 in 2007. The numbers of the Gini ratio indicate a change in the distribution of population expenses. The Gini ratio is also used to see whether the equitable distribution of the population expenses is better or worse. The increased numbers of the Gini ratio in the period 2002-2007 indicated that the distribution of the population expenses of the period got worse.

In 2008, the numbers of the Gini ratio decreased from the previous year. In the 2008-2009 period, there were no changes in the Gini ratio numbers which stood at 0.37.

Furthermore, in 2010 there was an increase in the numbers from the previous year which was at 0.38. The same condition occurred in 2011, the number increased to 0.43. If the Gini ratio numbers were reviewed based on the regional level, the level of population expenditure inequality in urban areas was relatively higher than that in the countryside.

Figure 4.3 Gini Ratio, 1996-2013



Source: Statistics Indonesia (2014)

Other indicators to look at the distribution of income between the population groups are the World Bank criteria. The World Bank Criteria divide the population groups into three major parts; 40% bottom, 40% intermediate and 20% top. Figures 4.4, 4.5 and 4.6 show the World Bank Criteria which indicate that the level of inequality of distribution of Indonesian population expenditures, both in urban and rural areas, is still relatively low because the proportion of the group expenses was 40% and the lowest one is still above 17 percent.

In general, most of the distribution of expenditure is spent by the 20% of people who are categorized as "top group". More specifically, most of the distribution expenditure in rural areas is spent by 40% of people who are categorized as "mid group". Meanwhile, in urban

areas, most of the distribution of expenditure is spent by the 20% of people who are categorized as "top group".

Figure 4.4 Distribution of Expenditure in Urban Areas, 1996-2013

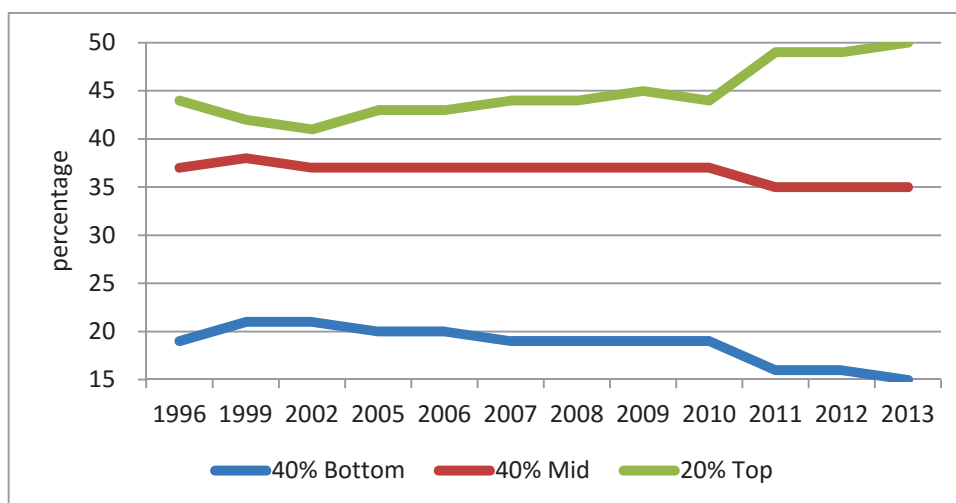


Figure 4.5 Distribution of Expenditure in Rural Areas, 1996-2013

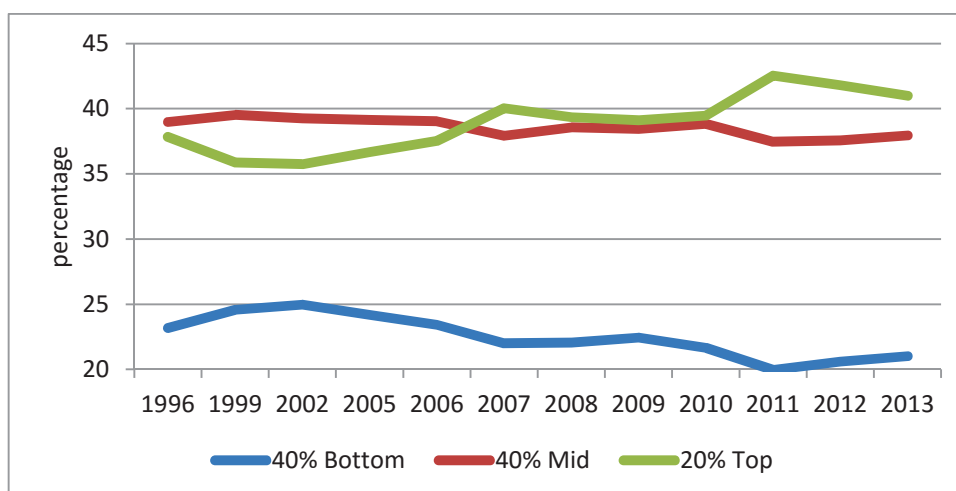
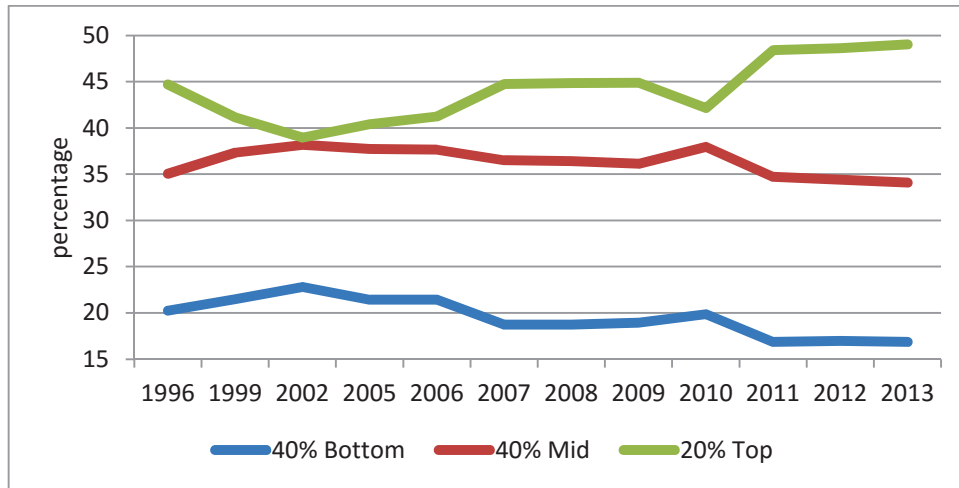


Figure 4.6 Distribution of Expenditure in Urban+Rural Areas 1996-2013



Source: Statistics Indonesia (2013)

KisKatos and Sparrow (2015) say poverty reduced especially in districts with a greater sector exposure to input tariff liberalization. Among the potential channels behind this effect, we show that low-skilled work participation and middle-skilled wages were more responsive to reductions in import tariffs on intermediate goods than to reductions in import tariffs on final outputs. These results point towards increasing firm competitiveness as a driving factor behind the beneficial poverty effects.

