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The economic and maritime trade impact of Indonesian and global trade policy

by

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Part of Indonesia-Focused Joint Research Project:
“Indonesian Trade, Shipping Network, and Maritime Investment Analysis”

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Abstract

The Indonesian government has been facing the 'noodle bowl' phenomena in Asia regarding FTAs. There are plenty of FTAs and new forms of economic cooperation are being prepared all the time which create questions on how these will impact Indonesian seaborne trade. As part of the larger research project 'Indonesian trade, shipping networks, and maritime investment analysis', we examine Indonesia's trade policy as well as international (global) trade initiatives that will potentially impact Indonesian seaborne trade if concluded in the near future. To simulate Indonesia's current trade policy, we look at the nine existing and then focus on the 10 prospective economic agreements Indonesia is currently negotiating bilaterally or as part of the ASEAN region. We then simulate the most important global trade initiatives (that Indonesia is not part of), by modelling the three largest mega-regional trade agreements currently ongoing: OBOR, TPP and TTIP. We add the effect of these mega-regionals to the Indonesian trade policy scenario to see the combined effects. Finally, we look at WTO-TFA initiative to simulate the effects of multi-lateral efforts. The WTO-TFA we add to the second scenario to get one total picture of how the world could look like and what the effects for Indonesian maritime transport could be.

Methodologically, we base ourselves on desk research into Indonesia's trade and investment partners and trade policy. We then use the obtained information for Indonesia, mega-regionals and the WTO-TFA into the Global Simulation (GSIM) model to get a quantitative assessment of the size of the expected effects – in terms of the economic and trade effects.

We find that Indonesia benefits from the establishment of bilateral FTAs, but some FTAs matter much more than others. Particularly the FTAs with the EU, Rep. of Korea and India are important economically. The RCEP and AEC regional initiatives generate the biggest impacts to Indonesia's macro-economy (welfare, output and prices), although they depend not on one partner but on a large number of partners, making them harder to achieve (with less certainty of success). In terms of trade, all FTAs lead to increases in imports and exports, but almost all FTAs (except – for example – the Indonesia-India FTA) will lead to an increase in the Indonesian trade deficit, something the Indonesian government may not like from a political perspective (though economically it means Indonesia has increased its attractiveness to investments). The mega-regional trade agreements have different effects. We find that there are some spill-overs for Indonesia, but generally (because Indonesia isnot part of them) other countries benefit much more – including direct ASEAN competitors like Singapore (from TPP) and China (from OBOR). The establishment of WTO-TFA policy will benefit the Indonesian economy further – but does so for all countries. Developed countries, however, benefit relatively less. This study – combining all findings – recommends the Indonesian government to engage in ambitious FTAs and at the same time ambitiously implement the WTO TFA. This leads to the most positive economic outcomes, with least reductions in the trade balance or tariff revenues.

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List of Abbreviations

AEC	: The ASEAN Economic Community
AFTA	: ASEAN Free Trade Area
AJCEP	: ASEAN – Japan Comprehensive Economic Partnership
AVE	: Ad Valorem Equivalent
Bappenas	: *Badan Perencanaan Pembangunan Nasional* National Development Planning Agency of Indonesia
BKPM	: *Badan Koordinasi Penanaman Modal* Indonesia Investment Coordinating Board
BPS	: *Badan Pusat Statistik*, Indonesia Central Statistics Agency
CGE	: Computable General Equilibrium
EU	: European Union
EFTA	: European Free Trade Association
FDI	: Foreign Direct Investment
FTA	: Free Trade Agreement
GDP	: Gross Domestic Product
GNP	: Gross National Product
GSIM	: Global Simulation Model
GTAP	: Global Trade Analysis Project
IMF	: International Monetary Fund
NTM	: Non-Tariff Measure
OBOR	: One Belt One Road
OECD	: Organization for Economic Co-operation and Development
PE	: Partial Equilibrium
PTA	: Preferential Trade Agreement
RCEP	: The ASEAN Regional Comprehensive Economic Partnership
ROW	: Rest of the World
SMEs	: Small and Medium Enterprises
TEU	: Twenty-feet Equivalent Unit
TFA	: Trade Facilitation Agreement
TTIP	: The Transatlantic Trade and Investment Partnership
TPP	: The Trans-Pacific Partnership Agreement
UN	: United Nations
UNCTAD	: United Nations Conference on Trade and Development
US	: United States (of America)
WEF	: World Economic Forum
WTO	: World Trade Organization

Chapter 1 Introduction

With its 261. million population (World Bank, 2017), Indonesia has become one of the largest economies in the world. Nevertheless, the country is still struggling with its prolonged issue of how to maximize its resources. Based on the Global Competitiveness Report 2014-2015, issued by the World Economic Forum, Indonesia was in 4 place in the Southeast Asian region, below Singapore, Malaysia and Thailand. Despite its strong commitment to improve infrastructure and connectivity, some crucial issues still need to be prioritized.

One issue to be highlighted is Indonesia's access to the international maritime trade network. According to OECD/ITF (2015), 85% of total international freight volumes are carried by sea. Moreover, considering the country's identity as the largest archipelago of islands in the world, there is no doubt that seaborne trade is essential to Indonesia. This leads to the question of why – in terms of the linkage to the world-wide shipping network – Indonesia is still left behind?

Most of Indonesia's foreign trade nowadays is still transshipped via Singapore. The consequences of this condition are: (1) increasing foreign trade costs as a consequence of additional costs of feeder transport and (2) loss of potential income such as the provision of marine and port relative services like bunkering, ship maintenance and shipping agencies. The unfavorable position of Indonesia in the middle of international trade agreements, combined with poor logistics services, are considered to be the critical barriers to maximize the country's trade flows (GOV. UK, 2016). This eventually will hamper the achievement of better national welfare to its people.

Accordingly, we notice that it is necessary to carry out a holistic project to assess the impact of Indonesia's and global trade policy as well as the effect of strengthening Indonesian logistic services in both international and domestic routes with respect to the reduction of costs and improving the quality of services. Considering the broad scope of this research, five students will carry the project together by cascading the research into five different studies, as described in Figure 1.1.

This study is one part, the first one, of this research project, focusing on the impact of Indonesia's and global trade policy (in the form of trade agreements) for Indonesia's economy and maritime trade flow.

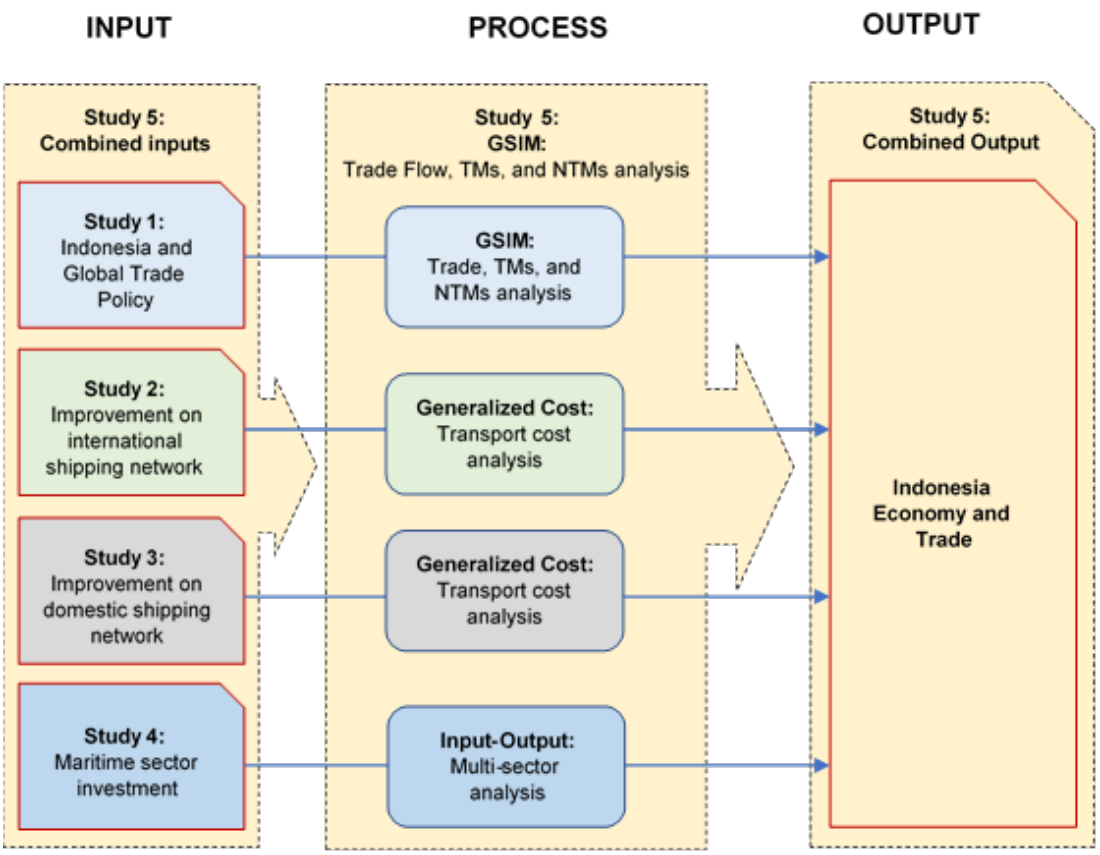

Figure 1.1 Joint Research Project:
"Indonesian Trade, Shipping Network, and Maritime Investment Analysis"

1.1. The First Study Research Background

One of the key elements to boost economic growth is to intensify global trading activities. UNCTAD (2014), particularly in its post-2015 development agenda, has defined international trade as an enabler for achieving a broad range of development goals. International trade may trigger job creation, enable efficient use of resources, as well as stimulate the entrepreneurs by providing incentives and improve the standard of living in all countries. Unfortunately, there are still a lot of concerns that need to be solved by Indonesia.

Based on the World Economic Forum report, The Enabling Trade Index of Indonesia in 2016 has climbed to the 70th rank out of 136 countries (WEF, 2016). Thanks to the incumbent President of Indonesia, Mr. Joko Widodo, who commits to improving as many aspects as possible to facilitate a better trade and investment climate in the country by launching the Economic Policy Package to improve national competitiveness. Internal reforms, both in organizational structure and bureaucracy cut-offs in some of Government bodies are also deducted to improve the country's trade enabling factors.

But is it enough? Such question arises, because many people still argue that in terms of market openness, Indonesia is still at a standstill. Lack of infrastructure and the under-quality labors are deemed to be important reasons (OECD, 2012) and so are protectionist trade policies of Indonesia due to the political economy of the country with regard to trade liberalization (Soesastro & Basri, 2005). Negative sentiments are more prevalent when dealing with the idea of trade liberalization. In Indonesia it is a common belief, especially among its policy makers and government officials, that Indonesia first needs to improve competitiveness by resolving its challenges and problems in infrastructure and logistics domestically, before expanding market access internationally (Damuri, 2014).

On the other hand, as part of a changing global economy, the rapid development of technology and connectivity has led to many more opportunities to form bilateral and multilateral trade agreements and other types of cooperation. In the last decade, there has been an increasing trend to form regional and bilateral free trade agreements, involving many countries and regions in the world, in parallel to the multilateral trading system. Some agreements involve Indonesia directly, some involve Indonesia through ASEAN and many do not involve Indonesia – but may affect it.

Starting from this situation, we look at how Indonesia's as well as complex global trade policy, via bilateral and regional trade agreements, will affect Indonesia's economy, and in particular its maritime trade flows. Through possible prospective trade policy scenarios, a good understanding of Indonesia's potential role amidst the global trade agreement developments will be attained. This information is important to help Indonesia in preparing an effective strategy for economic development, in particular to get information on where efforts will lead to the largest impact. Alongside international trade policy developments, domestic Indonesian improvements in the form of policies and the creation of adequate logistics infrastructure facilities are important. The latter is, however, not part of this study.

1.2. Research Objectives

The fundamental idea of conducting this study is to provide a better understanding of how Indonesia's and important global trade policy developments – via the signing of trade agreements – put impact on Indonesia in terms of economics and maritime trade. In doing so, we intend to trace the potential trade agreements as well as the main trade partners of Indonesia. By applying the most suitable quantitative econometric model, we aim to demonstrate various potential possibilities in the future and reveal the best scheme for Indonesia to maneuver amidst the dynamic global movements.

1.3. Research Question and Sub-Research Questions

Correspondingly, this study aims to answer the following question:

What is the economic and maritime trade impact of Indonesian and (most important) global trade policy developments?

To answer the main research question, we construct the following sub-research questions to support the process:

1. What is Indonesia's existing and prospective trade policy in terms of what agreements are already in place and what potential agreements could Indonesia engage in in the near future?
2. What are the related international (global) trade initiatives that potentially impact Indonesian seaborne trade in the future?
3. Which countries serve as the most significant trade partners of Indonesia?
4. What is the best methodological approach to answer the research question in a quantitative sense?

1.4. Research Design and Methodology

We conduct this study by using both qualitative and quantitative approaches. Via a literature review, we look at international trade and its benefits according to theory and empirical evidence, as well as at Indonesia's main trade and investment partners. We also – through desk research – present Indonesia's and most important global trade policies. This information serves as the basis for the scenarios that we construct to look at the economic and maritime trade impact of trade policy for Indonesia.

The Global Simulation (GSIM) model developed by Francois and Hall (2003) will be used as the quantitative approach to predict the main impacts of Indonesia's trade policy (as well as some global trade agreements) on Indonesia's economy overall and maritime transportation in particular. Through simulation process, we aim to identify the changes on macroeconomic variables namely trade effects, welfare effects, and output effects. Welfare effects includes the change in producer surplus, consumer surplus and tariff revenue. In doing so, we develop three scenarios of possible future trade policy scenarios and model them quantitatively with this model. These scenarios include Indonesian trade policy goals (i.e. several ongoing Indonesian trade negotiations), global regional or bilateral trade policy initiatives (e.g. OBOR, TTIP), as well as a global multilateral initiative (i.e. the WTO Trade Facilitation Agreement – TFA). We simulate the effects of trade policy by looking at changes in tariffs and non-tariff measures for Indonesia as a consequence of these trade policy measures. Also we draw upon Tamba (2017) and Triantoro (2017) to get initial levels of non-tariff measures in domestic logistics services – although we do not alter them since that is beyond the scope of this part of the research project.

As a final quantitative step, we will convert the values of changes in trade flows into quantities (i.e. numbers of containers and bulk cargo) according to a method developed by ECORYS (2015).

The realistic impact of Indonesian and global trade policy initiatives for the Indonesian economy, in particular maritime transport is the main output of this study. It is important to note, however, that this means that trade agreements could be used as drivers for change in the port infrastructure development strategy if maritime trade is potentially affected enough. As international trade is mainly embodied by seaborne trade, and for Indonesia this is particularly the case, the trade agreements we study will have an impact on Indonesian maritime transportation.

1.5. Thesis Structure

This study consists of six chapters, as shown in Figure 1.2. Beyond this Chapter 1, that contains the introduction the research background, research questions, research objectives, methodology and the structure of the thesis, five more chapters follow.

Chapter 2 provides the theoretical background and the description of recent economic situation, both from a global and local perspective. We study the related theories with regards to international trade, including the concept of economic integration and the impact of trade liberalization on economic development and (maritime) trade, as this becomes our main focus.

Chapter 3 highlights the most important trade and investment partners for Indonesia and the current Indonesia trade policy foci as well as main global trade policy developments (to construct scenarios in Chapter 4).

Chapter 4 discusses thoroughly the methodology used in this study. First, we elaborate on some potential models which could be used for our study after which we explain why the GSIM model is the optimal choice. Second, we illustrate the theoretical basis of GSIM model. Third, we detail the data needs of the model and data sources that we use. Fourth, we develop three scenarios that reflect possible trade policy futures for Indonesia. Finally, we present the methodology of converting the GSIM trade values (in US$) into trade volumes (numbers of containers and tons of bulk cargo), so we can explain the impact of changing international trade agreements as a consequence of trade policy, for Indonesia's seaborne trade flow - our main research question.

Chapter 5 contains the results of our model and an analytical description of the findings and what they mean – in particular in the context of our main research question. We also add a section of how these study results link to the other studies in this research project.

Chapter 6 concludes with overall findings as well as policy recommendations for the Indonesian government and suggestions for future research.

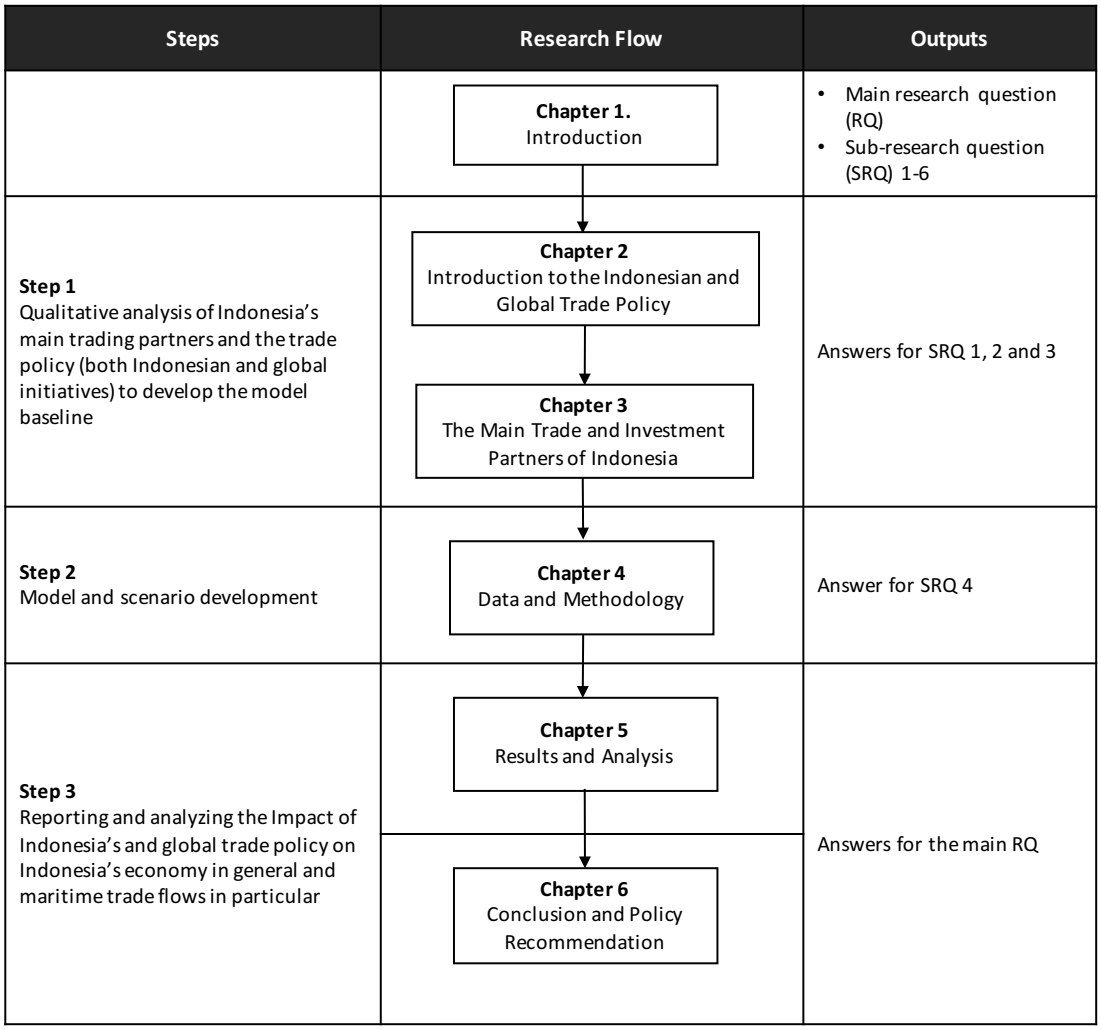

Figure 1.2 Research Structure
Source: Author's elaboration

Chapter 2 The Theory of Trade, Indonesia's and Global Trade Policy

This chapter aims to deliver a qualitative-based analysis in order to develop the model baseline used in this study. We will first discuss the relevant theories with regards to international trade mechanisms and how, under certain circumstances, they can influence the economic growth of a country. Following this, we will present an overview of current Indonesian trade policy and of the global trade policy initiatives that are having an impact worldwide (including in Indonesia). In addition, we will also include a general description of the World Trade Organization's (WTO) Trade Facilitation Agreement (TFA), which will potentially have a multilateral effect on the patterns in global trade.