4.3 Methodology

4.3.1 Specification of Research Model

To analyze the relationship between trade liberalization and poverty in Indonesia, we refers to the model used by Liang (2007). Liang examined the relationship between trade liberalization and poverty in China by using a model that described the direct and indirect relations of trade on poverty. The first model is income equations:

$$\begin{aligned} \text{INCOME}_{i,t} = & \alpha_0 + \alpha_1 \text{INCOME}_{i,t-1} + \alpha_2 \text{INV}_{i,t} + \alpha_3 \text{OPEN}_{i,t} + \alpha_4 \text{NSOE}_{i,t} + \\ & \alpha_5 \text{INFRA}_{i,t} + \alpha_6 \text{D_URRU}_{i,t} + \alpha_7 \text{D_CRISIS}_t + \varepsilon_{i,t} \end{aligned} \quad (1)$$

where $\text{INCOME}_{i,t}$ is the real per capita income which was calculated as total real income (million) divided by the number of population of the province i in year t (million); $\text{GINI}_{i,t}$ is

the Gini coefficient in province i in year t ; POV_{it} is the poverty level which was calculated as the ratio of the number of poor to total population of the province i in year t ; $INCOME_{i,t-1}$ is the real per capita income which was calculated as total real income (million) divided by the number of population (million); INV_{it} is the level of investment which was calculated as a ratio of gross domestic fixed capital formation to gross regional domestic product (GRDP) of the province i in year t ; $OPEN_{it}$ is the degree of openness which was calculated as the ratio of the sum of exports and imports to gross regional domestic product (GRDP) of the province i in year t ; $NSOE_{it}$ is the non-government sector development, which was calculated as the ratio of workers in the non-government sector to total workers of the province i in year t ; $INFRA_{it}$ is road infrastructure development, the infrastructure development which was calculated as the ratio of road length in kilometers to the square kilometer area of the province i in year t .

Then the second model is the Gini equation:

$$\begin{aligned} GINI_{it} = & \beta_0 + \beta_1 INCOME_{it} + \beta_2 INCOME_{it}^2 + \beta_3 OPEN_{it} + \beta_4 NSOE_{it} + \\ & \beta_5 INFRA_{it} + \beta_6 D_URRU_{it} + \beta_7 D_CRISIS_t + \eta_{it} \end{aligned} \quad (2)$$

and the third model is the poverty equation:

$$\begin{aligned} POV_{it} = & \gamma_0 + \gamma_1 INCOME_{it} + \gamma_2 GINI_{it} + \gamma_3 OPEN_{it} + \gamma_4 PLINE_{it} + \\ & \gamma_5 NSOE_{it} + \gamma_6 INFRA_{it} + \gamma_7 D_URRU_{it} + \gamma_8 D_CRISIS_t + \zeta_{it} \end{aligned} \quad (3)$$

Where $PLINE_{it}$ is the poverty line in real terms of the province i in year t ; D_URRU is the model differentiator of villages and towns, where 1 is for the town and 0 is for village; D_CRISIS is the crisis model where 0 is for the pre-1997 crisis and 1 is for the post-crisis value 0 is 1; ε_{it} , η_{it} , ζ_{it} are the error terms. All variables were expressed in logarithmic form.

4.3.2 Panel Data Analysis Method

The data used in this study is panel data for 26 province in Indonesia from 2003 to 2012 (triennial data). All the data for the various variables are obtained from Central Bureau of Statistics for Indonesia (Statistics Indonesia)

Based on the purpose of this study which is to determine the impact of trade liberalization on poverty in Indonesia at the level of cities and villages, was used the panel data analysis method. This method has several advantages, as follows (Baltagi, 2001):

- a. Panel data can be used to control the heterogeneity in units of micro or data of various individuals. This is very important as the neglect of heterogeneity will impact the results of the bias estimation (main characteristics).
- b. Panel data produce more diversity through a combination of the variation of micro units (n) and the variation of time (t). This condition is sufficient to increase the likelihood of multicollinearity, but on the other hand, with increasingly informative data, there is higher likelihood that the estimation will be more efficient.
- c. Panel data can be used to resolve a topic that cannot be addressed in time-series or cross-section study.

Panel data can be used in testing the behavior of more complex models and raise the issue of dynamic analysis. There are three ways to estimate panel data. The first is OLS, the second approach is the *fixed effect model* (FEM) while the third approach is the *random effect model* (REM).

OLS is used if there are unobserved / individual effects so that the constant intercept and slope is only classical assumptions that must be met (non-autocorrelation, homoscedastic and non-multicollinearity). Meanwhile, if there are unobserved / individual effects correlating

with other regressors, the FEM method is used to eliminate that effect and if the unobserved / individual effects correlate with the error term, REM method could be used to eliminate them.

4.3.3 Selecting the Method of Estimation

4.3.3.1 Pra Estimate

Before selecting the method of estimation, the multicollinearity test between the variables used is performed. Multicollinearity occurs when an independent variable has a high linear correlation, so that it will have an impact on

- the difficulties in interpreting the estimator value of regression coefficients. This is because a change in a variable will also cause a change in the variable partner due to the high correlation.
- The distribution of the regression parameters becomes very sensitive to the correlation between the independent variable and the standard error of regression. This condition appears in the form of the variance and standard error parameters which are high and have an impact on the value of the t statistic that becomes smaller so that the independent variables become the insignificant influence. The further influence is that the generated regression coefficient does not reflect the value where most coefficients actually tend to over-estimate and the others underestimate.

Several ways can be used to identify the presence or the absence of multicollinearity in generated regression models; (i) if the regression results indicate a high R^2 value and significantly F statistic (goodness of fit is met) but largely independent variables did not significantly influence (t small), (ii) there is a high correlation ($r > 0.8$) between one or more pairs of independent variables in the model. In addressing the problem of multicollinearity that occurs in the regression model, the steps that can be taken are to throw a variable of pairs

of variables that experience multicollinearity, to change the model form or to add data (Gujarati, 2003).

4.3.3.2 Selecting The Estimation Methods

Selection of panel data estimation methods, whether it is common effect, FEM or REM, can be done theoretically. According to Pindyck and Rubinfeld (2000), if the impact of interference is assumed to be random, then a random effects model is selected. In contrast, if the impact of interference is assumed to have a permanent effect (considered to be part of the intercept), the estimation of fixed effects method is chosen. If theoretically the impact and disruption cannot be determined, then the fixed effects method is used when the data used includes all individuals in the population or only include a few individuals, but not taken at random. In contrast, if the data used come from individuals taken from random sampling from a larger population, then random effect estimation method is used. The steps in identifying the model in this study are (i) performing least pooled squares regression and random effect regression; (ii) selecting an estimation method that begins with the selection of a common effect model (*Pooled Least Square*) or individual effect model with Breusch and Pagan Lagrangian multiplier; (iii) performing the fixed effect model regression; (iv) conducting the Hausman test to determine the most appropriate model among the fixed effect or random effect; (v) after the best method is selected, the prediction of value of a variable of INCOME and GINI is done and the prediction value is then put into the equation of POV; (vi) in addition, various regressions are done by using OLS and 2SLS method for the combined data of towns and villages regression by using the model distinguishing towns and villages (26 and 51 individuals).

4.4 Results and Discussions

4.4.1 Regression Selection

Having done several regressions as described in the preceding discussion, the selection of the best methods is carried out. The best regression method chosen is the combined data of towns and villages regression by using the model distinguishing towns and villages, using the method described previously. The selection is based on the results of the regression of the variations which has been done; looking at the significance of the independent variables of the regression results and R² values of the regression.

4.4.2 The Results of Multicollinearity Test

To see whether there is a multicollinearity problem, the Correlation Matrix is used by observing if there is a correlation coefficient between the two regressors with a value greater than 0.8. Based on the test results that can be seen in Table 4.2, it appears that there is no correlation value which is greater than 0.8 or all below 0.8 so it is concluded that there is no multicollinearity problem.

Table 4.2 Matrix of Correlation between Variables

	POV	INCOME	GINI	OPEN	NSOE	INFRA	INV	PLINE
POV	1							
INCOME	-0.456	1						
GINI	-0.195	0.433	1					
OPEN	-0.085	0.258	0.145	1				
NSOE	0.033	-0.191	-0.081	0.245	1			
INFRA	-0.145	-0.154	0.292	0.004	0.311	1		
INV	-0.293	0.316	0.205	0.522	0.488	0.243	1	
PLINE	-0.132	0.263	0.096	0.074	-0.409	-0.012	-0.051	1

Source: Author's calculation

4.4.3 Model Selection Test

The model in this study was tested using the Breusch and Pagan Lagrangian multiplier test and the Hausman test. The Breusch and Pagan Lagrangian multiplier test is done to

determine the presence or absence of the influence of the individual effects in the model, while the Hausman Test chooses the best model among the fixed effect model (FEM) or random effect model (REM).

4.4.3.1 The Equation of INCOME

4.4.3.1.1. Breusch and Pagan Lagrangian Multiplier (LM) test for random effects

The Breusch and Pagan Lagrangian Multiplier test results showed that the value of $\text{Prob} > \chi^2 = 0.000$ which means that the H_0 hypothesis is rejected in which the model refused the *pooled least squares*, meaning that the study was not able to use the pooled least square (see Table 4.3).

4.4.3.1.2 Hausman Test Results

Having been known that the individual effects are in the model, the Hausman test is performed. Based on Table 4.3, the method used is fixed effect.

Table 4.3 Test results LM and Hausman Test for Equation of Income

No	Assessment	Test	Results	Conclusions
1	Pooled vs Random Effect	LM test	$\text{Prob} > \chi^2 = 0.000$	Reject H_0 ; Random Effect
2	Fixed Effect vs Random Effect	Hausman Test	$\text{Prob} > \chi^2 = 0.0017$	Reject H_0 ; Fixed Effect

Source: Author's calculation

4.4.3.2 The Equation of GINI

4.4.3.2.1 Breusch and Pagan Lagrangian multiplier test for random effects

The Breusch and Pagan Lagrangian multiplier test results showed that the value of $\text{Prob} > \chi^2 = 0.000$ which means that the H_0 hypothesis is rejected in which the model

refused the *pooled least squares*, meaning that the study was not able to use the pooled least square (see Table 4.4).

4.4.3.2.2 Hausman Test Results

Having been known that the individual effects are in the model, the Hausman test is performed. Based on Table 4.4 the method used is random effect.

Table 4.4 Test results LM and Hausman Test for the Equation of GINI

No	Assessment	Test	Results	Conclusions
1	Pooled vs Random Effect	LM test	Prob > Chi2 = 0.000	Reject H ₀ ; Random Effect
2	Fixed Effect vs Random Effect	Hausman Test	Prob > Chi2 = 0.118	Not Reject H ₀ ; Random Effect

Source: Author's calculation

4.4.3.3 The Equation of POVERTY

4.4.3.3.1 Breusch and Pagan Lagrangian multiplier test for random effects

The Breusch and Pagan Lagrangian multiplier test results showed that the value of Prob > chi2 = 0.000 which means that the H₀ hypothesis is rejected in which the model refused the *pooled least squares*, meaning that the study was not able to use the pooled least square (see Table 4.5).

4.4.3.1.2 Hausman Test Results

Having been known that the individual effects are in the model, the Hausman test is performed. Based on Table 4.5, the method used is random effect.

Table 4.5 Test results LM and Hausman Test for Equation of POVERTY

No	Assessment	Test	Results	Conclusions
1	Pooled vs Random Effect	LM test	Prob > Chi2 = 0.000	Reject H ₀ ; Random Effect
2	Fixed Effect vs Random Effect	Hausman Test	Prob > Chi2 = 0.661	Not Reject H ₀ ; Random Effect

Source: Author's calculation

4.4.4 Analysis

4.4.4.1. Income Regression

4.4.4.1.1. Results Interpretation of Income Regression

The results of the model selection showed that the best method to perform income regression was the fixed effect method. The fixed effect regression results for income equation can be seen in Table 4.6. The regression results can be interpreted as follows: the income1 variable positively and significantly affected income. Each 1% increase in income would increase the average income by 0.982%, *ceteris paribus*; the Inv variable positively and significantly affected income. Each 1% increase in the inv variable would increase the average income by an average of 0.102%, *ceteris paribus*.

The open variable positively and significantly affected income. Each 1% increase in the open variable would increase the average income by 0.06%, *ceteris paribus*; the nsoe variable positively and significantly affected income. Each 1% increase in the nsoe variable would increase the average income by 0.231%, *ceteris paribus*. The Infra variable positively affected income but not significantly; the urru variable positively and significantly affected income. The average income in the cities was higher by 6.66% than that of the villages, *ceteris paribus*; the dkris variable negatively affected the income but not significantly.

Table 4.6 Regression of Income Equation by Using Fixed Effect Method

	Coeff.	t statistics
INCOME1	0.982	69.63***
INV	0.102	8.44***
OPEN	0.060	2.02**
NSOE	0.231	5.54***
INFRA	0.026	1.29
D_URRU	0.028	2.97***
D_KRIS	-0.005	-1.20
CONS	-0.481	-3.85***
Observations		204
Number of Groups		26
Prob > F		0.000
R ² :		
Within		0.992
Between		0.954
Overall		0.971

Source: Author's calculation

Asterisks indicate statistical significance: * Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.

In general, the income decreased by 0.482% over the 1996-2005, *ceteris paribus*; the F-test results showed that the province samples had significant effects.

4.4.4.1.2. The Analysis of Income Regression Results

Trade liberalization can affect poverty by first affecting economic growth. In some of the published literature, the relationship between trade, growth and poverty involves two important issues that have been debated for more than 10 years (Liang 2007), which are whether trade is good for growth and whether growth is good for the poor.