2.1. International trade and the benefits of trade liberalization

The basic concept of international trade was firstly introduced by Adam Smith in 1776. At that time, Smith emphasized the importance of specializing; in other words, the importance of concentrating on producing what we are best at. David Ricardo (1817), sharpened this theory by adding the simple yet meaningful theory of comparative advantage, which notes the significance of relative (or comparative) difference, in comparison to the absolute difference that was used in Smith's theory. Ricardo also added technological difference, naming it as the classical driving force behind international trade flows (Marrewijk, 2007).

In order to advance the flow of trade between countries, trade liberalization agreements are formed with the aim of eliminating or reducing the policy-imposed barriers placed on the flow of goods and services, including on the flow of capital and labor (Baier, et al., 2008). In practice, trade liberalization can be executed by unilaterally reducing tariffs, or by lowering the import barriers at the same time as the trade partners (Snorrason, 2012). The latter is the more common practice, recently. In addition, Santos-Paulino (2002) mentions that liberalization policies can be achieved by implementing enforced export subsidies.

In order to establish sustained economic growth, it is necessary to create policies that will stimulate an economy and allow it to be open to global trade and investment. The International Monetary Fund (IMF) (2001) recorded that, in recent decades, no country has reached economic success without opening its economy to the rest of the world. East Asia, particularly China, has shown the benefits of opening itself to international trade, as – along with a more open investment climate – it has succeeded in achieving better living standards for its citizens. Some other developing countries (such as India, Uganda, and Vietnam) have also enjoyed faster economic growth and lower rates of poverty. Those developing countries that managed to lower their tariffs in 1980 had, on average, experienced faster economic growth by 1990 (Dollar, 2001).

In further developments, the idea of trade liberalization and the formation of regional agreements have removed tariff and trade barriers among a group of nations, thereby generating the concept of economic integration. Snorrason (2012) defines international economic integration as "a process of eliminating trade cost such that it is a means to reduce trade costs to increase welfare. As a process, it is evolving and continuing with changes in [the] market".

Regional economic integration can be classified according to five types, depending on the level of integration adopted (Figure 2.1).

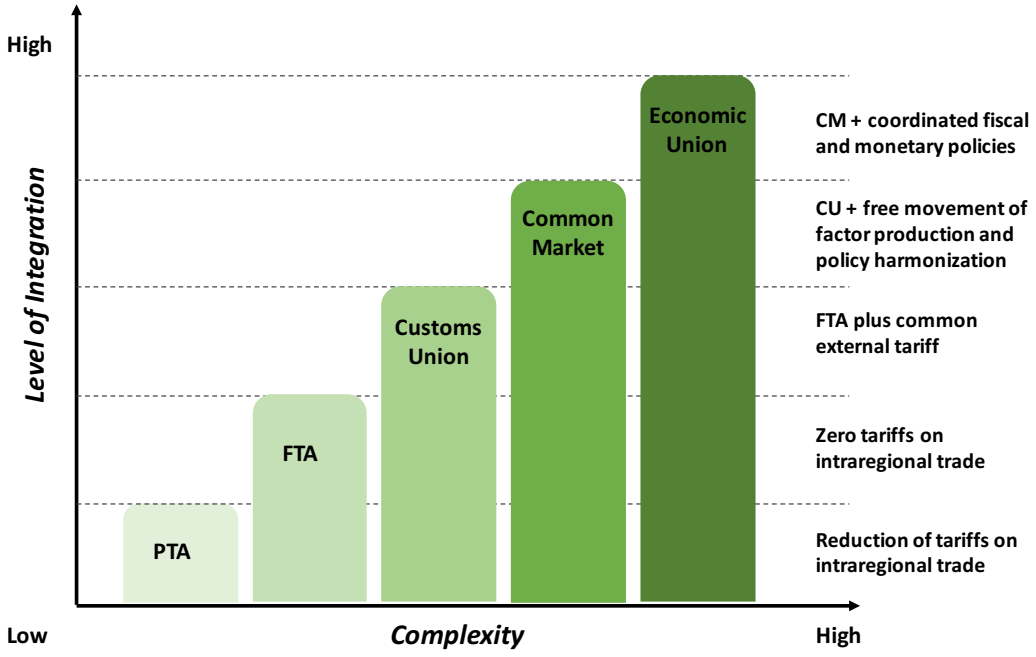

Figure 2.1. Type Economic Integration
From various sources modified by Author

Trade diversion, trade creation, and previous research

According to Suranovic (2012), in general, a trade diversion means "*a free trade area divert[ing] trade away from a more-efficient supplier outside the FTA and toward a less-efficient supplier*." Trade diversion can bring about either a reduction in or an improvement to a country's national welfare, depending on the case. Usually, when the price difference between the FTA partner country and the rest of the world is large, trade diversion result in a reduction in national welfare. On the other hand, trade creation will always increase a country's national welfare. As defined by Suranovic (2012), trade creation means "*a free trade area creat[ing] trade that would not have existed otherwise. As a result, supply occurs from a more-efficient producer of the product*." Both trade diversion and trade creation generate aggregate welfare effects. In reality, when an FTA is formed, presumably this area will engage with many

markets and multiple countries, therefore one needs to perform a thorough analysis to summarize the aggregate effects across markets and countries (Suranovic, 2012).

Sofjan (2016) looked at the economic impact of free trade agreements on Indonesia's export-import growth, import duty revenue, and poverty and inequality issues. The research found that in the short term, trade liberalization has a negative impact on exports and a positive impact on imports, while in the long term, there are no discernible effects. Trade liberalization increases the amount of imports duty revenue, even though the effect of trade liberalization is ambiguous, depending on a number of factors. And, for issues of poverty and inequality, Sofjan concluded that trade liberalization has reduced the level of poverty in Indonesia, and so should be pursued further.

Dianniar (2013) also studied the impact of free trade agreements, and in particular on Indonesia's agricultural trade flows, using the gravity model. He found that membership in FTAs has not had a significant impact on agricultural trade flows in Indonesia, and that the country has a tendency to trade more with higher income per capita countries such as Japan, the US, and Singapore. Also investigating the economic and environmental impact of trade liberalization in Indonesia, using the GTAP framework, Gumilang et al. (2010) found that Indonesia's participation in two FTAs – the AFTA and the IJEPA – is unlikely to lead to huge benefits in the economic and environmental sectors, despite the agreements boosting Indonesia's exports and imports, especially in areas where tariffs are cut.

2.2. Indonesia's current economic and political situation

The global economic crisis of 2008 proved that the Indonesian economy, along with that of China and India, was strong because it showed only a limited slowdown in economic growth, which surprisingly remained positive; the economic performance remained string thanks to the stability of the banking sector, public finances, and consumer prices. The recent increase in the size of the middle class also helped to support domestic spending, which helped to keep the economy steady, while the parliamentary and presidential election in 2009 further contributed by providing an economic stimulus.

According to the World Bank's quarterly report released in March 2017, Indonesia still has a relatively robust economic situation, marked by increasing economic growth in the middle of global uncertainty, well-controlled inflation, and its fiscal credibility has been improving, thereby stimulating increases in investment value. Nonetheless, it is facing some possible threats such as changes in US monetary policy, political uncertainty in the UK and the European Union, as well as a rise in protectionist sentiment throughout the world; possible issues arising from these events need to be anticipated because they could hamper Indonesia's economic stability (The World Bank, 2017).

In 2016, Indonesia's global Enabling Trade Index (ETI) reached a higher position than the previous year, climbing three places to 70 by performing well with regard to market access, despite the complexity of the country's tariff regime. However, among ASEAN members, Indonesia is still below Singapore, Malaysia, and Thailand, which were ranked 1, 37, and 63, respectively (WEF, 2016).

Indonesia's exports benefit from low tariffs, but trade barriers such as border compliance on the exports side still create a critical bottleneck. With regard to imports, the procedures are also complicated, although one improvement has been achieved – upgrading key functions of the Indonesia National Single Window (INSW). Indonesia's geographical situation, coupled with its lack of infrastructure development, has long been a significant trade barrier for. However, Indonesia ranks highly for its airport connectivity, although the country's level of Internet connectivity is still lower than other countries in the region (WEF, 2016).

In the context of Indonesia's trade and related policies, some scholars have written about the country's growing trend towards protectionism. Patunru and Rahardja (2015) mentioned that this is mainly caused by non-tariff measures. Tariffs are already low in Indonesia, but the strong possibility of restrictive policies being enacted in several sectors, as well as bans on raw mineral exports and greater authority for ministers to intervene in and monitor the flow of goods, could potentially prevent the country from opening its economy further, against a background of international competition.

Patunru and Rahardja (2015) also mentioned some possible drivers that could lead the country to carry out even further trade protectionist measures against the global economy. One example is an anti-foreign sentiment from local people who believe that foreign involvement in any sector – for example, increased amounts of Foreign Direct Investment (FDI), or financial support from international financing institutions – is a sign of Indonesian inferiority. This attitude is sometimes exaggerated by populist politicians who seek to obtain the support of grassroots communities, and also by interested parties who would benefit from the enforcement of trade protectionism.

This fact has strengthened the stigma that Indonesia's attitude to its trade and investment takes the form of "sitting on the fence" because although the country has demonstrated eagerness to actively participate in a number of international cooperations such as G20, APEC, and ASEAN, the country is still perceived as likely to enact protectionism measures (Patunru and Rahardja, 2015).

2.3. Existing Indonesia / ASEAN Free Trade Agreements

Despite the internal conflicts about the country's role in global economic diplomacy, Indonesia has been eager to get actively involved in a number of bilateral and regional cooperative endeavors. According to ARIC (2015) and information obtained from various sources, Indonesia is currently party to at least 20 FTAs, having either signed them directly or via ASEAN. It has so far signed ten FTAs, while the rest are still being negotiated. We will start our elaboration on each FTAs by presenting the existing FTAs which are in effect and have been signed either by Indonesia itself of through ASEAN to give a clear description of the recent development of Indonesia's trade agreements,

2.3.1. Japan – Indonesia Economic Partnership Agreement (IJEPA)

IJEPA was Indonesia's first bilateral trade agreement. It was signed on August 20, 2008 and has been in effect since July 1, 2008. This agreement seeks to advance the development of trade and investment between the two countries; Japan and Indonesia have a long history of mutual commercial interest due to trade and investment structures that naturally complement each other (Indonesian Ministry of Trade , 2007).

The coverage of the IJEPA is comprehensive, and can be categorized as WTO-Plus, covering twelve areas including the flow of people and a number of government policies related to competition, customs procedures, IPR, and procurement. In the agreement, tariffs on several products are nominated for elimination within 10 to 15 years. These includes the elimination or reduction of tariffs for food and chemicals, metals, footwear, and wooden products (future tariffs are to be only 0-9%; some products had relatively high tariffs of over 20%). Japan also commits itself to provide technical assistance for Indonesian farmers by providing a number of agricultural products that comply with Japanese non-tariff measures (Indonesian Ministry of Trade , 2007).

The agreement also aims to smoothen Japanese FDI in Indonesia, given that Indonesia has been one of Japan's preferred investment targets in Asia. Thus, the was IJEPA signed to facilitate a better business environment for Japanese investors, particularly with regard to the legal framework and other related business regulations

2.3.2. Pakistan – Indonesia Free Trade Agreement

The intention to expand the economic ties between Pakistan and Indonesia was made concrete through the Pakistan – Indonesia Preferential Trade Agreement, which took place on September 13, 2013. In this PTA, Indonesia agreed to lower the tariffs for imported products from Pakistan such as fresh fruit, cotton fabrics, cotton yarn, garments, leather goods, and sports products. Indonesia also recognized Pakistan as a pest-free area for kinnow, so removed non-tariff measures for kinnow exports from Pakistan (Swire, 2013).

In reverse, Pakistan offered 287 preferential tariff lines to Indonesia, including the same treatment for the export of palm oil to Pakistan as granted to Malaysia through the Pakistan – Malaysia Free Trade Agreement. As a result, the bilateral trade between Pakistan and Indonesia rose from US$ 1.1 billion in 2013 to US$ 2.2 billion in 2014 (Amirio, 2015). In 2015, Pakistan's charge d'affaires to Indonesia stated his country's intention to expand this economic cooperation into a free-trade agreement.

However, in August 2016, it was reported that Pakistan had refused to start the FTA negotiations due to a number of concerns. In short, the previous PTA was considered to have been too much in favor of Indonesia, and less beneficial for Pakistan. Furthermore, Pakistan was unsatisfied with Indonesia's import policies; for example, the import quota policy for garments and bed sheets implied a lower market access for Pakistan, compared to countries such as India, China, and other ASEAN countries. Another issue regarded rice imports. Pakistan insisted that Indonesia buy more rice from Pakistan, in accordance with the signed Memorandum of Understanding (MoU). The final concern was the meat import conditions established by Indonesia, stating that it would import meat only from countries that are free from foot and mouth disease. This was unfavorable for Pakistan because the country is still not free from this disease in its entirety, despite some zones being free. Given these conditions, is still uncertain whether the FTA between Pakistan and Indonesia will be realized in the near future (Ghumman, 2016).

2.3.3. ASEAN – Australia and New Zealand Free Trade Agreement (AANZFTA)

In addition to constructing its own bilateral agreements, Indonesia has organized other form FTAs in its capacity as an ASEAN member. The AANZFTA was put in place in January 2010, and is claimed to be the ASEAN's most comprehensive FTA, and the first multi-country FTA for Australia. (AANZFTA, 2015). It is also expected to be the catalyst for tapping potential deeper economic integration with ASEAN.

The AANZTA countries have a combined GDP of US$ 3.9 trillion and population of 658.2 million, as of 2015 (DFAT, n.d.). The benefits of AANZTA encompasses tariff elimination and reduction commitments, regional rules of origin, the WTO "plus" commitments covering the service sector, investment protection, and economic cooperation projects in nine subject areas. To deal with the economic cooperation work program, Australia agreed to help the ASEAN countries to implement the agreement by supplying up to AUD 20 million (DFAT, n.d.).

2.3.4. ASEAN – Japan Comprehensive Economic Partnership (AJCEP)

The AJCEP came into force in December 2008 and covers economic partnership in the area of goods and services trade, investment, and economic cooperation. The timeframe in which the tariff elimination needs to be imposed is flexible. For Japan, the ASEAN-6 (Brunei Darussalam, Indonesia, Malaysia, the Philippines, Singapore,

and Thailand), and Vietnam, the “normal-track” for tariff elimination is 10 years; and for the rest of the ASEAN members (Cambodia, Lao PDR, and Myanmar) the timeframe is 13 years (ASEAN, n.d.).

The AJCEP also facilitates the rules of origin, trade in service, investment, and a number of economic cooperation items in the form of technical assistance and capacity-building. This economic cooperation is focused on areas of mutual interest such as trade-related procedures, information and technology, energy, transportation and logistics, small and medium-sized enterprises, people development, and so forth (ASEAN, n.d.).

2.3.5. ASEAN – India Comprehensive Economic Cooperation Agreement

ASEAN signed an economic cooperation agreement with India on August 13, 2009. For India, the partnership was done to create alternative trading partners aside from its two major trading partners, the US and the European Union, which have recently been experiencing sluggish economic conditions.

India has seen the potential of ASEAN economic growth and plans to tap the capital goods sector within ASEAN countries. China has already covered this capital goods trade, so will be a tough competitor for India. In addition, India can focus on its service sector, which is better than its manufacturing and agriculture sectors; it has been more skillful in the computer, information, finance, medical tourism, and insurance business sectors. On the other side, India needs alternative energy sources besides its nuclear power plants to counter its domestic energy shortage. Thus, India is predicted to invest more in energy production sectors in ASEAN such as hydro plants and oil exploration (Banik & Centrale, 2014).

2.3.6. ASEAN – Republic of Korea Comprehensive Economic Cooperation (AKFTA)

ASEAN signed the AKFTA in August 2006, and the agreement came into effect one year later. This agreement was made after the Republic of Korea began to realize the importance of regional economic partnerships and economic integration, following the Asian financial crisis of 1997.

In the light of China’s domination in manufactured exports and foreign direct investment in ASEAN, AKFTA emphasized that the partnership in the flow of goods, services, capital, and labor would generate benefits for both ASEAN and South Korea. The partnership is to focus on ASEAN’s inner core of Singapore, Malaysia, Indonesia, Thailand, Philippines, and Brunei and aims to push Korea to lower its tariffs on agricultural products, the main export of ASEAN countries, and stimulate ASEAN to lower its tariffs on automobiles, the main export product of Korea (Park, 2006).

2.3.7. ASEAN – People's Republic of China Comprehensive Economic Cooperation Agreement (ACFTA)

Initiated in 2002, the agreement between ASEAN and China was a pioneer in ASEAN regionalism. In 2005, the agreement was signed and came into effect, and has made economists optimistic about both economies. China, being the biggest economic powerhouse in Asia, is a strategic trade partner for ASEAN. Geographically, China is adjacent with ASEAN countries, which are strategically suited for trade through land routes (Myanmar, Laos, and Vietnam) or the South China Sea. Before 2010, when the ACFTA was signed, ASEAN and China had reduced trade tariffs on around 4,000 types of goods. Both parties utilized the advantages of free trade area, leading ASEAN to become China's third-largest trading partner. In the long term, the ACFTA is expected to boost both Chinese and ASEAN exports to non-ACFTA countries, so both parties will benefit from FDI complementary trends.

Although the ACFTA seems to benefit both parties because overall trade has grown, some research has found that in the short term, ASEAN and China will compete with each other due to similarities between their production structure (Hastiadi, 2011) and negative spillovers on FDI between China and ASEAN, as a consequence of China's economic growth (Yang, et al., 2013).

2.3.8. Agreement Trade Preferential System of the Organization of the Islamic Conference (OIC)

The TPS-OIC framework agreement, which established the basic principles and rules of the TPS-OIC, was put into place in 2002. It was followed by the Protocol on Preferential Tariff Scheme (PRETAS), which added tariff reduction rates in February 2010. The Rules of Origin came into effect in August 2011, listing the origin of products that come under the agreement.

The agreement covers tariff, para-tariff, and non-tariff concessions for mineral products, agricultural products, animals, mineral fuels, and forestry products. OIC Member States aim to ensure mutual advantages within participating states and extend the trade preferences to all commodities (COMCEC, n.d.).

2.3.9. Preferential Tariff Arrangement-Group of Eight Developing Countries

Eight Islamic developing countries known as the D-8 formed an agreement in 1997 to strengthen their economic partnership. The group consists of Bangladesh, Egypt, Iran, Indonesia, Malaysia, Nigeria, Pakistan, and Turkey. The organization aims to improve their influence in the global economy, find new trade relations, and increase life standards (D-8 Organization for Economic Cooperation, n.d.).

The tariff reduction stipulated in the agreement covers 8% of each member's HS lines with tariff rates of over 10%. This tariff reduction is to come into force gradually: over 25% reduced to 25%, 15-25% reduced to 15%, and 10-15% reduced to 10%, for

various products. In addition to reducing tariffs, the agreement also seeks to eliminate non-tariff barriers (D-8 Organization for Economic Cooperation, n.d.).