Regarding the *trade-growth linkage*, several previous studies concluded that trade is one of the important driving engines for long-term economic growth (Dollar, 1992 ; Dollar

and Kraay, 2004, Frankel and Romer, 1999). However, the result of this study also received criticism (Rodriguez and Rodrik, 1999). There was also evidence that *the trade-growth link* cannot be confirmed or warranted and generalized to have the relationship that is always positive (Nissanke and Thorbecke, 2005). The results of regression analysis showed that growth represented by the growth of income per capita in Indonesia is significantly influenced by the previous year's per capita income, investment, the degree of openness and the ratio of the number of workers in the non-governmental sector.

The previous year's per capita income growth affects per capita income growth this year, where a 1% increase in per capita income growth in the previous year would increase the per capita income growth this year by 0.98%. The previous year's per capita income growth will increase the consumption and in accordance with the theory of the multiplier effect (Blanchard and Giavazzi, 2002), the increase in consumption will ultimately increase production and income. Investment is an important instrument for growth. Increased investment will also increase output and in turn will also improve growth. The degree of openness increases growth. The open coefficient is positive and significant at the 5% level. This shows that trade is still the main engine behind growth in Indonesia. This finding is consistent with the result obtained by Liang (2006) and in accordance with the theory of the *trade-growth linkage* (Dollar, 1992 ; Dollar and Kraay, 2004, Frankel and Romer, 1999).

The ratio of the number of workers in the non-governmental sector positively and significantly affected growth. An increasing number of workers in the non-governmental sector occurs as a result of economic growth with the creation of job vacancies by the private sector or by independent business improvements and the community (without government interference).

Judging by the magnitude of the coefficient of regression results which can also be interpreted as elasticity in Table 4.6, the income elasticity on the openness is relatively more

inelastic than the income elasticity on the *inv* and *nsoe*. This suggests that in Indonesia, the income elasticity against openness is relatively low (inelastic), so even though it is a source of growth, the role of trade openness is relatively not too big. The average growth in the cities in Indonesia is bigger than that in the villages, as shown by the *uRRu* coefficient which is positive and significant. The higher growth in the city than that in the village is possible because of the better characteristics of the cities in terms of the smooth mobility of goods and services, the concentration of economic activities in urban areas due to the much better facilities available, and due to the demographic conditions in which the economic activities would tend to be concentrated where the better quality of human resources is available. In Indonesia this happens in urban areas.

4.4.4.2. The Gini Regression

4.4.4.2.1. Results Interpretation of Gini Regression

The results of the model selection showed that the best method to perform income regression was the random effect method. The random effect regression results for income equation can be seen in Table 4.7.

Table 4.7 Regression of Gini Equation by Using Random Effect Method

	Coeff.	t statistics
INCOME1	0.274	0.95
INCOMESQ2	-0.020	-0.94
OPEN	0.024	0.95
NSOE	0.157	3.10***
INFRA	0.023	2.19**
D_URRU	0.084	7.02***
D_KRIS	0.016	2.54**
CONS	-1.522	-1.55
Observations		204
Number of Groups		26
Prob > Chi2		0.000
R ² :		
Within		0.5224
Between		0.3461
Overall		0.4599

Source: Author's calculation

Asterisks indicate statistical significance: * Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.

The regression results can be interpreted as follows: the incomep1 variable positively and significantly affected Gini. The incomepsq1 variable negatively but not significantly affected Gini. The open variable positively but not significantly affected Gini.

The nsOE variable positively and significantly affected Gini. Each 1% increase in nsOE would increase the average Gini by 0.982%, *ceteris paribus*; the infra variable positively and significantly affected Gini. Each 1% increase in the infra variable would increase the Gini by an average of 0.102%, *ceteris paribus*.

The urru variable positively and significantly affected Gini. Each 1% increase in the open variable would increase the average income by 0.06%, *ceteris paribus*; the nsOE variable

positively and significantly affected income. Each 1% increase in the *nsoe* variable would increase the average income by 0.231%, *ceteris paribus*. The *urru* variable positively affected Gini and significantly; the Gini average in cities is higher by 21.34% than that of the villages, *ceteris paribus*. The *dkris* variable positively and significantly affected income. The average Gini after the crisis years 1997-1998 was higher by 3.75% from the pre-crisis, *ceteris paribus*.

The fixed effect regression method shows the results of the F-test for the significance of the effects of the province. The results of the F-test was $F(25, 171) = 18.04$ and statistically significant. This means that the provincial dummy jointly had a significant effect. This means that the use of the model by OLS will experience the effects of omission of variables so that the results are biased and inconsistent.

4.4.4.2.2. *The Results of Analysis of Gini Regression*

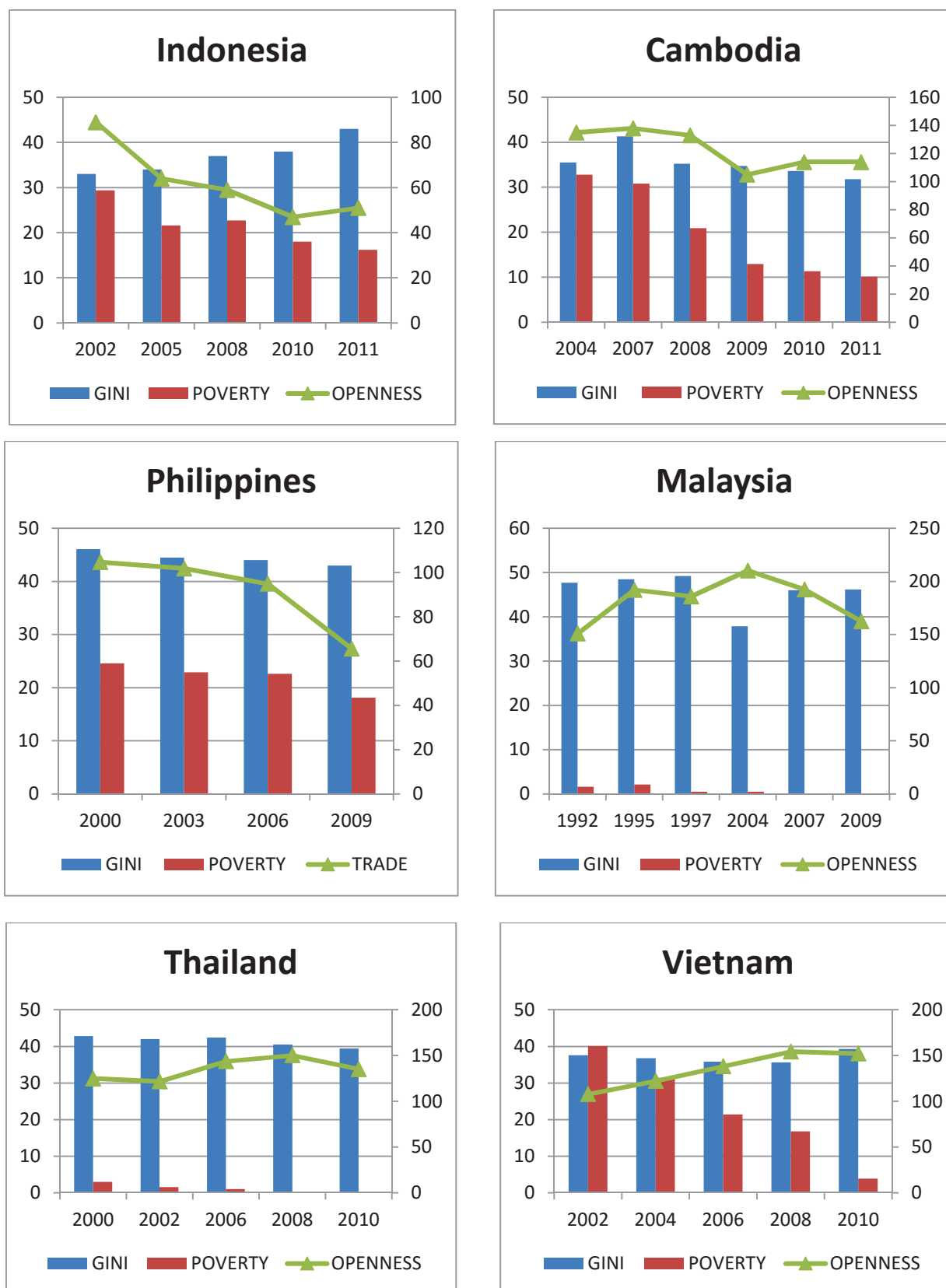
Trade liberalization may also affect poverty indirectly through the effect on income inequality. To examine the relationship between trade-inequality-poverty, there are two important relationships that must be reviewed, namely the effect of trade on income inequality and the effect of changes in inequality on poverty.