2.3.10. The ASEAN Free Trade Area (AFTA)

The Association of South East Asian Nations was established in 1967, with the ASEAN Secretariat formed in 1976. Initially, the association consisted of five original members: Indonesia, Malaysia, the Philippines, Singapore, and Thailand. Five regional countries then followed suit and joined consecutively: Brunei Darussalam (1984), Vietnam (1995), Laos (1997), Myanmar (1997) and Cambodia (1999).

Previously, the ASEAN sought to promote political stability in the region. At the beginning of the 1970s, ASEAN started to develop into economic cooperation and in 1977, the first PTA was agreed, although the target attainments were not very significant. The tariff concessions as set under this agreement were too small, and related to products that only play a small role in intra-regional trade (Cuyvers & Pupphavesa, 1996).

Nevertheless, each country's economy still grew at a relatively high pace, even though they were not yet ready to open their economies further due to the high development gap between members. However, as they became stronger and at the same time came under increasing pressure from the IMF and World Bank to quicken the trade liberalization process, ASEAN announced the formation of AFTA in January 1992. The establishment of AFTA was also motivated by the willingness to balance global economic growth from the Western countries that had previously formed NAFTA and the EU trading blocs (Cuyvers, et al., 2005).

The AFTA was then established by enforcing the Common Effective Preferential Tariff (CEPT) scheme to implement the agreement. According to the ASEAN official website, the tariff range of more than 99 percent products in the Inclusion List (IL) from the five original members plus Brunei Darussalam (ASEAN-6) were lowered o maximum of 5%. The other, newer members had to bring down tariffs on products to no more than 5%; Vietnam did this in 2006, Laos and Myanmar in 2008, and Cambodia in 2010 (ASEAN, n.d.). The AFTA agreement also outlined three categories of products that could be excluded from trade liberalization: a Temporary Exclusion List (TEL), which at the end should be transferred to IL; a Sensitive List, (SL) which consists of raw agricultural products; and a General Exception List (GE), which consists of permanently excluded products (ASEAN Secretariat, 1999).

2.4. Indonesia's Prospective FTAs

The following FTAs are potential agreements that Indonesia aims to conclude and implement in the next five years. The FTAs are still in negotiation, and are not yet signed or in effect. Because there are a number of trade agreements that could come

into force in the future, we will consider the following agreements to constitute our scenarios in the model.

2.4.1. Indonesia – Australia Comprehensive Economic Partnership Agreement (IA – CEPA)

The IA – CEPA agreement was first launched by the leaders of both countries in 2010, based on the existing AANZFTA established between ASEAN, Australia, and New Zealand. It has entailed a long and difficult negotiation process because the relationship between the two countries has been strained by a number of political disputes such as spying allegations and the execution of Australian drug smugglers. However, the recent bilateral meeting held in July 2017 between Indonesian President Joko Widodo and Australian Prime Minister Malcolm Turnbull reaffirmed the commitment of both countries to complete the IA – CEPA negotiations by the end of 2017 (Xinhua, 2017). In this meeting, Australia conveyed its intention to reach an agreement that benefits both countries, including the implementation of lower tariffs for Australian sugar exports, adjusting quotas for the importation of Australian meat, giving Indonesian student more opportunities to pursue their education in Australia, and tariff elimination on pesticides and herbicides from Indonesian suppliers (Bloomberg, 2017).

The key interests and benefits of the IA – CEPA agreement include the removal of tariff and non-tariff barriers to boost bilateral trade, improving market access, and addressing impediments to increasing foreign direct investment between the two countries. The agreement is designed to boost economic cooperation, so as to boost the possibility of further trade liberalization (IA - CEPA, 2017).

Today, there have been seven rounds of negotiation for the IA - CEPA. The most recent round of talks was held in May 2017 and has led to a number of outcomes so far, namely the establishment of the Indonesia – Australia Business Partnership Group (IA – BPG), the Red Meat and Cattle Partnership, and cooperation between both parties' financial services and creative industries (IA - CEPA, 2017).

2.4.2. India – Indonesia Comprehensive Economic Cooperation Arrangement (II – CECA)

The negotiations for II – CECA were first launched in October 2011, inspired by the ASEAN – India CECA partnership signed in 2010. The two countries expressed their desire to build closer relationships in the area of trade in goods and services, investment, and economic cooperation. In earlier discussions, India stated its concerns regarding Indonesia's import ban on Indian buffalo meat, stating that India was still not free from Foot and Mouth Disease (The Hindu, 2011).

Even though the II – CECA development has not shown signs of making significant progress, in late 2016 a meeting was held between Widodo and Indian Prime Minister Narendra Modi to discuss the prospect of enhanced cooperation between the two

countries. Research by the Eminent Persons Group was mentioned in the conversation that touched on the possibility of increasing annual bilateral trade from the present US$ 9 billion to US$ 50 billion in the next nine years by boosting relations in the maritime sphere (The Economic Times, 2016).

2.4.3. Indonesia – Chile Free Trade Agreement

In November 2008, Indonesia and Chile countries agreed to set up a Joint Study Group to assess the benefits of signing a bilateral free trade agreement, and this was finished in November 2009. The study concluded such an agreement would have a positive impact, and that areas to improve include tariff elimination, legal certainty to support investment, reductions in transaction costs, and wider market expansion opportunities for both countries; for Chile, Indonesia could be a gateway to Southeast and East Asia, while for Indonesia, Chile could be a gateway to Latin America (Direcon-Kemendag, 2009).

The negotiation was launched on May 26, 2015, and then resumed on March 16, 2017. The third round was held on June 15, 2017, and addressed issues such as market access, inter alia, rules of origin, customs, legal protection, and economic cooperation (SICE, n.d.).

2.4.4. [Republic of] Korea – Indonesia Free Trade Agreement

Even though Korea already had an FTA with ASEAN as a unity, to further deepen trade with the region, Korea also sought to sign bilateral agreements with some ASEAN members, one of which is Indonesia (Bilaterals.org, 2012). One issues to be addressed through an FTA is that Korea would like to gain better market access to Indonesia, particularly for Korean automotive products. Compared to Japan, which dominates the Indonesian automotive market with a 90% market share, Korea's share of the market is still very small (Business Korea, 2013).

On July 12, 2012, the first round of negotiations was launched. In this phase, it was planned that the agreement would reduce duties on 1,051 tariff lines in addition to those already covered by the ASEAN – South Korea trade agreement. However, considering the unbalanced exports and imports flow between the two countries, Indonesia emphasized that the agreement needed to accommodate its specific interests in the area of investment. Indonesia has hoped that foreign countries, and especially Korea, would invest in sectors of its economy such as petrochemicals, mineral refining, and electronics. In 2014, Indonesia agreed to reduce tariffs for goods as long as Korea would give concrete guarantees of Korean investments in Indonesia. Indonesia acted very cautiously during these negotiations; the country avoided the same conditions as the ASEAN – China agreement, which generated consequences that were not profitable for the Indonesian economy (Yulisman, 2014).

2.4.5. Indonesia – Turkey Comprehensive Economic Partnership Agreement (IT – CEPA)

The launching of the IT – CEPA took place on July 6, 2017 in Ankara, Turkey. The initiative, which sought to build closer ties in the economic relationship between the two countries, was first discussed at the 7th Indonesia – Turkey Commissioning Meeting in 2008. A joint study was conducted that recommended the establishment of the CEPA, and this was re-emphasized in a meeting between Widodo and Turkish President Recep Tayyip Erdogan in 2015 (Bilaterals.org, 2017b).

The first negotiation round of IT – CEPA negotiations is planned for October 2017. The two sides plan to gradually implement IT – CEPA, and the first phase will focus on a Trade in Goods Agreement (TiGA). Other elements such as trade in services and investments will be negotiated in future stages, depending on how the agreement progresses (Kemendag, 2017).

2.4.6. Indonesia – European Union Comprehensive Economic Partnership Agreement (Indo – EU CEPA)

Indo – EU CEPA is one of the most recent trade agreements, and the negotiations proceeded very quickly. After the plan was announced in April 2016, the first round of negotiations was held three months later on July 18, 2016, with completion targeted for 2019. Indonesia is the sixth member of ASEAN that decided to initiate negotiations to form a free trade agreement with EU after Singapore (2010), Malaysia (2010), Vietnam (2012), Thailand (2013), and the Philippines (2015). As of July 2016, EU has finalized FTAs with Singapore and Malaysia. These bilateral trade agreements with ASEAN members are expected to support the EU's grand objective in the future, which is an EU – ASEAN agreement (EU Commission, 2017).

Indonesia currently enjoys lower duties through the trade preferences provided by the EU Generalized Scheme of Preferences (GSP), which covers around 30% of total imports from Indonesia (EU Commission, 2017). Indonesia has a surplus in trade with the EU, and the prospect of more open market access to the EU by the implementation of the Indo – EU CEPA is alluring. However, it would also constitute a tough trade-off for Indonesia because the EU has requested removing import duties on as many as 95% of Indonesian tariff lines. Indonesia would like an opportunity to expand its market access to the EU, but at the same time needs to be careful in negotiating. The country should be scrupulous in its approach, especially when specifying which products can compete to enter the EU market, at the same time as filtering EU products that would have the least impact on local products (Kurniawan, 2016).

2.4.7. Indonesia – European Free Trade Association Comprehensive Economic Partnership Agreement (Indonesia – EFTA CEPA)

The EFTA trade bloc consists of Iceland, Norway, Liechtenstein, and Switzerland. The formal preparation for the Indonesia – EFTA CEPA was started in 2015, and the

first negotiation launched on July 7, 2010 in Jakarta. In between, a Joint Study Group was put in place to ensure that the agreement would bring about mutual benefits and a win-win solution for all parties, taking into account complementary economic conditions for both sides. EFTA then stated its readiness to assist Indonesia in leveraging its capacity to implement the agreement effectively (EFTA, 2016).

However, as of the end of March 2017, there have been only 12 rounds of negotiations, showing slow progress in completing the agreement. The agreement has been subjected to a lot of criticism, and it has been accused of diverging too far from the existing WTO agreements, and being unfair for the developing countries involved, including Indonesia (Bilaterals.org, 2007).

In the most recent round of negotiation held in Geneva on March 28-31, 2017, a group of experts took parts in the area of negotiations comprising merchandise trade, sanitary and phytosanitary measures, rules of origin, non-tariff barriers or trade facilitation, trade remedies, services, investment, intellectual property rights, government procurement, cooperation, legal issues, and trade and sustainable development (Reith, 2017). Based on historical trade records, the EFTA countries' main exports to Indonesia are machinery and pharmaceuticals, while Indonesia exports ships, apparel, and footwear to EFTA region (Lomas, 2012).

2.4.8. ASEAN – Hong Kong, China FTA (AHKFTA)

Meetings between ASEAN and Hong Kong to reach a free trade agreement began in 2014 and there have been 10 rounds in total, and the agreement is planned for completion in November 2017. The most recent round, held on July 30-31, 2017 in Thailand, succeeded in wrapping up all area of interest, and the pact will be signed at the 31st ASEAN Summit in November 2017 (Bilaterals.org, 2017a).

The scope of negotiations of the AHKFTA encompasses, among other measures, the trade in goods, rules of origin, sanitary and phytosanitary measures, customs procedures, trade remedies, trade in service, intellectual property rights, and economic and technical cooperation (MITI, 2017).

2.4.9. ASEAN Economic Community (AEC)

Overview

The grand design of the AEC cannot be separated from the history of ASEAN, including the previous ASEAN Free Trade Area (AFTA) pact. More challenges in the future such as the growing intention of East Asian countries to widen their influence in the global economic competition have driven ASEAN members to take an anticipatory step by taking economic integration to the next level. This phenomenon can be seen in the fast-growing number of FTAs signed in the last decade; East Asian countries have learned from previous global crises about their interdependence with the emerging markets of south-east Asia. At the 9th ASEAN summit in the Bali Concord II held on October 7, 2003, ASEAN leaders agreed to form the ASEAN Economic Community (AEC) to form a single market and production base, with free

movement of goods, services, investment, and labor, a freer flow of capital, and to promote faster economic development and a reduction of poverty. The target should be accomplished by the year 2020 (Cuyvers and De Lombaerde, 2005).

According to the ASEAN Secretariat, deeper economic integration will be pursued by accelerating eleven priority sectors, as follow: (1) agro-based products, (2) air travel, (3) automotive, (4) e-ASEAN, (5) electronics, (6) fisheries, (7) healthcare, (8) rubber-based products, (9) textiles and apparel, (10) tourism, and (11) wood-based products. Import tariffs in these priority sectors were to be set at zero by 2007 for the ASEAN-6 countries and by 2012 for the ASEAN-CLMV countries, which was earlier than the previous target, as stated under the AFTA agreement.

Likeliness that this will happen

The year 2015 passed without any formal announcement about full ASEAN economic integration. Many experts have argued that the establishment of the AEC is facing a number of formidable barriers. Ofreneo (2017) said that the most important reason behind the slow progress of the AEC is the gap between regional policy agreements and policy implementation in internal member countries. Furthermore, intra-ASEAN trade is not very significant, as indicated by trade statistics. Compared to other economic integration agreements like the EU and the NAFTA, which were successful in accelerating intra-trade value to 60 and 50% higher values, respectively, the 25% increase of intra-ASEAN trade can be considered stagnant. The explanation for this phenomenon is because some ASEAN members generate much more trade to third-party countries such as China, Japan, and the United States than others.

Other reasons are the conspicuous development gap within the region with regards to the economy, the competition between members in some particular industries, the rise of the “noodle bowl” situation, and unsolved non-tariff barriers issues (Ofreneo, 2017). Cuyvers and De Lombaerde (2005) describe the need for change in perceptions of foreign investments, especially because the concept of AEC aims to eliminate barriers to the flow of production factors (investment, capital, and skilled labor). Moreover, with regard to the huge gap between the members as concerns the existing internal tariff policy, the enforcement of a common external tariff as an attribute of the common market economy will not be included. As a consequence, there are still doubts as to whether the ASEAN will successfully foster economic integration in the region.

Possible impacts for Indonesia

Considering that Indonesia is one of the most influential ASEAN members, given that its economy is larger than the others, the impact of the full-commencement of the AEC will be very significant. Just like the general purpose of all forms of economic integration, Indonesia is expected to reap the benefits of trade liberalization through the escalation of trade competitiveness, which will ultimately lead to better living standards for its people. Many scholars have predicted how the AEC will impact the Indonesian economy. Generally, most trade analysts argue that the current internal

conditions of Indonesia, with its lack of labor, low product quality, and insufficient infrastructure, will still hamper the country's ability to derive benefits from the AEC.

2.4.10. Regional Comprehensive Economic Partnership (RCEP)

Overview

Alongside the TPP, the RCEP is another mega-regional trade agreement that is being prepared for implementation in the coming years. The agreement focuses on addressing the "noodle bow;" phenomenon in the Asia Pacific caused by too many and overlapping FTAs. In comparison to the TPP from the ASEAN point of view, one of the objectives of the RCEP is to improve ASEAN's position to be the center of production of East Asia, while the TPP aims to seize broader export market access to the US, especially from Vietnam. Furthermore, the RCEP provides a more reasonable scheme in trade liberalization than the TPP, in that it acknowledges the fairly high gaps between the member states' economies. Thus, the RCEP is more flexible in addressing such problems, by facilitating special treatments for countries that need more time in preparation. Within this context, the RCEP is preferred than the TPP from the perspective of ASEAN as a unity (Natalegawa, 2015).

Initially, the RCEP was meant to combine the two proposed FTAs in 2006: the East-Asia FTA, which is China-led and centered on the ASEAN+3, and the Comprehensive Economic Partnership in East-Asia, which is Japan-led and centered on the ASEAN+6. In 2011, it was decided to fuse both plans into an ASEAN-led agreement, and official negotiations finally started at the beginning of May 2013 (Wilson, 2014).

In accordance with its primary goal, the RCEP placed special attention on trading in goods by integrating the five ASEAN-plus FTAs into a single agreement, and then negotiating a further tariff reduction. The agreement aims to be "WTO consistent" instead of "WTO Plus," thus we can see that it is less ambitious in term of trade liberalization; only six non-tariff issues are taken into consideration. Moreover, the RCEP has a more restrictive geographic scope, consisting of the ASEAN bloc, China, Japan, South Korea, India, Australia, and New Zealand.

Wilson (2014) outlined the possible advantages and disadvantages of the RCEP. An advantage is that it could be the fastest and cheapest way to address the "noodle bowl" problem because it has a simple design and a low level of ambition. On the other hand, lower ambition could translate into the risk of continuing the pattern of low quality FTAs in the region.

Likeliness that it will happen

Some economic and political obstacles are combining to slow down its implementation. The different stages of economic development among the member countries demands that RCEP negotiation be mindful of this; it is expected to be adjustable for members with relatively lower-level economies, but at the same time there is pressure to impose a more ambitious scheme of tariff liberalization in order to solve the problem of low-quality FTAs in the Asia-Pacific region. The heightened

tension caused by territorial disputes in the South China Sea between China and some ASEAN countries, namely Vietnam, the Philippines, Malaysia, and Brunei Darussalam, has also slackened the pace of the negotiations.

However, the freezing of the TPP due to the withdrawal of the US from the agreement may lead to a bigger chance that the RCEP will come into being. South East Asia is being encouraged to accept a leadership role in continuing economic integration, especially because the world is seeking positive signals amid the rise of protectionism in other parts of the world.

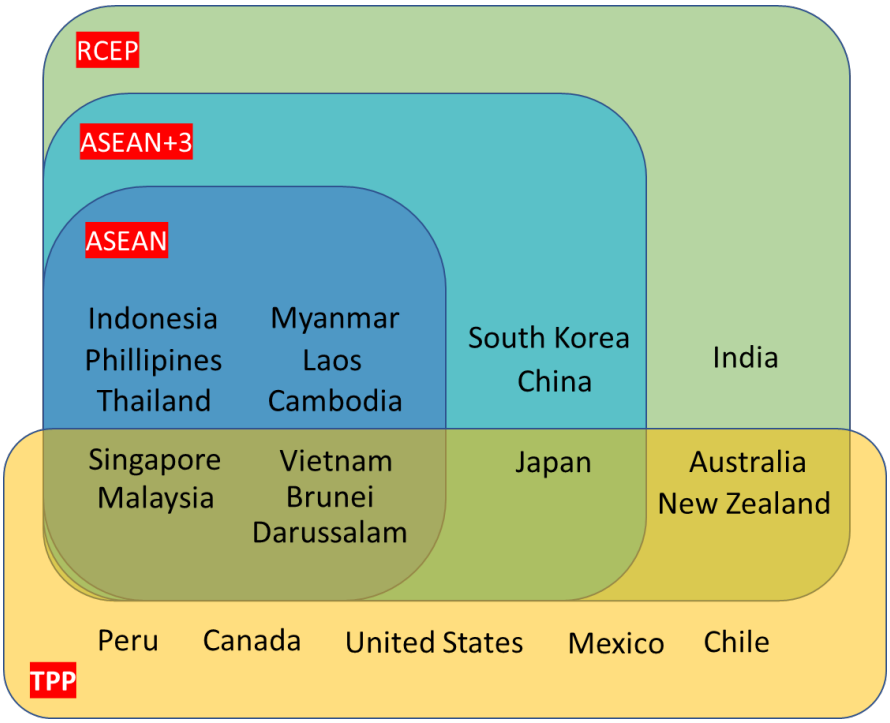

Figure 2.2. Mega-Regional Trade Agreements in Asia Pacific
Source: The Economist Corporate Network (2016)

Impact on Indonesia
As one of the initiators in early 2012, Indonesia has deeper attachment to the RCEP, although there was a big question in late 2015 as to whether Indonesia would choose to join either the TPP or the RCEP. Based on research by Plummer (2013), Indonesia could gain US$ 18 billion from the RCEP and US$ 62 billion from the TPP-16, showing that in terms of economic gain, TPP would generate higher benefits due to greater access to markets with which Indonesia does not have FTAs. However, this would be harder to implement and moreover, the TPP now is facing an impasse due to the US's withdrawal.