In relation to *trade-inequality linkage*, the traditional trade theory predicts that trade openness will increase the relative demand for non-skilled labor in developing countries, which will ultimately lower the wages of the skilled labor relative to non-skilled labor, thereby decreasing inequality (Liang, 2007). The impact of international trade on labor markets in developed countries will be different according to the degree of competition in product markets, the flexibility of the labor and the skill intensity of production (Bazen and Cardebat, J.M., 2001).

However, the inter-country studies indicate that the effect of trade on inequality varied significantly among the developing countries, and the actual effect will depend on national

policies (Wood, 1994 ; Hansons and Harison, 1999). The Gini equation regression results indicate that a variable which significantly affects the level of inequality in Indonesia is the ratio of the number of workers in the non-governmental sector to the total number of workers and the infrastructures, while the degree of trade openness and growth is not significantly associated with inequality. Trade openness in Indonesia does not affect inequality. It is in line with the research from Wood (1994) and the Hansons and Harison (1999). Meanwhile, Cardebat, J.M. (2002) argues that the direct link between openness and development is more ambiguous, as trade can be associated with a reduction in GDP per head.

Figure 4.7 GINI, poverty and Inequality in Some South-East Countries



Source: World Bank (2015)

According to the figures comparing some countries in Southeast Asia, openness, poverty and inequality had particularly different effects. This is also in accordance with several recent cross-country studies showing that the effects of trade on inequality vary significantly among developing countries and that the real impacts depend crucially on national policies (Wood, 1994; Feenstra and Hanson, 1997 ; Hanson and Harrison, 1999 ; Robbins and Gindling, 1999).

The impact of trade openness in Indonesia may still depend on national policies, where in fact more open trade is not able to redistribute income between skilled labor and non-skilled labor nor minimize the existing gap. It also indicates that based on this research, the *equalization factor theorem* and Stolper Samuelson is not applicable in Indonesia.

Better infrastructures, in fact, increase the level of inequality in Indonesia. The infrastructure in this study is the ratio between the length of the road and the number of regions. The better the construction of roads in an area is, the higher the increase in inequality in the region will be. This is possible because the development of infrastructures in Indonesia is only beneficial for some people, those who have higher incomes. However, the poor people cannot use the development of transportation, so in the end, the gap between the rich and the poor becomes even higher.

The ratio of the number of workers in the non-governmental sector has positive and significant effects. This shows that the higher the number of workers is in the non-government sector, the more it tends to increase inequality in Indonesia. This can happen because an increase in the percentage of workers in the non-government sector only is significantly caused by the increasing number of non-skilled labor which is greater than the number of the skilled labor, which in turn will only increase the income gap.

The income variable and income² in this study showed no significant relationship to the Gini. This suggests that in Indonesia, the Kuznets hypothesis is not proven, although the direction / sign of the coefficient is in accordance with the Kuznets hypothesis. Inequality in cities is relatively larger than that in villages, as shown by the urru coefficient on the Gini regression. The urban area has a special character, which is spatial mismatch, where there is the existence of a mismatch between the number and the characteristics of workers with the available jobs. In the city, usually a demand for skilled labor is greater, so a lot of poor people in the city are not able to get the expected jobs. Coupled with the high urbanization trend in the city with the hope that the city offers a better life, the fact not complying with the hope creates larger low-income groups, which also causes the higher inequality in the city.

The crisis in Indonesia in 1997 proved to increase income inequality. Employment elasticity tends to decrease dramatically after a crisis, which causes high unemployment resulting from the higher per capita income after the crisis.

4.4.4.3. Poverty Regression

4.4.4.3.1. Results Interpretation of Poverty Regression

The results of the model selection showed that the best method to perform poverty regression was the random effect method. The random effect regression results for income equation can be seen in Table 4.8.

Table 4.8 Regression of Poverty Equation by Using Random Effect Method

	Coeff.	t statistics
INCOME1	0.048	0.70
GINI2	9.549	2.18**
OPEN	-0.356	-2.33**
PLINE	0.429	4.72***
NSOE	-0.850	-1.25
INFRA	-0.307	-2.72***
D_URRU	-1.061	-2.83***
D_KRIS	-0.347	-4.12***
CONS	2.583	0.93
Observations		204
Number of Groups		26
Prob > F		0.000
R ² :		
Within		0.448
Between		0.116
Overall		0.124

Source: Author's calculation

Asterisks indicate statistical significance: * Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level

The regression results can be interpreted as follows: the income1 variable positively and significantly affected poverty. The gini2 variable positively and significantly affected poverty. Each 1% increase in gini2 would increase average poverty by 0.982%, *ceteris paribus*.

The open variable negatively and significantly affected poverty. Each 1% increase in the open variable would reduce poverty by an average of 0.102%, *ceteris paribus*; the nsoe variable negatively but not significantly affected poverty. The infra variable significantly but negatively affected poverty. Each 1% increase in the infra variable would reduce the average

poverty by 0.30% . The *urru* variable significantly but negatively affected poverty. Poverty in the city is on average lower by 854% or 1/8 times lower than in the village, *ceteris paribus*. The *dkris* variable significantly and negatively affected poverty. The poverty average after the crisis was lower by 113.79% compared to before the crisis, *ceteris paribus*.