The essential point is that if the RCEP is run flexibly, without a clear commitment to making it deeper and more qualified, it will not have much of an impact on the Indonesian economy. A "lower-ambition" RCEP have a positive influence on the

political side, but not economically. Furthermore, Indonesia is required to play a greater role in RCEP, considering the fact that Indonesia constitutes 40% of the ASEAN's GDP (Plummer, 2013).

One of the advantages of the RCEP for Indonesia includes an opportunity for economic cooperation with North East Asia countries with which it does not have FTAs. On the other hand, India could pose a threat because it could gain an advantage from greater access to the ASEAN+3 market (Plummer, 2013). The RCEP is expected to reach the final round of negotiations in 2017.

2.5. Global Trade Initiatives

Since the 2000s, there has been a rapid increase in the number of FTA in the Asia-Pacific region. Prior to that, trade liberalization systems mainly occurred under the umbrella of WTO support, in the form of multilateral agreements that enforce member countries to comply with the predefined rules. Wilson (2014) mentioned a number of driving factors in shifting this trade liberalization system. First, it can be triggered by the world's discouragement about the Doha Round negotiations, which are showing very slow progress, so many countries have decided to choose FTAs as their preferred liberalization system. Second, the attractiveness of the "WTO-plus"; through FTAs, several well-developed countries can obtain a broader range of trade liberalization in this area. Third, the presence of pressure to join an FTA; countries are more likely to avoid being isolated from agreements spreading across their region. Fourth, FTAs are also used by the government as a "tool" in expediting other goals aside from purely economic purposes, such as geopolitical intentions.

Being a part of ASEAN, Indonesia is experiencing the effect of FTAs spreading across the Asia-Pacific region. Since 2000, several FTAs between ASEAN and major nearby countries such as China, Japan, and Australia have been reached, in addition to each country's bilateral trade agreements. This situation has had the following consequences. First, the rapid spread of FTAs has entailed a lower quality of agreements (Dent, 2010), which are deemed to have failed to achieve the main goal of advancing trade liberalization in a substantial way. There are many FTAs between countries in the region with low trade volumes, and they often exclude the important sectors such as agriculture and financial services (Ravenhill, 2008). In addition, the agreements between ASEAN and China usually do not solve the WTO-plus issues (e.g. investment, intellectual property, and technical trade barriers) that may possibly escalate the WTO rules (Capling and Ravenhill, 2011).

Second, there is the "noodle bowl" phenomenon, which depicts the complex and overlapping trade liberalization schemes under various FTAs (Wilson, 2014) because FTAs can vary greatly from each other, focus on different sectors, and involve different countries and sets of rules. Some consequences that may arise given these conditions are unnecessarily intricate rules that affect business operation, particularly

in related transaction costs, as well as the tendency to generate competition between the trade blocs (Warwick Commission, 2007).

Aside from this situation, since 2010, many countries in the Asia-Pacific region have started to shift their trade strategy by emphasizing regional agreements, rather than bilateral pacts. This is the beginning of the era of mega-regional trade agreements. The existence of such agreements will certainly challenge emerging countries like ASEAN members, thus generating more options for trade policy implementation. Currently, there are several mega-regional agreements that are being prepared; examples are the China- and ASEAN-led RCEP, the US-led TTP, the US-EU exclusive agreement TTIP, and the China-led OBOR initiative. Although the latter cannot be categorized as a form of trade agreement, it is reasonable to consider it in this category because it could have almost the same after-effects as mega-regional trade agreements on global trade patterns.

2.5.1. Trans Pacific Partnership (TPP)

Overview

The TPP is another recent popular mega-regional trade agreement that may have a significant impact on ASEAN, including Indonesia. The members of the TPP and the RCEP are outlined in Figure 2.2, showing that some major countries in the Asia-Pacific region are members of both TPP and RCEP, prompting the question as to which agreement will come to dominate. The TPP was started in 2006, involving Brunei Darussalam, Chile, New Zealand, and Singapore under the "P4 agreement." This FTA stood out among other FTAS in the surrounding region, and successfully persuaded the US to join. In 2008, the US announced its interest in extending the P4 agreement in order to boost investment and financial services liberation. In March 2010, the official negotiation of TPP was begun, involving P4 parties, the US, Australia, Peru, Vietnam, Canada, Malaysia, Mexico, Japan, and South Korea (Capling and Ravenhill, 2011).

Differently to most FTAs in the region, which usually have little impact, the TPP emphasizes trade liberalization, along with the enforcement of the WTO-plus scheme. The coverage area in the TPP is very wide, comprising 20 areas in government procurement, investment protection, financial services, environmental standards, and intellectual property (TPP Countries, 2011a). Members also commit to delivering a comprehensive agreement covering all goods and services, avoiding the exclusion problem that is a common feature of other FTAs.

The ambitious goal of the TPP is the major advantage of the agreement, and it could effectively overcome the problem of low-quality FTAs in the Asia-Pacific region. On the other hand, this has also become the biggest liability of the TPP. The ability to reach an agreement in controversial areas such as agriculture and intellectual property is challenging because these areas were also the key reasons behind the WTO's Doha Round deadlock.

The likelihood that this will happen

Previously, when the US was still committed to the TPP, many people questioned the how the geopolitical nature of the agreement would develop, given that some of Asia's biggest economies – China, India, and Indonesia – were not yet included in the agreement. It was predicted that the TPP would function as the US's channel to limit China's domination of the region. However, one remarkable event happened in early 2017, immediately after the US presidential election and Donald Trump's inauguration. Not more than one hundred hours after his inauguration, President Trump decided the US would withdraw from the TPP deal. This action shook the other TPP members, and it changed the global economic direction. Given the absence of the US, Japan and Australia are still seeking opportunities to rescue the TPP, with China as the leader of this group. However, it is difficult to involve China in the TPP because it has a cautious approach to trade agreements beyond goods and tariffs, so the TPP framework will not suit its policy (Edwards, 2017). In the future, China is predicted to focus on the mega-regional trade rival of TPP, the RCEP. Recent events – the withdrawal of the US from a number of regional trade agreements, and the uncertain political future of the UK – could result in South East Asia, along with China, potentially being regarded as playing a key role in the global economic direction.

The impact on Indonesia

In October 2015, through President Joko Widodo, Indonesia publicly showed an interest in joining the TPP, after he met then-US President Barack Obama. He stated his intention to free up the Indonesian private sector from so-called "poorly conceived policies and misguided protectionism." On the other hand, most people at home perceived this as a radical decision because some TPP principles and the liberalism paradigm in general are contrary to Article 33 of the 1945 Constitution (UUD) of the Republic of Indonesia. In order to create fair competition among its members, the TPP regulates governments' support of State-Owned Enterprises (SOEs) and the private sector in a non-discriminative way. contradicts Article 33 UUD 1956, which grants exclusive rights for SOEs, thus promotes a protectionist and monopolistic economy.

In the context of foreign direct investment, according to Syadullah (2016) Indonesia's decision whether or not to join the TPP will not significantly affect investment in Indonesia because FDI comes largely from TPP members that are already committed to investing in Indonesia, namely the US, Singapore, and Japan. The possibility of capturing more FDI is higher under the TPP scheme, but will come with other detrimental issues. One of these is investors' right to sue the government policy through international arbitration, which is considered undesirable because most Indonesians prefer to keep national legal sovereignty. Given this domestic situation, along with the US's withdrawal from the agreement, the TPP is unlikely to have much impact on Indonesia, at least for the next four years.

2.5.2. China's One Belt One Road (OBOR) Initiative

Overview

Chinese President Xi Jinping introduced the OBOR initiative in 2013 as the combined concept of a "Silk Road Economic Belt" and a "21st Century Maritime Silk Road" (The Economist Corporate Network, 2016). The idea is to build ambitious foreign and economic policies by providing trade route connections between Asia, Europe, and Africa through land and sea, crossing regions with high economic potential such as South East Asia and East Africa.

Figure 2.3. The economic roadmap of OBOR initiative
Source: The Economist Corporate Network (2016)

The OBOR's vast planned physical infrastructure is to be built in over 60 countries, representing approximately 40% of the world's total Gross Domestic Products (GDP), or US$ 2 trillion, and 4 billion people (The Economist Corporate Network, 2016).

OBOR aims to boost long-term economic growth by enhancing trade flow, bringing benefits to all the countries involved (Zhao, 2016). Furthermore, according to Cai (2017), from the domestic Chinese point of view, the initiative is expected to address three overriding objectives. First, as China modernizes, the development of transnational infrastructure along the OBOR roadmap will help to stimulate the economic growth of underdeveloped regions in the country. Second, with the more integrated trade chain built over China and its neighboring countries, it will be easier

for China to export its excess capacity. Third, OBOR can be used as a channel to export China's products, especially its technological output.

Nevertheless, the Chinese government is reluctant to publicize OBOR as this type of strategy. After the initiative was compared to the US Marshall Plan, they emphasized the "Three Nos" principles, according to OBOR implementation, which are: not interfering in the other nations' internal affairs, not seeking a "sphere of influence," and not striving for dominance (The Economist Corporate Network, 2016).

Given China's ambitious goals and the enormous impact this infrastructure would have, and the proposed connectivity and economic development of its surroundings, OBOR can be viewed as another mega-regional initiative to further deepen economic integration among the involved countries. The realization that OBOR can be perceived as both an opportunity and threat for different regions or countries has made the US government respond to OBOR with selective actions. Not many US officials have mentioned the significance of OBOR, yet under some circumstances where China's help is needed – for instance, to maintain political stability in Central Asia – the US government has expressed mild welcome and supported the initiative. However, US scholars have generally interpreted the impact of OBOR as being positive in term of boosting economic growth and financial flows. In term of geopolitical power, OBOR can be perceived as reflecting the rise of China's dominance, which could potentially change the power structure in Eurasia and Asia Pacific (Zhao, 2016).

Is it the Central Asian countries who are the most welcoming of the implementation of OBOR because they have a relatively high dependence on China, particularly with regard to primary products and natural resources. Geopolitically, Central Asia has found it difficult to build closer ties with European countries, so forming a close relationship with China can appear a better option. Furthermore, China has also shown a good approach to Russia by emphasizing the connection between OBOR and the Eurasian Economic Union (EEU) – another form of economic integration led by Russia.

For the ASEAN members, which are mostly developing countries with emerging markets, the presence of OBOR could help to leverage infrastructure development, as well as create more jobs through the capital flow of foreign direct investment. On the other hand, the region is also being cautious because ASEAN members do not want to become too reliant on China.

The likelihood that this will happen

So far, the OBOR initiative is still advancing. with the last OBOR summit held in May 2017. In this event, President Xi claimed that nearly 70 countries and international organizations have agreed to sign up to the enormous project. In 2016, PwC (2017) found that projects and deals related to OBOR had generated a combined US$ 494 billion in value, and that the overall mega-project will cost approximately US$ 5 trillion

(PwC, 2016). Furthermore, there have been positive signals from the US; it announced a major agreement with China on some export products, after previously bashing China for its trade movement. This denotes an endorsement of the OBOR initiative.

The impact on Indonesia

The Economist Corporate Network (2016) predicted that of the ASEAN countries, Indonesia would be the biggest beneficiary of the implication of OBOR, with OBOR-related infrastructure projects in the country being valued at approximately US$ 87.4 billion. This is almost double the value of the infrastructure for Vietnam and the Philippines. However, the recent development of OBOR has shown that Indonesia has only received US$ 5-6 billion, far less than fellow OBOR countries such as Malaysia and Pakistan, who have received US$ 30 billion and US$ 55, respectively (Lembong, 2017). This is in line with research by Ma (2016), who assessed Indonesia as being only "important" OBOR partners, unlike both Malaysia and Pakistan, who she deemed "main partners."

Nonetheless, it should be obvious that Indonesia, with its ambitious domestic plan to be a global maritime fulcrum, will greatly benefit from the implementation of OBOR. And, differently to any other trade-related agreements, OBOR will take the form of FDI in infrastructure development – one particular sector that Indonesia is focusing on. At a glance, OBOR initiative seems in accordance with Indonesia's long-term plan but the domestic condition of Indonesia, especially the political will to prevent the country from becoming too dependent to China, leads the country to approach OBOR very cautiously. Currently, Indonesia has offered two of three planned infrastructure projects to China, showing its intention of reaching a win-win solution with China.

2.5.3. Transatlantic Trade and Investment Partnership (TTIP)

Overview and trade policies

The TTIP is another mega-regional trade agreement planned between the EU and the US, and negotiations began in June 2013. Considering the coverage area of this agreement, Indonesia and ASEAN will obviously not be directly involved. However, the consequences, and especially the spillover effects, could be impactful; just as for any other trade agreement, the TTIP could create and divert trade in third countries.

The agreement is estimated to gain an additional EUR 119 billion per year in trade for the EU and EUR 49.5-95 billion for the USA, according to research by the Center for Economic Policy Research (CEPR). This research used the scenario of eliminating all tariffs (full tariff liberalization) and a one-quarter reduction in Non-Tariff Measures (NTM). Thereby if concluded, the TTIP would be the largest FTA in the world, covering almost 40% of global GDP, and should significantly the various aspects of world trade.

The likelihood that this will happen

The continuation of the TTIP is now being questioned; new US President Donald Trump decided to withdraw his country from the agreement for the same reason as for the TPP negotiation.

Impact on Indonesia

Based on Manrique, Gil and Lerch's (2015) report for the European Parliament, developing countries including Indonesia will be affected under the following conditions. First, for direct trade impacts (tariff), TTIP could have a positive impact through greater demand for exported products from developing countries, within certain circumstances when the EU and US adopt liberal rules of origin. A negative impact could also arise from trade being diverted; however, based on a comparison between the composition of exports from developing countries and those from the EU and the US, it may be concluded that the trade diversion would not be very significant.

Second, from the reduction of the NTMs and regulations, developing countries may enjoy benefits from the simplification and cost savings from having a single set of standards, but still depend on the level of regulatory standards; the higher the standards, the more difficulty developing countries face in trading. However, this condition is unlikely to happen because the two parties have different regulatory approaches, thus a complete regulatory harmonization would be hard to be complete. The TTIP would also change the future trajectory of preferential trade regimes between developing countries and the EU and US. To reduce the negative impact resulting from this condition, both the EU and the US should manage the convergence of preference systems with developing countries.

2.5.4. The WTO Trade Facilitation Agreement (WTO – TFA)

The WTO's efforts to encourage trade facilitation has evolved through a number of phases, from a limited mandate to a more ambitious negotiating movement and finally multilateral agreement. The journey took 20 years before it arrived at a historical moment in Bali on February 22, 2013, when a major milestone for the global trading system was accomplished by the conclusion of the first multilateral trade agreement, known as the WTO – TFA. This agreement then came into force on February 22, 2017, after two-thirds of WTO members finished their domestic ratification, including Indonesia (WTO, 2017b).

According to the WTO (2015), "*the TFA clarifies and improves three articles of the General Agreement on Tariffs and Trade (GATT), negotiated in the 1940s, which were considered inadequate to meet the needs of the modern business world*." By streamlining the flow of trade across borders, the WTO – FTA is predicted to lower the total cost of trade by 14% at minimum for low-income countries, and 13% at minimum for upper- and middle-income countries. The TFA also provides assistance to developing and Least-Developed Countries (LDCs) by improving their capacity to implement the agreement.

The TFA applies the world's best practice in shortening and simplifying classic customs procedures and thereby significantly reduce the total cost of trade and benefit economies in a large number of ways, especially developing and LDCs. In implementing the TFA, a new and innovative approach is provided through a special and differential (S&D) treatment for the developing and LDCs. This approach involves an introduction of three categories in which each developing or LDC is allowed to self-determine when they will be able to implement the respective provisions and what kind of capacity building support they will need.

Furthermore, the TFA is expected to reduce inefficiencies in border procedures by providing common standards for trade facilitation measures. It could also minimalize regulatory overlaps in countries that belong to more than one RTA, reduce discrimination, and maintain the complementarity between the regional and multilateral level. In addition, the trade facilitation in RTAs that are more ambitious than the TFA will continue to complement the TFA.

The TFA also offers more benefits, among which are: (1) developing countries are predicted to benefit the most by a full implementation of TFA; (2) the practicality of trade facilitation of time-sensitive goods; (3) better participation by the small and medium-sized enterprises (SMEs) in trade; (4) life-quality improvement for the poor; (5) the attraction of more foreign direct investment; (6) better collection of government revenue; and (7) lower cases of corruption (WTO, 2015).

2.6. Summary

To conclude, we present the completed mapping of Indonesia's and other global trade policies in Figure 2.4. We establish these agreements/cooperation as the basic framework for developing our model.

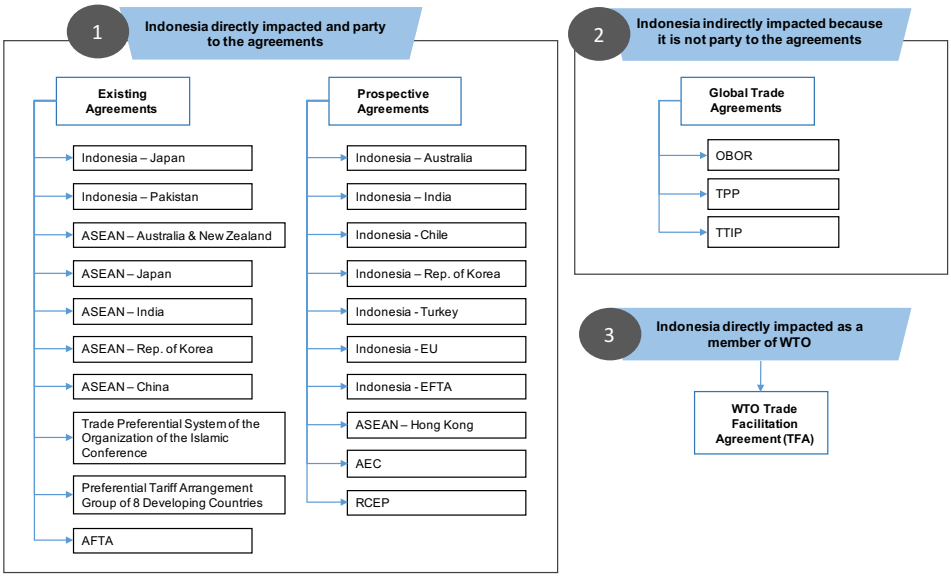

Figure 2.4 Mapping of Indonesia's and Global Trade Policy
Source: Author's elaboration

Chapter 3 The main trade and investment partners of Indonesia

In previous chapter, we looked at all FTAs already in effect and those that could potentially be concluded in the next five years, either for Indonesia directly (through bilateral talks or via ASEAN) or indirectly via global trade initiatives. This information serves as a framework for building our model scenarios. To complete this picture, we also have to look at existing trade and investment flows to see which of the prospective FTAs is likely to matter most, and which ones less. That is why we present the facts of Indonesia's biggest trade and investment partners based on historical records. This information will also feed into our econometric model outlined in Chapter 4. At the end of this chapter, we summarize the insights derived from both perspectives (Chapters 2 and 3) – the prospective FTAs and the historical trade and investment records – because this combination will serve as inputs for our model.

3.1. The main current (merchandise) trade partners for Indonesia

In this analysis, we consider the top five biggest export and import partners of Indonesia. We generate the list by processing the trade data recorded by the UN COMTRADE, as presented in Table 3-1.

China

Being the country with the largest population in the world, China is a massive economic force, which has a significant influence on many countries. With a GDP (PPP) of US$ 21.14 trillion in 2016, China aims to rebalance its economy by innovating and increasing domestic consumption, and becoming less dependent on government investment, exports, and heavy industry (CIA World Factbook, 2017).

When China first announced its accession to the WTO in 2001, it reshaped global trade patterns, including Indonesia. Since then, Indonesia's trade competitiveness, which had actually showed a positive trend since 1998, suffered as China's products entered global markets with significantly lower prices (Patunru and Rahardja, 2015). This event also caused significant changes in Indonesia's trade value composition, particularly from the import side. In 2010, China replaced Singapore as Indonesia's number-one import-origin country, and has remained in that position since then.

The ability of China to produce cheap products has threatened its biggest export markets such as the US and the EU. This triggers countries such as the US to impose trade restrictions to face the influx of Chinese products into its domestic market. There has been general speculation that the US hampered China's efforts to join the TPP before Donald Trump finally pulled US out of the mega-agreement.

Rank	Country	Total Trade Value (2016)	Total Export Value (2016)	% of Total Indonesian Exports	Main Exported Products	Total Import Value (2016)	% of Total Indonesian Imports	Main Imported Products
1	China	47,586	16,786	17%	Electrical and machinery products (inc. data processing equipment), furniture, textiles, apparel, integrated circuits	30,800	23%	Electrical and machinery products, oil and mineral fuels, optical and medical equipment, metal ores, motor vehicles, soybeans
2	Japan	29,086	16,102	10%	Motor vehicles, iron and steel products, semiconductors, auto parts, power generating machinery, plastic materials	12,985	10%	Petroleum, liquid natural gas, clothing, semiconductors, coal, audio and visual apparatus
3	Singapore	25,795	11,246	9%	Machinery and equipment (including electronics and telecommunications), pharmaceuticals and other chemicals, refined petroleum products, food and beverages	14,548	11%	Machinery and equipment, mineral fuels, chemicals, foodstuffs, consumer goods
4	EU	24,965	14,381	9%	Animal or vegetable fats and oils, machinery and appliances, textiles, footwear, plastics and rubber products	10,584	8%	High-tech machinery, transport equipment, manufacturing goods, and chemicals.
5	USA	23,490	16,171	8%	Industrial supplies (organic chemicals), agricultural products (soybeans, fruit, corn), capital goods (transistors, aircraft, motor vehicle parts, computers, telecommunications equipment), consumer goods (automobiles, medicines)	7,319	5%	Agricultural products, industrial supplies (crude oil), capital goods (computers, telecommunications equipment, motor vehicle parts, office machines, electric power machinery), consumer goods (automobiles, clothing, medicines, furniture, toys)
Others		129,220	69,804	46%		59,416	44%	
Total (World)		280,143	144,490	100%		135,653	100%	

Table 3-1 Top Five Main Trade Partners for Indonesia (US$ million)
Source: UN Comtrade (2017)

Japan

Japan is currently facing huge challenges, despite being an advanced economic powerhouse with a GDP of US$ 4.73 trillion (The Telegraph, 2017). A heavy burden of public debt (235% of GDP) and a demographic crisis are threatening Japan's economy; its population has been predicted to drop from 127 million in 2015 to 88 million by 2065. Japan also lacks energy resources, and its industry depends heavily on energy imports.

Indonesia has long had a close relationship with Japan, with strong economic, political, and historical ties. As we can see in the results above, in the last decade, Japan has become Indonesia's main export-destination country, even though the trend has been slowing since 2014. Indonesia is the largest supplier of natural resources to Japan, especially Liquefied Natural Gas (LNG). Indonesia actively exports electronic products to Japan, on which the trade between the two countries is based. Other main export commodities are rubber, metal ores, nickel, and wood. Japan, in common with other East Asian countries, often sees Indonesia and other ASEAN countries as its production base. In addition, Japan is among the five biggest import partners of Indonesia, making up 2% of the total Indonesian import value (UN Comtrade, 2017). Indonesia's main imports from Japan are machinery, vehicles, iron, plastics, and copper.

Singapore

Singapore has the highest GDP per capita in Asia (US$ 87,100 per capita), and is a developed corruption-free economy a with very low unemployment rate. With a population of 5.7 million, Singapore generated US$ 296.6 billion GDP per year in 2016, mostly from the service sector (CIA World Factbook, 2017).

Singapore can be considered the most influential country for the Indonesian trade performance, particularly in the area of seaborne trade. This is mainly due to two reasons. First, because Singapore has grown to be the only developed country in the region, it has attracted more investment flow from other regions of the world. Singapore has evolved to be a representative home for many multinational businesses throughout the world, which is why the flow of goods, services, and investment that enters Indonesia are often claimed as Singaporean, despite the actual country of origin. The trade balance between Indonesia and Singapore in the last decade has consistently been one of deficits, with Indonesia importing more from Singapore.

Second, in the specific context of maritime trade, Singapore acts as the main port hub in the South-East Asian region. Given its strategic location, Singapore is one of the most vigorous port service providers in the chain of international maritime routes. This does not benefit Indonesia because Indonesia needs to transit almost all of its seaborne trade via Singapore, resulting in higher costs and inefficient times.

Indonesia-Singapore trade volume has been declining since 2014. The underperforming domestic economy and weak global growth outlook has signaled an economic contraction within Singapore.

European Union

Given its unique role as the only regional integration body in the world, the EU has a special ability to be counted as one entity for any other country's trade and investment relations, including Indonesia. In this study, the EU refers to the EU-28 countries.
With different levels of economic and technological development, Indonesia and the EU member states are natural trading partners (CSIS, 2013). As we can see by the 2015 trade record, the EU is fourth in the list of Indonesia's main trading partners. Indonesia is also the biggest exporter of crude palm oil to EU, with a 54% share of all EU imports of that commodity

The EU's position should be obvious because it is a combination of many countries. In fact, given the economic size of both parties, the trade level is lower than what could be expected. One example of problems faced by Indonesian products is the implementation of numerous measures on Indonesian exports to the EU, even though being a developing country, Indonesia enjoys the benefit of the EU General Scheme of Preference, under which the EU imposes lower duties for 30% of its total imports from Indonesia (EEAS, 2016). Considering that Indonesia is the largest economy in ASEAN, plenty of the market share is still available (EEAS, 2016), which is why the Indonesia-EU CEPA was launched on July 18, 2016.

USA

With a highly diversified industrial output, the US is the second-largest economy in the world behind China, with a GDP of $18,56 trillion in 2016. Being an energy-intensive economy, a US has pursued oil fracking since 2013, which has led to a fall in oil prices. Although the USA has a population of 323.1 million and large portion of household consumption (68.6%) as a proportion of of GDP, its growth was below 2% in 2016, and the Federal Reserve increased interest rate three times, to 1.25% (CIA World Factbook, 2017).

Indonesia's growing middle class and high level of domestic consumption has led the US to engage in a deeper economic relationship because Indonesia provides many future opportunities for advanced technological products. Indonesia also benefits from the large US population since the US is also a huge market for most of Indonesia's commodities. The main Indonesian exports to the United States are rubber, clothing, electrical machinery, footwear, and fish, while the United States exports aircrafts, machinery, fruits, animal residues, and chemical products to Indonesia.

3.2. The main current investment partners for Indonesia

To summarize the top five biggest investment partners for Indonesia, we will provide a list by processing trade data recorded by the Indonesia Investment Coordinating Board (BKPM), as shown in Table 3.2. It is important to bear in mind that this study only focuses on Indonesia's inward investment, because the reverse is not really significant in terms of value. Carney and Dieleman (2011) argued that the reasons behind Indonesia's lack of multinational enterprises (MNEs) compare to other developing countries such as India and China come down to two reasons. First, there are improper administration procedures in outward investment, which leads to under-reported values in Indonesia's official statistics reports. Second, there are impediments for smaller firms to reach internationalization. Moreover, the largest businesses in the country still prefer to focus on the domestic market.

Rank	Country	FDI Value (2016)	% of Total FDI in Indonesia	Main FDI Sectors
1	Singapore	9,179	32%	Transport, warehousing and telecommunication; crop and plantation; paper industry and printings; food industry; mining
2	Japan	5,401	19%	Vehicles and other transport industry; basic metal industry, metal products, machinery and electronics; basic chemical industry, chemical products and pharmaceuticals; housing, industrial and commercial estate; electricity, gas and water
3	China	2,665	9%	Basic metal industry, metal products, machinery and electronics; electricity, gas and water; mineral non-metal industry; mining; trade and repair
4	EU	2,606	9%	Electricity, gas and water; mining; basic chemical industry, chemical products and pharmaceuticals; food industry; transport, warehousing and telecommunication
5	Hong Kong	1,475	5%	Housing, industrial and commercial real estate; mineral non-metal industry; food industry; vehicles and other transport industry; mining
Others		6,865	24%	
Total (World)		28,964	100%	

Table 3-2 Top Five Main Foreign Direct Investment (FDI) Partners for Indonesia (US$ million)
Source: BKPM (2017)

Singapore

In term of foreign direct investment, Singapore has been the biggest investment-origin country for Indonesia for almost a decade (BKPM, 2017). One of the chief reasons for this is because Singapore often acts as a representative of many multinational

business, so a lot of FDI originally from other countries is claimed because it uses the Singaporean flag.

Going the other way, according to the Singapore Business Federation (2016), Indonesia also becomes the number one destination country for Singaporean investment. Singapore is particularly interested in the abundant cheap labor in Indonesia for use in manufacturing or other labor-intensive industries.

Japan

Aside from trade activity, Japan also plays a major role in the FDI that enters Indonesia. The main sectors of Japan's FDI are infrastructure, power, automobiles, and electronics (Indonesia-Investments, 2016). Additionally, Japan has contributed to Indonesia's development, being a major aid donor through the Japan International Cooperation Agency (JICA).

Currently, under President Widodo, a number of massive infrastructure projects under the Public-Private-Partnership (PPP) model have been offered to foreign direct investors. Together with China, Japan has shown high eagerness to invest in this sector. Moreover, considering the Japanese domestic economy, which is still facing a contraction, combined with Indonesia's potential market growth, Japanese companies are motivated to commit to investing in Indonesia.

China

The Chinese government has committed to give full support for Chinese companies to continue investing in Indonesia. President Xi stated in 2013 that Indonesia would be a target for the Belt and Road initiatives. However, many Chinese businessman still worry about the business climate in Indonesia; the complex procedures for doing business, anti-Chinese sentiment, and the unsupportive government policy are the main concerns for those thinking of investing in the country.

In 2016, China invested $2.67 billion in Indonesia, and 58% of the investment was in machinery and electronics industry (BKPM, 2017). Having a large population and strong domestic consumption, Indonesia is a big potential market for Chinese consumer products such as vehicles, mobile phones, and home appliances.

European Union

Just as for trade, investment by EU countries is also very significant for Indonesia. Currently, there is a huge opportunity for Indonesia to attract more investors from European companies, who could enjoy the benefits of having rapid market growth. EU companies currently employ more than 1.1 million workers in Indonesia (EEAS, 2016).

Since 2010, the Netherlands and the UK are the two biggest FDI-origin countries for Indonesia, even though the value of investment has been volatile in recent years (CSIS, 2013). The Netherlands was the fifth-largest investor in Indonesia 2016, with

a total of US$ 1.47 billion (BKPM, 2017). However, Indonesia was not the main destination of Dutch investments, which amounted to US$ 71 billion. Indonesia only received a 3% share of investment, far lower than Malaysia, which obtained US$ 3.2 million in FDI from the Netherlands (FDIMarket, 2017). This could be because Malaysia had already formed an FTA with EU countries, prompting Indonesia to consider forming an FTA with the EU.

Hong Kong

Indonesia currently offers huge opportunities for foreign investment in various infrastructure projects. With strong support from the government, a series of economic policy packages have been enacted to improve the business climate for investors, and shorten tortuous business procedures. In 2016, Hong Kong capitalized on this policy by pouring US$ 456 million on real estate and industrial areas, after receiving an incentive package from the Indonesian government. As a whole, Hong Kong FDI was US$ 2.24 billion in 2016, which was a 140% increase on the previous year (HKTDC, 2017). These developments in FDI show that the business climate in Indonesia is improving, making the country attractive for Hong Kong businesspeople.

Going forward, Hong Kong will enter a deeper economic cooperation with ASEAN countries including Indonesia; both parties have agreed to form an FTA, which will be signed by the end of 2017.

3.3. Prospective trade and investment partners for Indonesia

From the list of prospective FTAs outlined in Chapter 2, we will now consider a number of countries as potential trade partners for Indonesia in the future. The details are presented in Table 3.3.

[Republic of] Korea

South Korea has technologically advanced industries, which have boosted the country's economy and helped it join the "trillion-dollar club" of world economies in 2004. Although South Korea had the 12th-largest nominal GDP ($ 1.411 trillion) in the world in 2016, it is still facing many economic problems. It must deal with an imbalance in the country's age demographics, and economic concentration in large conglomerates (*chaebols*) (CIA World Factbook, 2017).

Diplomatic relations between South Korea and Indonesia began in 1973, which opened the door for bilateral trade. In terms of trade and FDI, South Korea is one of the top ten partners for Indonesia. With a strong conglomerate business culture, Korean companies such as Lotte, Yong Ma, Hankook Tire, Samsung, LG, Kia Motors, and Hyundai have successfully exploited the huge potential market in Indonesia created by the country's growing middle class. The business potential in Indonesia in the future is still promising and it had led Korea to invest in Indonesia by building more production bases, mostly on the Javanese islands.

Australia

The Indonesian-Australian bilateral relationship has been experiencing vicissitudes. The allegations of spying directed at the former Indonesian president and the execution of a number of Australian drug smugglers are some issues that have strained ties between the two countries.

One notable dispute in the area of economic relations is when Indonesia decided to cut its import quota for live cattle, one of Australia's main export commodity to Indonesia. Australia has since requested that this restriction be loosened. One area of close cooperation has been the Indonesia-Australia Partnership on Food Security in the Red Meat and Cattle Sector, which came as part of the Indonesia–Australia CEPA; it was initiated as one of the efforts to address such concerns in a mutually beneficial agreement (Roberts, 2016). This program continues in deeper cooperation in the cattle farm sector, including giving aid for Indonesia to develop its local cattle breeding industry. Some Indonesian investors have also begun to make outward investment in cattle farms in Australia.

In the context of Indonesia's FDI, Australia mostly invests in coal mining sector through the companies such as Thiess, Linde, and Lahai; and followed by investment in cattle breeding and chemical industry. In the future, Indonesia aims to attract more FDI from Australia in the priority area such as tourism and infrastructure (Topsfield, 2017).

India

Both Indonesia and India are part of the G-20 major economics. India is a predominant country in world's trading records, while Indonesia is the tenth-largest country by purchasing power parity. The trade statistics of Indonesia lists India as one of the top ten trade partner countries. Indonesia has a conspicuous surplus balance in trade with India, where the commodity being exported are usually vegetable oil and mineral fuels. In reverse, Indonesia imported organic chemicals and vehicles from India.

India's performance in the direct investment in Indonesia is not yet entering the top ten list. However, both countries plan to form a bilateral trade agreement; hoping for the better economic cooperation in various aspects, including investment. Barman (2015) specifically mentioned that India investment need to go deeper in the area of infrastructure and energy to maximize the potential of economic cooperation.

Chile

Trade records show that Indonesia mostly targets East Asia countries as main trading partners, and has not focused much on other parts of the world such as South America. To date, the trade value between Indonesia and Chile is relatively small. Against this background, a free trade agreement between Indonesia and Chile can be seen as both countries seeking to expand their market access on the other side of the world. Indonesia could benefit from opening markets in South Americas countries,

starting with Chile, while Chile could find it easier to enter the South East Asian market after starting with Indonesia.

Likewise, there is not a significant amount of investments from Chile. However, through the formation of economic cooperation via deep FTAs between Indonesia and Chile, more direct investment is likely.

Turkey

Like India, Indonesia has large trade surpluses with Turkey. However, the trade agreement between Indonesia and Turkey features a declining share of Indonesian crude palm oil (CPO) exports to Turkey, mainly because Turkey had signed a preferential trade agreement with Malaysia, which curtails the share of Indonesia's CPO (Siahaan, 2014). In any prospective FTA, Turkey could reasonably expect to gain a bigger market share for its wheat exports to Indonesia in return.

There would also be an opportunity for Turkey to expand its market penetration, particularly in halal food and Muslim clothing, because the countries share the same religious majority. Both countries are also members of the OIC, which may open an opportunity to cooperate in a wider scope.

EFTA countries

The EFTA consists of four European countries that are not EU members: Switzerland, Norway, Iceland, and Liechtenstein. Of these countries, only Switzerland and Norway have an active economic relationship with Indonesia. Any future agreement prepared between Indonesia and EFTA countries can be expected to increase the flow of trade in some of Indonesia's trade priority sectors such as textiles and footwear products.

Another reason why Indonesia wants to form an FTA with the EFTA is because Indonesia is facing a threat to its FDI, given that neighboring rivals such as Vietnam and Malaysia are more friendly in terms of market export access. Forming an FTA could help to create a more conducive business climate, but the Indonesian government is cautious not to jeopardize the status of its domestic producers that would result from the lack of competitiveness of Indonesian products.

Moreover, the agreement aims to forge a deeper cooperation in areas of expertise with the EFTA countries, such as with Switzerland for cocoa products, Iceland for geothermal energy, and Norway for its fishing industry (EFTA, 2016).

Rank	Country	Total Trade Value (2016)	Total Export Value (2016)	% of Total Indonesian Exports	Main Exported Products	Total Import Value (2016)	% of Total Indonesian Imports	Main Imported Products	FDI Value (2016)	% of Total FDI in Indonesia	Main FDI Sectors
1	Rep. of Korea	13,682	7,008	4.8%	Rubber, electrical machinery, metal ores, organic chemicals, and wood pulp	6,675	4.9%	Meat, dairy produce, live trees, cereals, and vegetable plaiting	1,066	0.0%	Basic metal industry, metal products, machinery and electronics; mining; rubber industry, rubber products and plastics; textile industry; electricity, gas and water
2	Australia	8,460	3,199	2.2%	Steel, mineral fuels, machinery, wood, and paper	5,261	3.9%	Mineral fuels, cereals, live animals, sugars, meat, and machinery	175	0.0%	Mining; basic chemicals, chemical products and pharmaceuticals; electricity, gas and water; basic metals industry, metal products, machinery and electronics; other type of services
3	India	12,967	10,094	7.0%	Vegetable oils, mineral fuels, ores, rubber, and chemical products	2,873	2.1%	Organic chemicals, machinery, vehicles, steel, and oil seeds	55	0.0%	Trade and repair; Mining; basic metals industry, metal products, machinery and electronics; basic chemicals, chemical products and pharmaceuticals; electricity, gas and water; electricity, gas and water; Other services;
4	Chile	227	144	0.1%	Footwear, machinery, articles of apparel, electronics, and rubber	83	0.1%	Copper, pulp of wood, fruit, residues from food industries, and vegetable oil	0	0.0%	Hotel and restaurant
5	Turkey	1,335	1,024	0.7%	Staple fibres, filaments, rubber, paper, and electronics	311	0.2%	Tobacco, machinery, milling products, electronics, and inorganic chemicals	3	0.0%	Trade and repair; other services; forestry; hotel and restaurant; food industry

Rank	Country	Total Trade Value (2016)	Total Export Value (2016)	% of Total Indonesian Exports	Main Exported Products	Total Import Value (2016)	% of Total Indonesian Imports	Main Imported Products	FDI Value (2016)	% of Total FDI in Indonesia	Main FDI Sectors
6	EFTA countries										
	- Switzerland	2,924	2,200	1.5%	Precious stones, essential oils, optical equipment, article of apparels, and footwear	724	0.5%	Machinery, organic chemicals, pharmaceutical products, optical equipment, and electronics	347	0.0%	Basic chemicals industry, chemical products and pharmaceutical; non-metal minerals; food industry; basic metal industry, metal products, machinery and electronics
	- Norway	410	76	0.1%	Electronics, steel, wood, article of apparel, and chemical products	334	0.2%	Machinery, fertilizers, fish, chemical products, and optical equipment	16	0.0%	Basic chemicals industry, chemical products and pharmaceutical; basic metal industry, metal products, machinery and electronics; mining; trade and repair; services
	- Iceland	2	1	0.0%	Rubber, furniture, coffee, tea, and spices	1	0.0%	Pharmaceutical products, plastics, vegetable oils, and electronics	-	0.0%	Vehicles and other transport industry
	- Liechtenstein	-	-	0.0%		-	0.0%		-	0.0%	Trade and repair
Total		**280,143**	**144,490**	**100.0%**		**135,653**	**0.0%**		**28,964**	**100.0%**	

Table 3-3 Potential Trade and Investment Partners for Indonesia based on Prospective FTAs
Source: Author's elaboration from various sources

3.4. Summary

To conclude, we will summarize the list of countries that are likely to experience the impact of prospective FTAs affecting Indonesia, whether positively or negatively, in Table 3-4. On this list, we treat Malaysia as a separate entity, deeming Malaysia an ASEAN country that has a significant trade value with Indonesia. In addition to being one of Indonesia's main trading partners, Malaysia and Indonesia often compete with each other for potential export markets for their commodities such as Pakistan and Turkey, due to the similarity of the goods and commodities they produce.