4.4.4.3.2. The Analysis of Poverty Regression Results

The poverty equation model directly examines the relationship between trade and poverty. Poverty is directly expected to be influenced by growth, inequality, the degree of openness, the poverty line, the ratio of the number of workers in the public sector to total workers and infrastructures.

Regarding the relationship between growth and poverty, many studies have shown that, in the long term, growth can be an important instrument in reducing poverty (World Bank, 2002 ; Dollar, 2005). In this growth and poverty study, Dollar and Kraay (2002) show that the growth of income of the lowest quintile increases proportionally with the growth of the average income, so that poor people have benefited from the growth more than the average community. However, there is also evidence that suggests that the achievement of poverty reduction that can be generated by economic growth depends on the initial level of inequality and how income distribution changes over time (World Bank, 2001).

Based on the results of the study, growth did not significantly affect poverty in Indonesia. It is because there was no clear relationship between development and poverty in the country. Economic growth would have an impact on poverty if there had been a change in income distribution. This was also explained by an indirect relationship between growth and inequality on poverty through the Gini regression, where there was no significant relationship between growth and inequality, while there was a significant relationship between inequality and poverty.

The Gini variable positively affected the growth rate of poverty in Indonesia. A 1% increase in inequality would increase the percentage of poor people by 9% (percentage change), *ceteris paribus*. This suggests that in Indonesia, income distribution is an important element in poverty alleviation.

Trade openness in Indonesia had negative and significant impacts on poverty levels. The increased openness of 1% would reduce the poverty rate by 0.38%, *ceteris paribus*. This case showed that the direct anti-poverty effect happened in Indonesia. In accordance with the definition of poverty from Statistics Indonesia (2014), the poor are defined as people who do not have the ability to fulfill their basic needs that is measured as the poverty line, which means the limits of poor and non-poor is the size of the poverty line.

Based on the regression results, liberalization of trade in Indonesia has proven to be able to lift the majority of the poor above the poverty line through creating the job vacancies due to the trade relations, for example through the export of agricultural products and handicrafts. But trade is not able to reduce income inequality in Indonesia, which means that although poverty declined, the income gap between rich and poor does not necessarily decline. Although trade liberalization has proven to reduce poverty, it does not mean that Indonesia has to liberalize trade freely. Because based on the descriptive statistical analysis as described above, if the non-linear pattern between openness and poverty rate is formed, the U-shaped curve would be obtained. This means that in the early stages of trade liberalization, the poverty level tends to improve, but at a later stage, the level of poverty will only get worse.

The relationship between the poverty line (PL) and the poverty rate is positive and significant. A 1% increase of the poverty line will increase the poor people's percentage by 0.47% (percentage change), *ceteris paribus*. The increased poverty line means an increased poverty standard. The higher standards set by Statistics Indonesia are, the higher the number of people who are not able to go beyond the poverty line will be. This suggests that in

Indonesia, the change of standards of living needs increases faster than the increase in the public's ability to meet the standards of their living needs. The poverty line is calculated based on the average food and non-food expenditure per capita in the reference group that has been set. The reference group is defined as a marginal class population, i.e. those whose lives were categorized as marginal class population, i.e. those whose lives are considered to be slightly above the poverty line. The improved poverty line means increasing average expenditures of the reference group, which was not accompanied by an increase in the welfare of people living near the poverty line, so there are groups interested in getting into the area below the poverty line.

The ratio of the number of workers in the non-government sector did not significantly affect the level of poverty. There was no direct relationship between the ratio of the number of workers in the non-government sector, not with the level of poverty in Indonesia although indirectly the ratio of the number of workers in the non-government sector significantly affected inequality. This is also in accordance with the result of Liang's study (2007).

The infrastructure negatively and significantly affected poverty levels. Any 1% increase in infrastructure growth would decrease the percentage of poverty by 0,3%, *ceteris paribus*. Infrastructure development will create job vacancies that can lift the population from the lowest poverty line. Good infrastructures also create new job opportunities in the transportation sector, which in turn will also help reduce poverty.

The poverty level in the city grew relatively lower than that in the village. This was illustrated from the urru coefficient value which was negative and significantly affected the changes in the poverty line. This suggests that rural areas are more vulnerable to growth or increased poverty levels. The special feature of the rural area is the production activities carried out, where the majority of the rural population in Indonesia works as farmers. Economic theory explains that the amount of production is determined by the factors of

production used (Krugman and Obstfeld, 2006). There are two important factors of production as the inputs, namely capital and labor the ability of the production factor of the poor rural labor force was very low. Thus, the accumulation of physical capital (capital) should play an important role. However, in the absence of assets on the capitalization and productive assets, the capital accumulation could not be done. The result was the low level of productivity from time to time. This low productivity exacerbated the poverty rate in rural areas.

The crisis model variable showed that the percentage of poor people after the crisis tended to decline. This was possible to, determine because of the research data in 2002 and 2005, where those years were long enough from the onset of the crisis. After the crisis of 1997, many studies showed that small and medium businesses, in fact, survived and many more emerged. The economic crisis in 1997 had `forced most poor people to try harder to survive and get out of the lowest limit of the poverty line. In addition, study of the post-crisis showed it was also a period in which reform occurred. It was thought that the reforms would bring a change in the form of an increase of people's welfare through a variety of opportunities that were more fair and open in economic activities.

4.5 Conclusions

The main objective of this study is to figure out the relationship between trade liberalization and poverty in Indonesia using panel data of the urban-rural area provinces. After testing and analysis of the relationship between trade liberalization and poverty in Indonesia, it can be concluded that trade liberalization has a negative impact directly against poverty where trade liberalization may reduce the level of poverty. This means that the more open economy will reduce the level of poverty.

As for the indirect effect, trade liberalization does not show any significant correlation with the level of poverty. Although trade liberalization has proven to increase per capita income growth, growth of per capita income alone does not significantly affect the level of poverty. As well as with inequality distribution, trade liberalization does not show any significant correlation with inequality in Indonesia, even though inequality is reported to affect poverty.

In addition, the evidence regarding the general difference between growth characters, inequality and poverty in urban and rural areas in Indonesia were obtained. In general, growth and inequality in the city is higher than that in the village, while the level of poverty in the city tends to be lower than that in the village. Other variables that significantly influence the changes in the level of poverty in Indonesia were the changes of inequality levels, changes in the poverty line, and infrastructure development.

The elasticity of poverty to openness was relatively low. It can be used as a starting point for the government to be able to develop the trade sector that is able to reduce the level of poverty in Indonesia. However, it should be noted that this does not mean opening or liberalizing trade as widely as possible. The degree of openness in Indonesia had not shown a clear relationship with inequality. Trade policy should also be able to consider the whole community's income distribution.