Henceforth, we use this list as the input in the model we employ in this study. In addition, we map the countries to the related FTAs or economic cooperation agreements they are suited to, according to our investigation in Chapter 2 (Table 3-5).

	Country	Rank as Trade Partner	Rank as Investment Partner	FTA/Cooperation Agreement already in place: yes/no?	Current on-going negotiation
1	China	1	3	Yes (via ASEAN)	Yes (RCEP)
2	Japan	2	2	Yes (bilateral & via ASEAN)	Yes (RCEP)
3	Singapore (part of ASEAN)	3	1	Yes (AFTA)	Yes (RCEP, AEC)
4	EU	4	4	No	Yes (bilateral)
5	United States	5	7	No	No
6	Malaysia (part of ASEAN)	6	9	Yes (AFTA)	Yes (RCEP, AEC)
7	Republic of Korea	8	10	Yes (via ASEAN)	Yes (bilateral)
8	Australia	10	17	Yes (via ASEAN)	Yes (bilateral, RCEP)
9	India	9	25	Yes (via ASEAN)	Yes (bilateral, RCEP)
10	Hong Kong	17	5	No	Yes (via ASEAN)
11	Chile	57	94	No	Yes (bilateral)
12	Turkey	32	44	No	Yes (bilateral)
13	EFTA Countries				
	Switzerland	21	12	No	Yes (via EFTA)
	Norway	47	32	No	Yes (via EFTA)
	Iceland	179	-	No	Yes (via EFTA)
	Liechtenstein	-	109	No	Yes (via EFTA)

Table 3-4 List of Country as Model Input
Source: Author's elaboration

Country	Indonesia-Initiative Trade Policy										Global-Affecting Trade Policy			WTO-TFA
	Indonesia-Australia CEPA	India-Indonesia CECA	Indonesia-Chile FTA	Indonesia-Rep.of Korea FTA	Indonesia-Turkey CEPA	Indonesia-EU CEPA	Indonesia-EFTA CEPA	ASEAN-Hong Kong FTA	AEC	RCEP	OBOR	TPP	TTIP	
Indonesia	x	x	x	x	x	x	x	x	x	x	x			x
China										x				x
Japan										x		x		x
Singapore (part of ASEAN)								x	x	x	x	x		
United States													x	x
Malaysia (part of ASEAN)								x	x	x	x	x		x
Republic of Korea				x						x		x		x
Australia	x									x		x		x
India		x								x	x			x
Hong Kong								x						x
Chile			x									x		x
Turkey					x						x			x
Netherlands (part of EU)						x								
EFTA Countries							x						x	x

Table 3-5 Map of country and related FTAs / Economic Cooperation from Indonesia's perspective
Source: Author's elaboration

Chapter 4 Methodology, Data and Scenario Development

This chapter will answer the fourth sub-research question: what is the best methodological approach to measure the impact of changing international trade agreements on Indonesian seaborne trade, and how important is logistical performance in ports as an enabler of bottlenecks to this impact? In section 4.1, we present some possible models to be used in measuring the effects of the economy and trade, which finally led us to employ the GSIM model. We also present the methodological approach used to convert the change in trade value (US$) as one of GSIM outputs into volumes by applying the trade conversion factors and the current shares of containers and bulk transport. In section 4.2, we provide the data that will be used in the GSIM model. The last section, 4.3, explains about the scenario developments.

4.1. Introduction: choosing the quantitative methodological approach

In order to measure the impact of changing international trade agreements on the Indonesian economy and trade, we need to employ a model that can provide the transport flow as the main output. There are several models than could be adopted to do this, each with different strengths and weaknesses. We consider each of the possible models, and choose the one that best fits our research circumstance.

One of the most important criteria in selecting the model in this research is its ability to analyze the effect of a trade policy. There are at least two ways to perform such an analysis: the *ex-ante* and the *ex-post* approaches. The *ex-ante* simulates a change in trade policy, resulting in a projection of the future effects on a set of economic variables. The *ex-post* approach uses historical data to analyze the effects of a past trade policy (Piermartini and Teh, 2005).

One of the most widely used models to measure the impact of an FTA is the gravity model. Introduced by Tinbergen (1962), the model uses the same principles as Newton's universal law of gravity to represent patterns of bilateral aggregate trade flows between two countries. According to this model, bilateral trade is related positively to economic size, measured by Gross National Product (GNP), and negatively to the distance between countries (Chaney, 2011). The gravity equation has been one of the most robust models in economic empirical findings.

Some discrepancies have arisen over the years with regards to the ability of the gravity model to define parameters, as used in Newton's original formulation (Mele and Baistrocchi, 2012). Romalis (2010) outlines further weaknesses of the model, such as: it does not determine endogenously which goods are produced by which country; it does not provide information about how trade affects factor incomes; and it requires numerous ad hoc adjustments to fit the data. Most importantly, the gravity

model needs a policy that has already been implemented over in a relatively long period before it can explain the effects; in other words, it needs historical data (the *ex-post* approach). This makes the model less relevant to this research, which requires an *ex-ante* assessment for the Indonesian economy as the impact of changing FTAs.

To deal with the typical trade policy simulation, an economic analysis can be completed using a General Equilibrium (GE) or Partial Equilibrium (PE) analysis. The GE analysis takes into account the links across all sectors of an economy: countries, governments, firms, and households. It can explain the link between what factors of production earn and what households spend, hence can be used to determine income. The PE analysis usually focuses on one or a specific sector of the economy, using the assumption that there is only a small or no impact of this sector to the economy (or vice versa) (Piermartini and Teh, 2005).

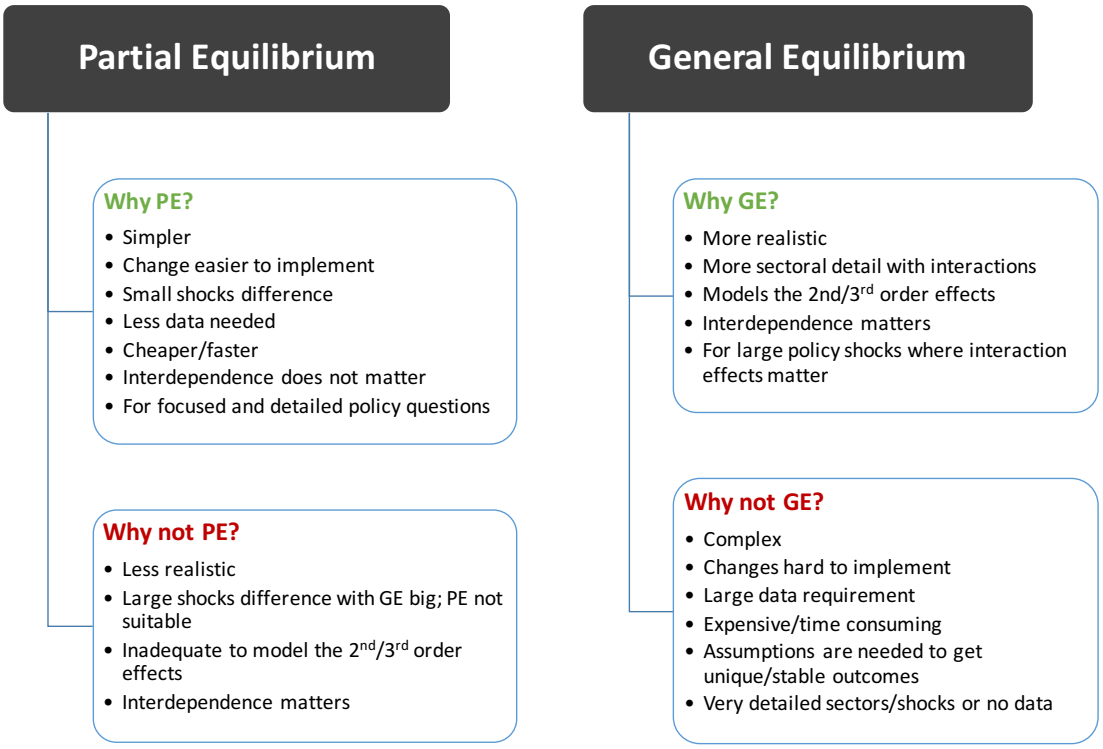

Figure 4.1. Partial vs General Equilibrium
Source: (Berden, 2017)

An example of a GE analysis is the Computable General Equilibrium (CGE) model. The CGE model uses computer power to calculate the effect of a change in trade policy. This model is attractive because it can provide numerically precise answers, while at the same time can guarantee the theoretical consistency of the results (Piermartini and Teh, 2005). Narayanan et al. (2015) state that the CGE model is the most comprehensive approach to modelling mega-regional trade agreements because it can be used for multi-sector and multi-region trade analysis. This model

possesses sufficient structural features to capture the core area of mega-regional trade agreements such as investment, services, and new “behind the border issues,” as well as covering tariffs as one of the traditional areas of trade liberalization.

However, given the complexity of CGE model, it is typically necessary to obtain a large amount of data. It also estimates results at aggregate levels, so is complicated to apply in the case of multiple regions and sectors. Moreover, CGE generates too many unnecessary possibilities (HM Revenue & Customs, 2013).

The general purpose PE analysis, on the other hand, is developed to simulate the impact of trade on specific sectors. One example of a PE analysis model is the Global Simulation Model (GSIM). In accordance with the limitations of the observed sectors, compared to the CGE model, GSIM possesses as its main advantage less complexity in terms of data and computational requirements. However, it is still able to provide relatively rapid and comprehensive results by assessing the impacts of policy changes, particularly in the form of trade, welfare (producer surpluses, consumer surpluses, and changes in tariff revenues), and output effects. These results will accurately answer the main question to be addressed in this paper.

The model is also compatible with our research circumstance, considering the change in tariffs and NTMs, the possible results of the FTAs around Indonesia will not be very large. Without ruling out the limitations of GSIM, we can still obtain an insightful conclusion that encompasses the impacts of trade policy changes on multiple levels of observation (i.e. the country, regional, and global levels). In addition, the simpler method of GSIM is very convenient when applied in conditions with limited data availability, and it is preferred because we look at the exogenous impact of trade agreements on Indonesia, partly in combination with current levels of logistics performance. For these reasons, we chose the GSIM as the trade simulation tool in our research.

A more detailed explanation regarding GSIM formulation and the step-by-step process will be presented in the next section.

4.2. The Global Simulation Model (GSIM)

The GSIM was introduced by Joseph Francois and H. Keith Hall in 2002. Being a part of PE analysis, GSIM is industry-focused, but is also global in scope. The GSIM aims to provide simple yet flexible frameworks for detailed analyses of trade policy, using the trade flow and tariffs obtained from the TRAINS and WITS datasets. Hence, GSIM shares the same goals as its predecessor, SMART, stressing global rather than import markets (Francois and Hall, 2003).

GSIM uses national product differentiation as a basic assumption, meaning that imports are imperfect substitutes for each other (Francois and Hall, 2003). The

elasticities for substitution across products from different sources and demand in aggregate are maintained constant. The basic computational structure of the GSIM comprises the development of relevant elasticities (own and cross prices) and its inclusion in global supply and demand definitions, as well as market-clearing conditions.

Elasticities

The underlying own and cross price demand elasticities is an essential element in the GSIM model. To obtain the values, the model assumes that within each importing country *v*, import demand within product *i* of goods from country *r* is a function of industry prices and total expenditure in the category (Francois and Hall, 2003)

(1) $$M_{(i,v),r} = f(P_{(i,v),r}, P_{(i,v),s\,r}, y_{(i,v)})$$

Where,

$M_{(i,v),r}$ = import demand of country *v* for product *i* from country *r*

$y_{(i,v)}$ = total expenditure on imports of *i* in country *v*

$P_{(i,v),r}$ = internal price for goods from region *r* within country *v*

$P_{(i,v),s\,r}$ = price of other varieties

By differentiating equation (1), applying the Slutsky decomposition of partial demand, and taking advantage of the zero homogeneity property of Hicksian demand, the following equations are derived (Francois and Hall, 2003):

(2) $$N_{(i,v),(r,s)} = \theta_{(i,v),s}(E_m + E_s)$$

(3) $$N_{(i,v),(r,r)} = \theta_{(i,v),r}E_m - \sum_{s\,r} \theta_{(i,v),s}E_s = \theta_{(i,v),r}E_m - (1 - \theta_{(i,v),r})E_s$$

Where,

$N_{(i,v),(r,s)}$ = cross-price elasticity

$N_{(i,v),(r,r)}$ = own price demand elasticity

$\theta_{(i,v),s}$ = expenditure share of good *i* in country *v* from exporting country *s*

$\theta_{(i,v),r}$ = demand expenditure share (at internal prices)

E_s = elasticity of substitution

E_m = elasticity of aggregate import demand in country *v*

National demand and supply equations

After defining the own-price ad cross-price elasticities (Francois and Hall, 2003), we then define the demand for national product varieties. Additionally, national supply functions are needed to specify full market clearing.

The next step is linking the export price received by exporters on world markets and the domestic price of the same good, as follows:

(4) $$P_{(i,v),r} = \left(1 + t_{(i,v),r}\right) {P_{i,r}}^{*} = T_{(i,v),r} {P_{i,r}}^{*}$$

Where,

$T = 1 + t$ = the power of the tariff (the proportional price markup achieved by tariff *t*)

${P_{i,r}}^{*}$ = export price received by exporter *r* on world market

$P_{(i,v),r}$ = internal price for the same good

The export supply to world markets is defined as being a function of the world price *P**:

(5) $$X_{i,r} = f\left({P_{i,r}}^{*}\right)$$

By differentiating equations (1), (4), and (5) and manipulating the results, the following results are derived:

(6) $$\hat{P}_{(i,v),r} = {\hat{P}_{i,r}}^{*} + \hat{T}_{(i,v),r}$$

(7) $$\hat{X}_{i,r} = E_{X(i,r)} {\hat{P}_{i,r}}^{*}$$

(8) $$\widehat{M}_{(i,v),r} = N_{(i,v),(r,r)} \hat{P}_{(i,v),r} + \sum_{s\,r} N_{(i,v),(r,s)}\, \hat{P}_{(i,v),s}$$

where ^ denotes a proportional change, so that $\hat{x} = \frac{dx}{x}$

One important note is that while Francois and Hall (2003) center the discussion in the text around production for export, domestic production for domestic consumption can also be included in the framework. When data on domestic production is available, the effects of domestic industry can be included via the home market trade modelling in addition to foreign trade by using domestic demand structure and a non-nested import.

Global equilibrium conditions

To reach an applicable model defined in term of world prices, Francois and Hall (2003) substituted equations (6), (2), and (3) into (8), bringing over import markets, and yielding the below equation:

(9) $$\begin{aligned} \widehat{M}_{i,r} &= \sum_v \widehat{M}_{(i,v),r} = \sum_v N_{(i,v),(r,r)}\, \hat{P}_{(i,v),r} + \sum_v \sum_{s\,r} N_{(i,v),(r,s)}\, \hat{P}_{(i,v),s} \\ &= \sum_v N_{(i,v),(r,r)} \left[{P_r}^{*} + \hat{T}_{(i,v),r}\right] + \sum_v \sum_{s\,r} N_{(i,v),(r,s)} \left[{\hat{P}_s}^{*} + \hat{T}_{(i,v),s}\right] \end{aligned}$$

Equation (9) then is set as equal to the modified version of equation (7), which results in equation (10) as the core equation for the system implemented in the spreadsheets.

(10) $\widehat{M}_{i,r} = \hat{X}_{i,r} \rightarrow E_{x(i,r)} \hat{P}_{i,r}^{*}$

$= \sum_v N_{(i,v),(r,r)} \hat{P}_{(i,v),r} + \sum_v \sum_{s\, r} N_{(i,v),(r,s)} \hat{P}_{(i,v),s}$

$= \sum_v N_{(i,v),(r,r)} \left[P_r^{*} + \hat{T}_{(i,v),r}\right] + \sum_v \sum_{s\, r} N_{(i,v),(r,s)} \left[\hat{P}_s^{*} + \hat{T}_{(i,v),s}\right]$

Where,

$\hat{P}_{i,r}^{*}$ = internal price for goods from country *r*

E_x = elasticity for export supply

For any set of *R* trading countries, equation (10) can be used to define *S*≤*R* global market clearing conditions (for *R* exporters).

Welfare and revenue effects

The GSIM concept provides basic sets of prices to calculate national welfare and revenue effects. The price and quantity effects are combined with partial equilibrium measures of the change in producer surplus ΔPS and net consumer surplus $\Delta CS_{i,v}$ as crude measures of welfare effects (Francois and Hall, 2003).

Equation (11) represents the measurement of producer surplus:

(11) $\Delta PS = R_{(i,r)}^{0} \hat{P}_{(i,r)}^{*} + {}^{1}/_{2}\, R_{(i,r)}^{0} \hat{P}_{(i,r)}^{*} \hat{X}_{i,r} = \left(R_{(i,r)}^{0} \hat{P}_{(i,r)}^{*}\right)\left(1 + \frac{E_{x(i,r)} \hat{P}_{i,r}^{*}}{2}\right)$

Where,

$R_{(i,r)}^{0}$ = benchmark export revenues valued at world prices

Next, to calculate the consumer surplus, first, the functional form of composite goods is defined from the below equation:

(12) $Q_{i,v} = A_v \left[\sum_{i=1}^{r} \gamma_{(i,v),r} M_{(i,v),r}^{\rho}\right]^{1/\rho}$

Because the price of composite goods is defined as 1 in the benchmark equilibrium, the proportional change in the price of *Q* will be:

(13) $\hat{P} = \frac{dP}{P} = \sum_{i=1}^{r} \theta_{(i,v),r} \hat{P}_{(i,v),r} = \sum_{i=1}^{r} \theta_{(i,v),r} \left[\left(1 + \hat{P}_{i,r}^{*}\right) \frac{T_{1,(i,v),r}}{T_{0,(i,v),r}}\right]$

Finally, the change in consumer surplus is defined by the change between the demand for the composite goods and the composite good price as perceived by consumers (Francois and Hall, 2003). This is represented by the equation (14):

(14) $\Delta CS_{(i,v)} = \left(\sum_r R_{(i,v),r}^{0}\, T_{(i,v),r}^{0}\right)\left({}^{1}/_{2}\, E_{M,(i,v)} \hat{P}_{(i,v)}^{2}.\, sign\left(\hat{P}_{(i,v)}\right) - \hat{P}_{(i,v)}\right)$

where $\hat{P}_{(i,v)} = \sum_r \theta_{(i,v),r} \hat{P}_r^{*} + \hat{T}_{(i,v),r}$

Consumer surplus is measured by considering the composite import demand curve, with $P_{(i,v)}$representing the price of composite imports, and $R^0_{(i,r)}.T^0_{(i,v),r}$representing initial expenditure at internal prices (Francois and Hall, 2003). To measure the approximation of welfare changes, we can use the combination of change in producer surplus, consumer surplus, and import tariff revenues.