The government needs to pay special attention to poor people in rural areas to increase economic growth and alleviate poverty. As for urban areas, there is the growth issue that is relatively higher than that in villages and inequality, which also tends to be higher than that in villages, needs to be observed, because growth alone is not enough to achieve prosperity. Inequalities, in the end, will create social jealousy. In addition, Indonesia's increased openness to international trade must be accompanied by the efforts to improve the infrastructures that are beneficial to the poor in creating better new job vacancies or better business opportunities.

GENERAL CONCLUSION

Indonesia is one of the founding members of the WTO, the multilateral trade arrangement established in 1995. Indonesia was also a member of WTO's predecessor, the GATT, since 1950. Indonesia has been actively engaged in regional and bilateral free trade agreements since 1992. These trade agreements opened up Indonesia's economy to the many benefits of trade liberalization, ranging from greater market access for its products and availability of diverse high quality products to the intangible benefits of greater competition and efficient allocation of resources.

The aim of this thesis was to investigate the economic impact of free trade agreements and the trade liberalization attempted in Indonesia with other trading partner countries. The economic issues explored in this study start from how exports and imports affect the implementation of liberalization, then the fiscal sector – namely, the state revenue in the aspects of international trade, such as import duty – and. This thesis also investigates the effect of trade liberalization on the economic of Indonesia, namely with regard to poverty. Various conceptual frameworks that test theories on the effects of trade liberalization in Indonesia serve to answer an important question in this study: How does trade liberalization affect the performance of export-import in Indonesia? Does liberalization affect fiscal revenue, in this case the receipts of import duties? Finally, how does trade liberalization affect poverty in Indonesia?.

Chapter 2 investigates how export and import trade are affected by liberalization, starting with the export and import function. It aims to determine the main empirical factors of imports and exports in Indonesia, which is one of the developing countries that are participating in cooperation agreements for free trade. Import and export functions are then added to the liberalization factors to determine the impact of liberalization on export and import activities in Indonesia in both the short and long terms. We find that world income, relative price, and export taxes affect the volume of exports in the long term, while import volume is affected by relative price, domestic income, and import duties in the long term.

Thus, a long-term equilibrium relationship can be established between the variables for research purposes.

For exports, our investigations provided results that were similar to the results for the volume of imports. This is because the demand for Indonesian exports is largely dependent upon the income of the world, rather than the relative price of exports. Additionally, long-term income elasticity showed a very high value compared with short-term income elasticity of demand for exports. This indicates the greater impact of income in the long term than in the short term. The impact of changes in Indonesia's GDP on import seems to obscure the impact of changes in world GDP on exports in the short term, raising concern for the trade balance in the short term. The high coefficient of elasticity of world GDP indicates the importance of considering the economic growth of Indonesia's major trading partner countries. This relates to factors such as demand for Indonesia's goods exports. The decline in the performance of the world economy, especially Indonesian trading partners, is likely to affect export performance.

Regarding imports, our investigations showed that for the volume of imports is largely dependent on Indonesia's GDP. If there is an increase in the GDP of Indonesia, Indonesian imports also tend to significantly increase. Domestic short-term income elasticity is much greater than domestic long-term income elasticity. This means that changes in income have potentially simultaneous effects on import change. Relative prices have little effect on imports. Significant price elasticity in the short term does not seem too significant in the long term. The results showed that prices have little effect on imports, illustrating the pattern of imports in Indonesia.

Relative prices do not affect exports in the short term, because in practice, export activities are activities that are tied to the employment contract. If there had been an agreement between exporters and importers, the price would have no effect in the short term. Adjustments to price changes also cannot be immediately carried out by the exporter or

producer because exporters cannot easily turn the use of the factors of production into inputs for the production process.

Without having an effect on export prices, relative price affects imports in the short-term. An increase in prices affects the growth of imports. In contrast to exporters, importers easily switch between inputs or factors of production if the price of imported goods is expensive. Nevertheless, the influence of relative prices in the short term as well as long-term is inelastic. This is because Indonesia has the largest proportion of imported raw material imports.

The impact of trade liberalization on exports and imports in Indonesia was also investigated using the export taxes, duties, and liberalization dummy variables. For the export tax in the long run, it was found that the effects of export taxes have a significant impact on, and are negatively correlated with, the volume of exports. There is an inelastic effect of export duty on exports, because only certain items are taxed exports, such as timber, palm oil, and coal. The influence of export tax on exports being non-elastic can also be attributed to the fact that export tax is an instrument of trade policy which usually has short-term goals. In other words, in the long term, the effect is not elastic. The imposition of export tax on CPO prices in Indonesia is relatively cheaper, and the number of exports declines when exporters reduce the amount exported for sale in the country. On the one hand, the Indonesian export tax leads to benefits for Indonesia, but on the other hand, it also leads to the percentage of export tax on Indonesian exports to fall.

Just like export duties, import duties also influence inelastic imports. Import duty in the short term is negatively related to imports. In free trade countries, imported goods are not comparatively superior. Reduction of import duty in the current period and the previous quarter will increase the volume of imports in the current period. If duty is higher than the coefficient of export taxes in the short-term, the change in customs duties will be more

influential than import tax in causing fluctuations in the volume growth of exports and imports.

Liberalization policies have a positive and significant impact on imports in the short term. This is consistent with the hypothesis that the presence of liberalization will increase the volume of imports. Liberalization policies that reduce trade distortions in the direction of free trade with the elimination of tariffs and non-tariff will affect export-import. Our investigation also found that the speed of adjustment of the export equation is less than that of the import equation. This means that the adjustment of export back to equilibrium occurs more slowly than imports. Thus, imports more quickly return to equilibrium than exports.

In both exports and imports, in the short term, inaction (lag) is very influential. In exports, the exports of the previous quarters affect export quarterly growth. Imports from four previous quarters affect current quarterly imports. This is more realistic in the sense that exports and imports require adjustments to differences arising between the number of requests in the current quarter and the previous quarter. By doing so, exports and imports make partial adjustments to such differences.

Chapter 3 discusses the topic of import duty revenue in the fiscal sector in the field of international trade. This Chapter also investigates the variables that affect the implementation of import duty when free trade policies are involved. We start with a model that has only one independent variable, followed by a model with three independent variables and two dummy variables. In order to determine the best model, testing is done to obtain a good equation and avoid error in model specification. Testing to select the best model is done by using the Ramsey RESET test, Akaike Information Criterion (AIC) test, and Bayesian Information Criterion (BIC) test to determine whether any variable is omitted. These variables are imports, exchange rates, and tariffs. In order to investigate the impact of the trade liberalization study, the variable of free trade is also added, and finally, because Indonesia went through an economic crisis, the economic crisis variable is added.

The results of the investigation of best models indicates that the biggest factors affecting the acceptance of duties in the implementation of trade liberalization in Indonesia. In the long-run, the variable of exchange rate, followed by import, and the amount of tariffs. Besides in the short-run, the variables influence the import duty revenue are value of import, followed by the exchange rate, and finally, the amount of tariffs. While liberalization and crisis factors have a negative influence on reception duties, the value of imports, tariffs, and the exchange rate have a positive correlation with reception duties.