4.3. Data

Before arriving at the model execution, we previously constructed the scenarios by doing a qualitative analysis of the all recent FTAs affecting Indonesia. To perform this step, we perform a desk-research to elicit the most essential information, so the possible scenarios can be established. The information is extracted from reliable sources such as the related FTA documents, previous research, working papers, and various news websites.

We look at the following country disaggregation in the GSIM model: Indonesia, Singapore, Malaysia, Japan, China, Republic of Korea, the US, European Union, Australia, India, Hong Kong, Chile, Turkey, New Zealand, EFTA, the rest of ASEAN, and the rest of the world. To determine the most essential trade partners for Indonesia, we use and process the 2016 trade data obtained from UN-COMTRADE and ITC Market Analysis. For the top investment partners of Indonesia, we employ the 2016 FDI data as recorded by the Indonesian Investment Coordinating Board (BKPM).

When applying the model, some input variables are needed such as the latest trade value data, elasticities, initial bilateral import tariffs, changes in bilateral import tariffs (percentage), and change in NTMs (percentage). The latest trade value data (from 2015) is taken from UN-COMTRADE, while the bilateral initial import tariff data is captured from the 2017 World Integrated Trade System (WITS) database developed by WTO. Armington elasticities are taken from Francois and Hall (2003) and Berden (2016). Changes in bilateral import tariffs and NTMs (percentage) are stipulated based on Berden et al (2009), ECORYS (2009), and study on Indonesia's bilateral trade agreements done by Chandra (2009). We also look at the previous trade agreements that already concluded.

In our trade conversion model, we employ the calculation of commodity share based on data obtained from Indonesian Bureau of Statistics (BPS), ITC Trade Market Analysis, and complemented by data from ECORYS (2015).

There are two major challenges in collecting the data used in this study. The first is collecting the bilateral trade value data for GSIM inputs. The 2016 data from some countries among our trade statistics providers are not yet available, so we use 2015 data instead. Second, when plugging the input data into the model (tariffs, NTMs, and region-to-region bilateral trade flow), especially when one country is involved in more

than one FTA, it needs an extra rigorous effort to reach maximum accuracy of the model.

4.4. Scenario Development

Through the extensive literature research outlined in Chapters 2 and 3, we have arrived at the summary of what potential FTAs and countries should pay attention to, in the context of Indonesia, in the next five years. Thus, we can develop our framework given the situation currently in place in the world and plug it in to the GSIM model through some possible prospective Indonesian and global trade policy scenarios. To start with, one should bear in mind that the simulation done in this study considers the future prospects of Indonesia amidst global dynamic preferences and global trade policy directions; hence, we focus on the prospective FTAs as listed in Figure 2.4 in Chapter 2. We also take into account the existing FTAs in setting the initial conditions.

While developing our model, we mainly make use of two policy tools provided by the GSIM model: the tariff and non-tariff measures variables. When setting up the tariff variable, we define the initial condition from the existing situation with the in-effect FTAs Indonesia has complied with. Afterwards, with some possible scenarios that could happen in the future, we can theorize a number of reductions in such tariffs towards particular potential trade and investment partners.

The second tool we utilize in our model is the non-tariff measures variable. An FTA between countries normally includes a wider range of trade enablers, encompassing not only tariffs but also various aspects such as market access, customs procedures, cooperation in setting a better business environment through legal protection, and deeper economic cooperation, which eventually leads to a lower non-tariff measure. This type of agreement goes deeper, hence the prediction of its results will be highly deliberated from the economic and political relationships between the member candidates.

To envisage the possible impacts of Indonesia's and the world's trade policies, we apply a gradual analysis as viewed from Indonesia's level of both eagerness and competence to build any form of FTA. In this context, we start our concept by considering only possible agreements involving Indonesia as a direct member in our first scenario. Next, we investigate a broader prospect that may happen in the future by adding a number of global trade policies to our analysis. These global trade policies may generate impacts on Indonesia's trade flow, despite the fact that Indonesia is not directly involved as a member. Additionally, in the last scenario, we incorporate the influence of global trade facilitation set up by the WTO.

4.4.1. Scenario 1: Indonesia prospective trade policy scenario

Because the existing Indonesian FTAs (either signed bilaterally or through ASEAN) are in force, their effects are already factored into the baseline data; that is why we focus on prospective FTAs. In Scenario 1, we look at the ten FTAs that Indonesia is currently negotiating and analyze what they mean in terms of potential economic and trade effects. First, we run each of the FTAs separately in the GSIM to see which is likely to generate the biggest impact for Indonesia's total welfare, trade, output, and prices; these are Scenarios 1A1, 1A2, 1A3, etc. All Scenarios 1A are ambitious because we focus on the relative effects between them, not on the level of ambition (which we will look at in Scenario 1B). We then look at the combined effect of all potential Indonesian FTAs to get an idea of the total expected effect of Indonesia's trade policy (if successful). For this Scenario 1B, we run an ambitious and a modest scenario: 1B1 and 1B2.

	FTA	Simulation Parameters
1A1	Indonesia – Australia Comprehensive Economic Partnership Agreement (IA – CEPA)	• Full tariff elimination • 5% NTM cut overall • Third countries: no change
1A2	India – Indonesia Comprehensive Economic Cooperation Arrangement (II – CECA)	• Full tariff elimination • 5% NTM cut overall • Third countries: no change
1A3	Indonesia – Chile Free Trade Agreement	• Full tariff elimination • 5% NTM cut overall • Third countries: no change
1A4	[Republic of] Korea – Indonesia Free Trade Agreement	• Full tariff elimination • 5% NTM cut overall • Third countries: no change
1A5	Indonesia – Turkey Comprehensive Economic Partnership Agreement (IT – CEPA)	• Full tariff elimination • 5% NTM cut overall • Third countries: no change
1A6	Indonesia – European Union Comprehensive Economic Partnership Agreement (IE – CEPA)	• Full tariff elimination • 7% NTM cut overall • Third countries: no change
1A7	Indonesia – European Free Trade Association Comprehensive Economic Partnership Agreement (Indonesia – EFTA CEPA)	• Full tariff elimination • 7% NTM cut overall • Third countries: no change
1A8	ASEAN – Hong Kong, China FTA (AHKFTA)	• Full tariff elimination • 5% NTM cut overall • Third countries: no change
1A9	ASEAN Economic Community (AEC)	• Full tariff elimination • 5% NTM cut overall

	FTA	Simulation Parameters
		• Third countries: no change
1A10	Regional Comprehensive Economic Partnership (RCEP)	• 75% tariff elimination • 2% NTM cut overall • Third countries: 5% change

Table 4-1 Tariff and NTM reduction for scenario 1A1 – 1A10

In scenario 1B, we then run all scenarios 1A1 – 1A10 **simultaneously** using the parameters of each scenario 1A (which had been simulated in previous step). To make it clear, table 4-2 provides the information about GSIM countries and which prospective FTAs they are included in.

	# of prospective FTAs involving Indonesia	Prospective FTAs
Singapore	3	ASEAN Hong Kong China FTA, AEC, RCEP
Malaysia	3	ASEAN Hong Kong China FTA, AEC, RCEP
Japan	1	RCEP
China	1	RCEP
South Korea	2	Indonesia – Rep. of Korea FTA, RCEP
USA	-	-
EU	1	Indonesia – EU CEPA
Australia	2	Indonesia – Australia CEPA, RCEP
India	2	Indonesia – India CECA, RCEP
Hong Kong	1	ASEAN – Hong Kong FTA
Chile	1	Indonesia – Chile FTA
Turkey	1	Indonesia – Turkey CEPA
New Zealand	1	RCEP
EFTA	1	Indonesia – EFTA CEPA
Rest of AEC	3	ASEAN Hong Kong China FTA, AEC, RCEP
ROW	-	-

Table 4-2 Indonesia's Prospective FTAs

	FTA	Simulation parameters Modest Scenario (1B1)	Simulation Parameters Ambitious Scenario (1B2)
1B	Overall Indonesian trade policy scenario – 1A1 – 1A10 combined	1A1 – 1A5, 1A8, 1A9: • 75%l tariff elimination • 2% NTM cut overall • Third countries: no change 1A6, 1A7 • 75% tariff • 3.5% NTM cut overall	1A1 – 1A5, 1A8, 1A9: • Full tariff elimination • 5% NTM cut overall • Third countries: no change 1A6, 1A7 • Full tariff • 7% NTM cut overall • Third countries: no change

	FTA	Simulation parameters Modest Scenario (1B1)	Simulation Parameters Ambitious Scenario (1B2)
		• Third countries: no change 1A10 • 50% tariff elimination • 1% NTM cut overall • Third countries: no change	1A10 • 75% tariff elimination • 2% NTM cut overall • Third countries: 5% change

Table 4-3 Tariff and NTM reduction for scenario 1B1 – 1B2

4.4.2. Scenario 2: All prospective Indonesia's trade policy and the global trade policy

Having scrutinized the recent development of the world's trade policy movement, we conclude that there are three mega-regional trade agreements in the region around Indonesia that may potentially impact the country's trade performance: TTIP, TPP, and OBOR. Thus, we continue our simulation process by taking into account these agreements using the below parameters:

Mega-regional FTAs	Modest Scenario (2B1)	Ambitious Scenario (2B2)
One Belt One Road (OBOR) initiative	For main partners: • 50% tariff reduction • 1.5% NTM cut overall For important partners: • 25% tariff reduction • 1.25% NTM cut overall For third countries: no change	For main partners: • 75% tariff reduction • 3% NTM cut overall For important partners: • 50% tariff reduction • 2% NTM cut overall For third countries: 10% change
Trans Pacific Partnership (TPP)	• 75% tariff reduction • 3% NTM cut overall • Third countries: no change	• 97% tariff reduction • 5% NTM cut overall • Third countries: 10% change
Transatlantic Trade and Investment Partnership (TTIP)	• 97% tariff reduction • 4% NTM cut overall • Third countries: no change except for Turkey and EFTA	• Full tariff reduction • 8% NTM cut overall • Third countries: 10% change, except for EFTA 25%

Table 4-4 Tariff and NTM reduction for scenario 2B1 – 2B2

In addition to the two overall Scenarios under Scenario 1: the ambitious and modest one, we add the mega-regional effect to see in addition to the two overall scenarios under Scenario 1, the ambitious and the modest one, we add the mega-regional effect to examine the combined impact on Indonesia of its own trade policy (via bilateral or ASEAN) and the mega-regionals.

Specific to OBOR parameter-setting, we need to identify which countries have the deeper connection with China's OBOR and which ones do not. Hence, we use a

previous study by Ma (2016) and categorized the countries we consider in our model in the following manner. The main partner countries are Singapore, Malaysia, and Turkey, while the important partners are Indonesia, India, and the rest of the AEC countries (Brunei Darussalam, Cambodia, Lao PDR, Myanmar, Philippines, and Vietnam. The rest are categorized as third countries.

4.4.3. Scenario 3: All prospective Indonesia and global plus WTO-TFA trade policy scenario

This is the last part in our model simulation section. We run the simulation by adding the most recent progress of the WTO TFA, which came into force on February 22, 2017. According to our previous investigation in Chapter 2, Indonesia has not yet ratified the conclusion, but it has been stated that Indonesia will do so in the near future. We then based our simulation on this phase by assuming all countries included in our study – all are WTO members – will officially ratify it. We group our countries into three categories: OECD countries, upper-middle countries, and lower-middle countries. This way, we can apply the specific parameters of the NTM reduction taken from the OECD (2015) report.

Just as in the previous phase, we also run our model in ambitious and modest scenario.

WTO – TFA	For both Ambitious Scenario (3B1) and Modest Scenario (3B2)
OECD Countries: Australia, Japan, Republic of Korea, US, Chile, Turkey, New Zealand and EFTA countries (Switzerland, Norway and Iceland)	• No change in tariff • 11.8% NTM cut in customs procedures costs – which are around 10% of costs overall
Upper – middle income countries: Singapore, Hong Kong and EU countries	• No change in tariff • 14.6% NTM cut in customs procedures costs – which are around 10% of costs overall
Lower – middle income countries: Indonesia, Malaysia, China, India and rest of AEC countries (Brunei Darussalam, Cambodia, Lao PDR, Myanmar, Thailand and Vietnam)	• No change in tariff • 17.4% NTM cut in customs procedures costs – which are around 10% of costs overall

Table 4-5 *Tariff and NTM reduction for scenario 3B1 – 3B2*

4.5. *Trade Impact Conversion*

4.5.1. Introduction

The final elaboration in this research is dine to define the impact of changing FTAs on Indonesia's seaborne trade. This section will demonstrate the methodological

approach taken to translate trade value as GSIM results into the final volume impact on Indonesian ports.

To do so, we implement the trade conversion model through three consecutive steps, each one with a particular goal. In step 1, we aim to find out the share of Indonesia's seaborne trade. In step 2, we determine the total seaborne trade in measured in tonnage. In the last step, we provide the total number of containers and bulks being shipped so we can describe the impact of changing FTAs on Indonesia's global shipping volume, to achieve one of the final objectives in this research.

4.5.2. The Trade Conversion Model

To engage with this concern, we will use a tool previously used in research by ECORYS (2015) In this research, ECORYS analyzed the impact of the Canada-EU Trade Agreement (CETA) on ports throughput in Eastern Canada, encompassing not only trade value but also the number of containers and tonnage. ECORYS (2015) estimated that CETA, along with the potential TTIP scheme between EU and Canada, may bring about additional 1.5 million tons of cargo to Eastern Canadian ports, as well as 235,000 TEU containers each year.

Step 1: Converting the total trade value to the seaborne trade flow

For each scenario, the GSIM model provides us with changes in bilateral total trade value. To reveal the impact on seaborne trade, we need to acknowledge the share of seaborne trade in total trade value. To do this, we make use of the latest seaborne trade data obtained from the BPS, as provided in Appendix 1.

From the data, we found that the share of Indonesian seaborne trade compared to the total trade value reaches almost 99.91%. This shows that almost all trade flows that enter and leave Indonesia are carried out using maritime transport. The share of trade via air transport is insignificant, while trade via road transport (e.g. train, truck) is recorded as zero. The latter fact is confirmed by Indonesia's geographical situation, which is surrounded mostly by the sea. Only two countries share land with Indonesia – Malaysia in the north, and Papua New Guinea in the west – and there has been no authorized flow of trade recorded using road transport to these countries.

Step 2: Converting the seaborne trade value to tonnage

In this part, we transform the change of Indonesia's total trade value into the cargo tonnage. This is done by dividing the change in total trade value with the average value per ton cargo obtained from the calculation in ECORYS (2015) research. The calculation is presented in equation (15) as follow:

$$\#TotTons = \frac{Change\ in\ total\ trade\ value}{WAPT} \quad (15)$$

Where,

$\#TotTons$ = the estimated total number of tons transported via seaborne trade

$WAPT$ = the Indonesia's weighted average unit price per ton (ECORYS, 2015)

Step 3: Calculating the change in tonnage per cargo type (containerized and bulk)
First, we calculate the change in tonnage per cargo type by employing the degree of containerization which is defined from the ECORYS (2015) in combination with Indonesian trade statistics and UN Comtrade data (2016). This is performed using equation (16):

(16) $$Container\ Cargo\ (tons) = DoC\ x\ \#TotTons$$

Where,
DoC = degree of containerization (65%)

We then transform the container cargo change from tons to TEU using equation (17):

(17) $$Container\ Cargo\ (TEU) = \frac{Container\ Cargo\ (tons)}{Average\ tonnage\ per\ TEU}$$

Where the average tonnage per TEU is taken from UNCTAD (2016)

Now we have the total number of containers transported as the result of changing international trade policies. Next, we are able to estimate the total number of bulks being shipped as well because by definition, the tons not shipped using containers will be shipped in bulk form. The calculation is quite simple and only requires a subtraction function, as outlined in equation (18) below:

(18) $$Bulk\ Cargo\ (tons) = \#TotTons - Container\ Cargo\ (tons)$$

The complete results from our calculations are presented and discussed in chapter 5.

Chapter 5 Results and Analysis

5.1. Introduction

This chapter reports the overall results obtained from our simulation as the answers of the main research question in this study: *What is the economic and maritime trade impact of Indonesia's and most important global trade policy developments?*

In order to answer the research question, we have to measure the impact of Indonesia's and global trade policies. We, therefore, perform a desk research to gather the necessary insights and information and then run three simulations, using the GSIM model, to look at expected economic and maritime trade effects. The first policy we simulate is Indonesia's prospective trade policy. These scenarios give an idea of the economic and maritime trade effects if Indonesia successfully carries out its trade policy in the next five years – by successfully concluding the 10 bilateral or regional agreements it is negotiating. The second and third scenarios add, - on top of the Indonesian trade policy scenario – effects of global trade policy developments: the second scenario looks at mega-regional effects and the third scenario at the multi-lateral WTO-Trade Facilitation Agreement effects. As we have mentioned in Section 1.3, we define the economic impact as the change in welfare, output/production and prices while the trade impact is measured by change in maritime trade values. In order to see what effects are for Indonesian ports, we also convert obtained trade values into trade volumes (i.e. numbers of containers and tons of bulk). Thus, we present our result and analysis based on the aforementioned macro-economic variables.

In Section 5.1 we focus on assessing the impacts of Indonesia's trade policy (Scenario 1). In Scenario 1A, we look at each of the individual prospective trade agreements; agreements which were initiated by Indonesia herself, or as a part of ASEAN. The purpose of performing these simulations is to reveal which agreements are relatively more and which ones relatively less important for the Indonesian economic and maritime trade. Accordingly, the simulations we run are the following:

- Scenario 1A1: Indonesia – Australia CEPA
- Scenario 1A2: Indonesia – India CECA
- Scenario 1A3: Indonesia – Chile FTA
- Scenario 1A4: Indonesia – Rep. of Korea FTA
- Scenario 1A5: Indonesia – Turkey CEPA
- Scenario 1A6: Indonesia – EU CEPA
- Scenario 1A7: Indonesia – EFTA CEPA
- Scenario 1A8: ASEAN – Hong Kong FTA
- Scenario 1A9: ASEAN Economic Community (AEC)
- Scenario 1A10: Regional Comprehensive Economic Partnership (RCEP)

In Section 5.2, we continue to focus on Indonesia's trade policy, but now we look at the combined effect of all 10 prospective FTAs covered one-by-one in Scenario 1A. Because the future is uncertain and we are not clear on what the outcomes of the FTAs under negotiation would be, we provide a comparison between modest negotiating results in terms of tariff and NTM reductions, and a situation where negotiations go well and more ambitious outcomes are the result. As explained in Chapter 4, these scenarios are:

- Scenario 1B1: Overall Indonesia's trade policy – modest scenario
- Scenario 1B2: Overall Indonesia's trade policy – ambitious scenario

In Section 5.3, we add the external trade agreements in our simulation – those which Indonesia is not directly part of but still can be affected by. The purpose of these simulations is to assess the effects of mega-regional FTAs surrounding Indonesia, while Indonesia is not a member of them. Again, we compare the results under the modest and ambitious possible outcomes:

- Scenario 2B1: Combined effects of three mega-regional FTAs: OBOR, TPP, TTIP – modest scenario
- Scenario 2B2: Combined effects of three mega-regional FTAs: OBOR, TPP, TTIP – ambitious scenario

Our last simulation adds a further global-affecting trade deal recently concluded but only now going into effect: the WTO Trade Facilitation Agreement (TFA). This agreement will certainly affect Indonesia, as the country is already a member of WTO and because it is a multilateral agreement. Therefore, in Section 5.4, we depict the situation that could be the result for the Indonesian economy under modest and ambitious situations:

- Scenario 3B1: Combined effects of Indonesia's, global and WTO-TFA trade policies – modest scenario
- Scenario 3B2: Combined effects of Indonesia's, global and WTO-TFA trade policies – ambitious scenario

For all simulations, we then convert the trade values generated by the GSIM model into TEU and tonnage, to see what the simulated trade policy changes mean for Indonesian maritime transportation.