In the short-run, the factors of import value are the largest contributor to import duties. Import values submitted by importers are based on the principle of self-professed assessment in Indonesia. The import values studied in this study include the value of inelasticity. This is because of government policies which provide exemption and reduction of import duty for import duty facilities (e.g. bonded areas) and for customs facilities in order to facilitate easy import to export in the form of exemption and suspension of payment of customs duties.

The growing practice of under-invoicing is an unhealthy practice that may cause the value of imports to be reduced and may result in reception duties. The professionalism of the officers involved in international trade – in this case, the customs officers – in checking the research import documents submitted by importers becomes indispensable to test the value of imports, which will be the basis for calculating import duty. Additionally, post-clearance audit activities in the field of customs are required to maintain the integrity and validity of the import value reported by international trading services when conducting business activities.

Factors of exchange rate had a positive correlation with reception duties. The rupiah currency weakened against the US dollar, and the import duty revenue increased. This empirical finding is in line with the theory of international trade. The increase in the exchange rate was able to stimulate a high level of export activity, thereby reducing the deficit of all countries (increasing the surplus) from time to time. Factors of tariff average have a particularly positive correlation with reception duties. The impact of liberalization on some

tariff reduction in import duty has consequences for the decline in revenues in the fiscal sector, specifically customs duties.

The purpose of the harmonization of import tariff programs is essentially to encourage greater efficiency and competitiveness in the domestic industry, which benefits all industry sectors; creates certainty for investors; and, with the rapid globalization of the economy (AFTA, APEC, and the WTO), improves the efficiency of customs administration and assists in the prevention of smuggling. The Program Harmonization of Customs Tariff gradually takes into account the level of competitiveness of national products, providing legal certainty for investors, providing protection for consumers, and improving the efficiency of the customs administration.

The trade liberalization factors in the model studied in Chapter 3 produced negative results. This means that trade liberalization has a negative influence on the acceptance of international trade duties. Several studies conducted by world institutions argue that the effects of trade liberalization on international tax revenues are ambiguous and dependent on many factors such as the elasticity of GDP with regard to the acceptance of import duty revenue.

The results of this study show that the policies of trade liberalization can still increase the volume of imports, because the import activities provide a stimulus for investment activities as well as export activities. The policies of liberalization of trade across regions and bilateral agreements between the regions' governments also have an impact on the increase in imports. Incentives like tariff reduction, where the trade tax is reduced but the volume and value of imports are increased, have a positive influence on reception duty. The economic crisis factor does not seem to significantly affect international tax revenue in the form of import duties.

Export and import activities are one of the determinants of the economic growth of a nation. Economic growth will certainly have an impact on the economic conditions of the country's population. Conditions of poverty and inequality in a country can also be influenced by the openness of its economy. Therefore, Chapter 4 is dedicated to analysing the relationship of the liberalization of commerce with poverty and inequality in Indonesia. We have used the following research models: the income model, Gini's model, and poverty model. All three models use variable income, Gini ratio, infrastructure, investment rate, non-state sector development, openness, real poverty line, poverty incidence, and dummy variables, namely urban-rural dummy and crisis dummy. These models were analysed using a simultaneous equations model and a data panel was used to examine the relationship between liberalization, poverty, and inequality in Indonesia.

The results of the model selection showed that the best method to perform income regression was the fixed effect method. The results of the investigation also showed that the growth of income per capita in Indonesia was significantly affected by the previous year's revenue, investment, degree of openness, and the ratio of the number of workers in the non-governmental sector. The openness variable was also significant and positively correlated with income. This means that openness in trade is an important factor to promote growth in Indonesia.

The ratio of the number of workers in the non-governmental sector positively and significantly affected growth. An increase in the number of workers in the non-governmental sector occurs as a result of economic growth with the creation of job vacancies by the private sector or by independent business improvements in the community. Income elasticity on openness is relatively more inelastic than income elasticity on investment and the non-government sector. This suggests that in Indonesia, the income elasticity against openness is relatively low (inelastic), so even though it is a source of growth, the role of trade openness is relatively not major.

The average growth in the cities in Indonesia is greater than that in the villages, as shown by the urban-rural coefficient, which is positive and significant. The higher growth in the city than in the village is possible because of the better characteristics of the cities in terms of smooth mobility of goods and services, concentration of economic activities in urban areas due to the much better facilities available, and the demographic conditions wherein the economic activities tend to be more concentrated where a better quality of human resources is available. In Indonesia, this is true for urban areas.

Factors which significantly affect the level of inequality in Indonesia are the ratio of the number of workers in the non-governmental sector to the total number of workers and the infrastructure, while the degree of trade openness and growth is not significantly associated with inequality. Trade openness in Indonesia does not affect inequality. The impact of trade openness in Indonesia may still depend on national policies, where, in fact, more open trade is neither able to redistribute income between skilled labour and non-skilled labour nor minimize the existing gap.

Better infrastructure can, in fact, increase the level of inequality in Indonesia. The better the construction of roads in an area, the higher the increase in inequality in that area. This is possible because the development of infrastructure in Indonesia is only beneficial for some people who have higher incomes. However, poor people cannot benefit from the development of transportation, so in the end, the gap between the rich and the poor becomes even higher. The ratio of the number of workers in the non-governmental sector has positive and significant effects. This shows that the higher the number of workers in the non-government sector, the more the inequality in Indonesia tends to increase. This can happen because an increase in the percentage of workers in the non-government sector is largely due to the increasing number of non-skilled labourers, which is greater than the number of skilled labourers, a phenomenon that only increases the income gap. Additionally, the crisis in Indonesia in 1997 proved to increase income inequality.

Trade openness in Indonesia has negative and significant impacts on poverty levels. This case showed that a direct anti-poverty effect occurred in Indonesia. This study also found that the liberalization of trade in Indonesia has proven to be able to lift most of the poor above the poverty line by creating job vacancies due to trade relations, for example, through the export of agricultural products and handicrafts. However, trade is not able to reduce income inequality in Indonesia, which means that although poverty has declined, the income gap between the rich and poor has not necessarily declined. Although trade liberalization has been proven to reduce poverty, this does not mean that Indonesia has to liberalize trade freely. Based on the descriptive statistical analysis described above, if a non-linear pattern between openness and the poverty rate is drawn, a U-shaped curve would be obtained. This means that in the early stages of trade liberalization, the poverty level tends to improve, but at a later stage, the level of poverty only becomes worse.

Infrastructure was found to negatively and significantly affect poverty levels. Infrastructure development will create job vacancies that will benefit the population belonging to even the lowest poverty line. Good infrastructure also creates new job opportunities in the transportation sector, which in turn will also help to reduce poverty. The poverty level in cities has grown at a relatively lower rate than in villages. This suggests that rural areas are more vulnerable to growth or increased poverty levels. The special feature of rural areas is the production activities carried out there, as most of the rural population in Indonesia work as farmers.

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