5.2. Individual Indonesian prospective trade policy initiatives (Scenario 1A)

This section explains the economic and trade impact of various prospective FTAs Indonesia is negotiating. We compare each individual FTA from the perspective of welfare effects, output effects, price effects, and trade effects, and see what these effects mean.

Comparing welfare effects

Table 5.1 and Figure 5.1. show the breakdown of welfare effects of each of Indonesia's prospective FTAs. Welfare effects are composed of the net change in producer surplus, consumer surplus and government (or tariff) revenues. From the perspective of Indonesia's bilateral efforts, the bilateral FTAs with EU, India and South Korea are predicted to generate the biggest positive net changes (of +2.3 bn US$, +1.8 bn US$ and +1.1 bn US$ respectively) in terms of producer surplus. So, producers clearly gain from each of these bilateral FTAs to a significant extent. In terms of consumer surplus, the bilateral FTAs with EU and South Korea will be most positive with a net change of +2.0 bn US$ and +1.2 bn US$ respectively. Government revenues are expected to decline significantly, with the biggest reductions in the bilateral FTAs with the EU and South Korea (-0.9 bn US$ and -0.6 bn US$). For the bilateral FTAs we, therefore, find that consumers gain (as we see below through lower consumer prices) while producers also gain (through higher producer prices and more foreign market access), but the government loses tariff revenue.

In the regional FTAs that Indonesia is involved in alongside other members such as those in the ASEAN Economic Community (AEC) and Regional and Comprehensive Economic Partnership (RCEP), we observe that the impacts - in general – are bigger when compared to the other bilateral FTAs. For both FTAs, consumers will gain +5 bn US$ for AEC and +5.4 bn US$ if RCEP is successfully concluded, while producers will enjoy additional +2.3 US$ bn for AEC and +4.1 US$ bn for RCEP. At the same time government revenue will reduce significantly (-3.5 bn US$ for AEC and -5.4 bn US$ for RCEP). These results can be explained by the fact that these agreements involve closer economic ties with multiple countries (instead of one country only) and because they are already regionally concentrated and thus trade more with one another.

ASEAN – Hong Kong FTA should be one that Indonesia needs to pay attention more, as this FTA is estimated to significant gain for Hong Kong but it does not apply reciprocity for Indonesia as part of ASEAN. Indonesia will only retain a slight increase in producer surplus, but the sum of consumer surplus and tax revenue will be zero. Therefore, the model predicts such agreement will be more one-sided. Furthermore, some agreements such as Indonesia – Chile FTA, Indonesia – Turkey CEPA and Indonesia – EFTA CEPA are predicted to generate only less gain for both sides among other prospective FTAs.

	Scenario 1A: Indonesia's Prospective FTAs		
	Producer surplus	Consumer surplus	Government revenue
Indo (Indo-Aus)	0.3	0.6	-0.3
Aus (Indo-Aus)	0.4	0.4	-0.2
Indo (Indo-India)	1.8	0.4	-0.2
India (Indo-India)	0.3	2.4	-1.6

	Scenario 1A: Indonesia's Prospective FTAs		
	Producer surplus	Consumer surplus	Government revenue
Indo (Indo-Chile)	0.0	0.0	0.0
Chile (Indo-Chile)	0.0	0.0	0.0
Indo (Indo-S.Korea)	1.1	1.2	-0.6
S.Korea (Indo-S.Korea)	0.8	1.5	-0.9
Indo (Indo-Turkey)	0.1	0.0	0.0
Turkey (Indo-Turkey)	0.0	0.2	-0.1
Indo (Indo-EU)	2.3	2.0	-0.9
EU (Indo-EU)	1.3	2.1	-1.3
Indo (Indo-EFTA)	0.1	0.1	-0.1
EFTA (Indo-EFTA)	0.1	0.2	-0.1
Indo (ASEAN-HK)	0.1	0.3	-0.3
HK (ASEAN-HK)	3.3	3.6	0.0
Indo (AEC)	2.3	5.0	-3.5
Indo (RCEP)	4.1	5.4	-5.4

Table 5-1 Welfare Changes (US$ billion) for Scenario 1A
Source: Author's calculation

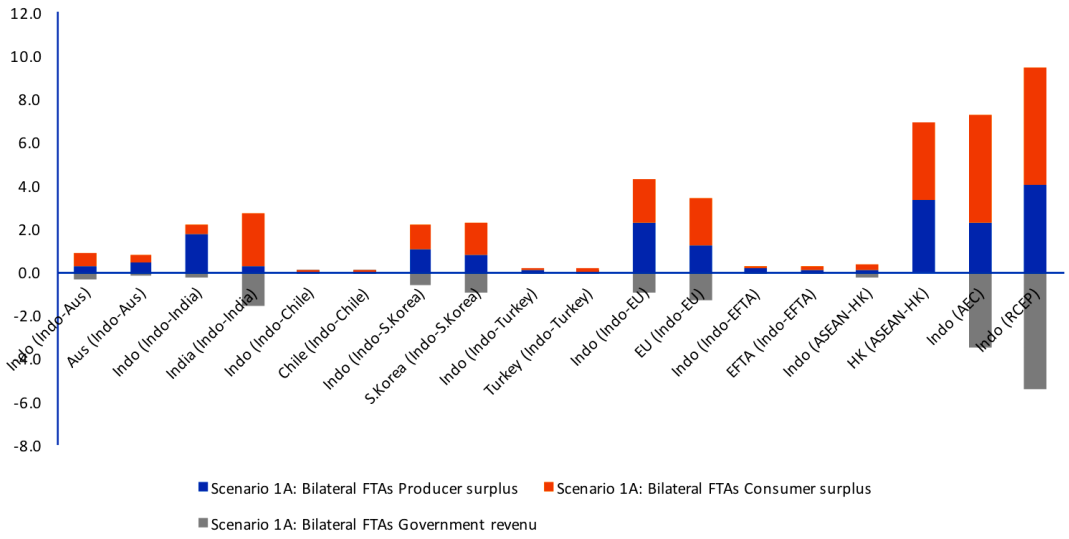

Figure 5.1 Welfare Effects Decomposition (US$ billion) for Scenario 1A
Source: Author's compilation

Comparing output effects

Output effects are the same as production effects or changes in GDP. The percentage change in output is presented in Table 5.2 and Figure 5.2. We see that the bilateral FTA between Indonesia and EU will trigger an increase in GDP by +2.7% (which is as much gain at the AEC initiative), followed by the Indonesia – India FTA with a +2.0% increase. Bilateral FTAs with Turkey and Hong Kong via ASEAN will only

generate a little increase in Indonesia's output, while the effects are even smaller for the bilateral FTA with Chile. Regionally, RCEP will bring about the highest increase in output by +4.7%, followed by AEC with a +2.6% change. The increase in a country's total output may trigger more investment, and it also may prompt the existing investors to become more productive as economic opportunities become available.

On the other side, some countries suffer from the forming (or deepening) of regional FTAs that Indonesia is part of. Japan and India will experience lower output (-0.1%, respectively) as the consequence of AEC because they are not members of AEC and thus see trade and investment diverted away from their countries. The USA, Chile and Hong Kong see output go down, caused by the forming of RCEP. This is in line with the literature on the expected effects of RCEP (Natalegawa, 2015). In this study, we simulate RCEP as a modestly ambitious trade policy initiative, with a focus on tariffs. Despite its modest ambitions, we predict that RCEP reduces output elsewhere due to the large trade creation effects inside the block, at the expense of outsider economies. They will lose relative market access compared to RCEP members. The model predicts Australia will gain the most from RCEP, followed by New Zealand and Indonesia. At first sight, it may seem surprising, that RCEP only leads to a +2.0% increase in GDP for China. We should, however, not forget that a 2.0% rise for the large Chinese economy makes it one of the largest benefactors in absolute (US$).

	Scenario 1A: Indonesia Prospective FTAs									
	1A1 Indo-Aus	1A2 Indo-India	1A3 Indo-Chile	1A4 Indo-Kor	1A5 Indo-Tur	1A6 Indo-EU	1A7 Indo-EFTA	1A8 AS-HK	1A9 AEC	1A10 RCEP
Indonesia	0.3	2.0	0.0	1.2	0.1	2.6	0.2	0.1	2.6	4.7
Singapore	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	4.1	4.6
Malaysia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	2.9	4.1
Japan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	3.8
China	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0
South Korea	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	4.1
USA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.1
EU	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Australia	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.3
India	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	1.5
Hong Kong	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	-0.3
Chile	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	-0.2
Turkey	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
New Zealand	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7
EFTA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest of AEC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ROW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 5-2 Output Effects (%) for Scenario 1A
Source: Author's calculation

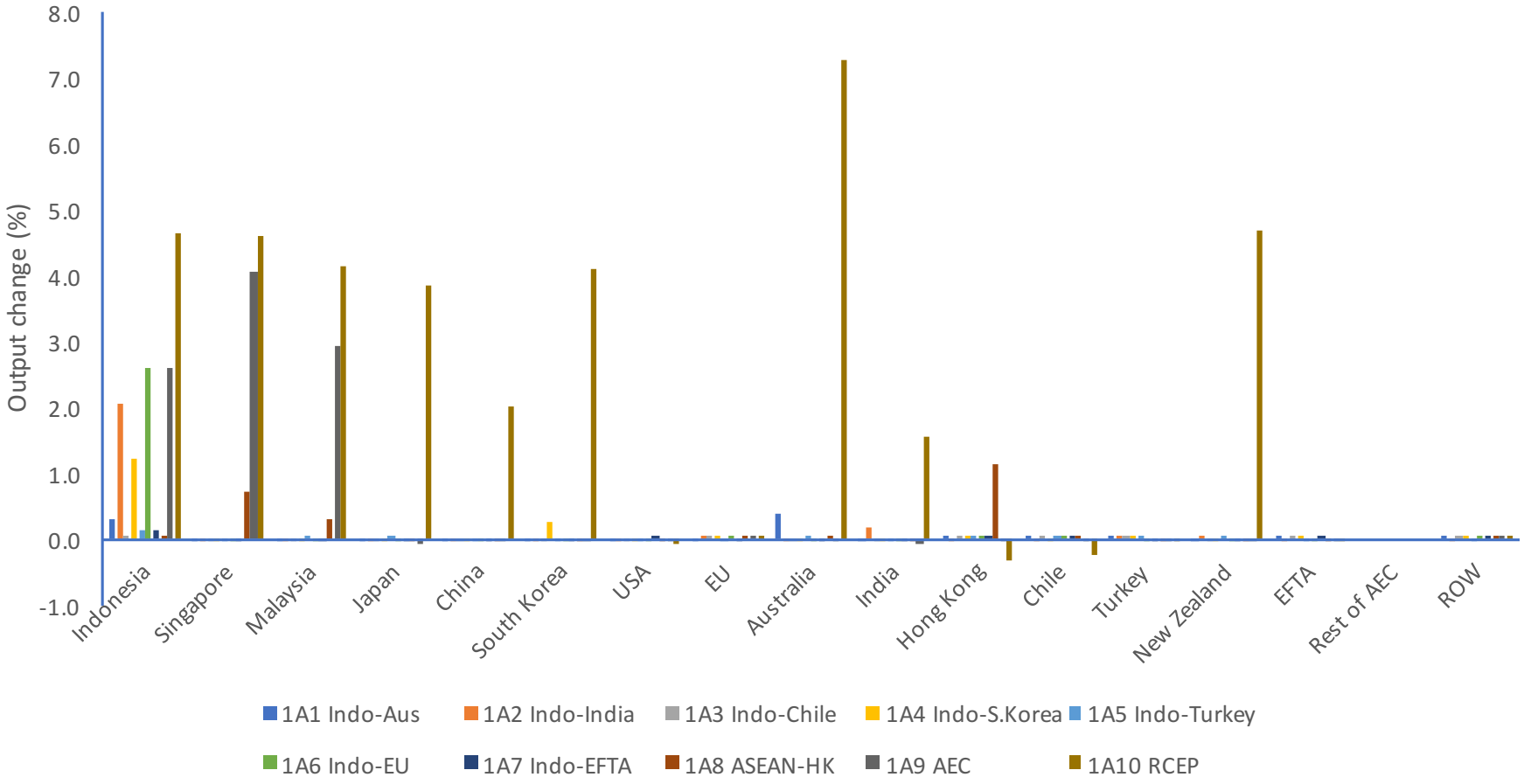

Figure 5.2 Output Effects (%) for Scenario 1A
Source: Author's compilation

Comparing price effects

There are two distinct price effects that happen in an economy: changes in consumer prices and changes in producer prices. Lower consumer prices, meaning the everyday life for Indonesian consumers gets cheaper, is the result of cheaper imports from the partner countries Indonesia has signed trade agreements with. A higher producer price is a sign of better performance for the producers, because of better market access to new foreign markets in countries where Indonesia has signed trade agreements with. Trade therefore can benefit both producers and consumers in the Indonesian economy.

Figure 5.3 presents how the prospective FTAs of Indonesia takes effect individually in term of consumer price. It is consistent with our previous findings, that the regional FTAs will generate a bigger impact than the bilateral FTAs. RCEP is expected to lower consumer prices by 3.8%, and AEC by 3.5%. Among the bilateral FTAs, the Indonesia – EU CEPA has the largest price impact with a reduction in consumer prices of 1.4%, followed by the Indonesia –FTA. Meanwhile, the Indonesia – Chile FTA and Indonesia – Turkey CEPA only reduce the consumer prices by -0.02%, which is almost no effect.

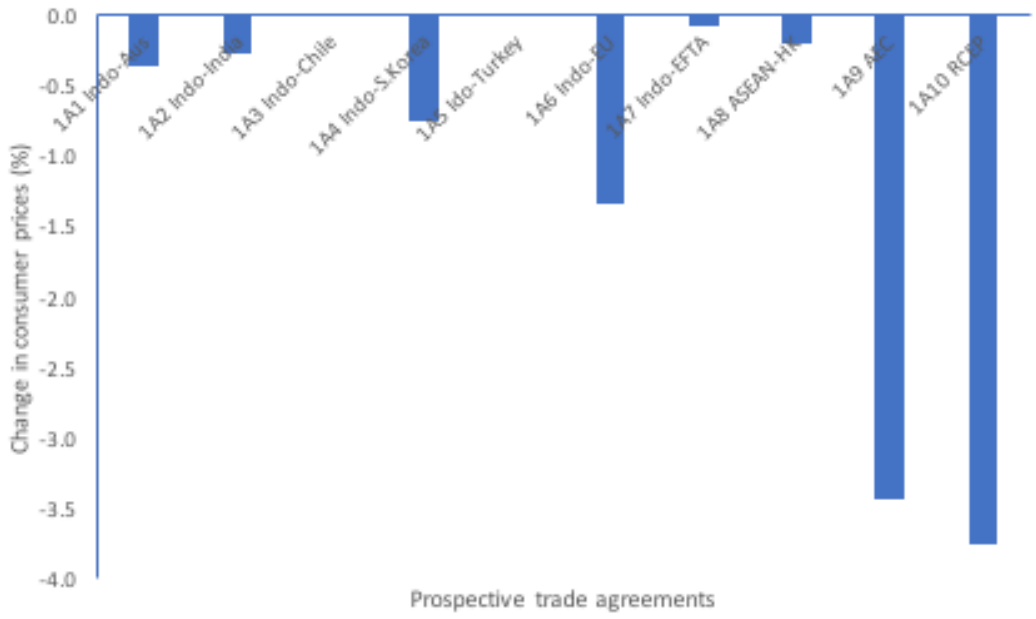

Figure 5.3 Consumer Price Effect (change in %)
Source: Author's calculation

Comparing trade effects

Trade effects directly refer to the change in total exports and imports. Figure 5.4 shows the total effect of Indonesian trade policy. First, we find that trade is expected to increase significantly (both exports and imports). Second, we see – overall – that the change in imports is more pronounced than the change in exports.

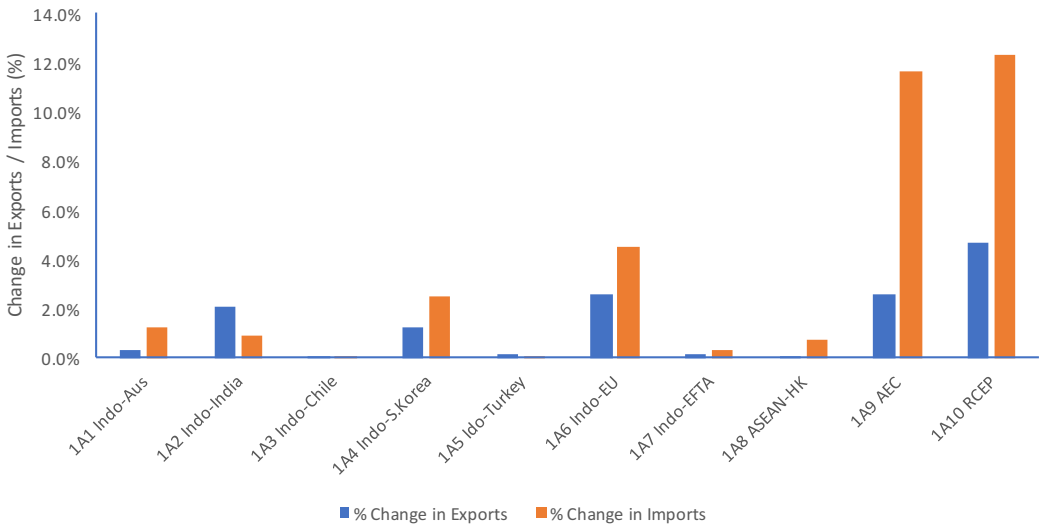

Figure 5.4 Trade Effects: Exports and Imports (change in %)
Source: Author's calculation

In terms of changes in exports – as we expected – the RCEP and AEC initiatives are expected to lead to the largest increases in Indonesia's exports, with increases of +4.7% and +2.6% in exports respectively. For bilateral FTAs, Indonesia – EU CEPA is predicted to bring the highest export growth opportunities for Indonesia, followed by Indonesia – India CECA and Indonesia – Rep. of Korea FTA. In terms of imports, again, the RCEP and AEC initiatives have the largest impact. Imports are expected to go up by +12.3% and +11.6% for the two regional trade deals respectively. The reason for these larger effects for AEC and RCEP are that they are with more than one country (unlike the other Indonesian trade initiatives) and because these partners are important trading partners for Indonesia.

The only FTA where exports increase more in relative terms than imports is the Indonesia – India FTA. The reason for this is that India has even higher tariffs than Indonesia and that eliminating them will give Indonesia more market access than vice versa is the case for India. The situation of Indonesian imports increasing faster than exports for all FTAs except for the one with India may be politically difficult in Indonesia, because the government wants exports to increase faster than imports. However, if Indonesia would only pursue the Indonesia-India FTA, there would be hardly any economic effects of its policy. Moreover, the government would deprive both consumers and producers from massive gains (consumers through lower prices means they have more money left) and producers through enhanced market access. The worsening of the trade balance is, in fact, a reflection that Indonesian tariffs are high – higher than with almost any other trade partner – and this means that any trade agreement effect will lead to more imports, until Indonesian tariffs have come more in line with global ones. It also means that trade initiatives Indonesia is not part of, will lead to Indonesia losing out.

Impact on maritime trade

Having obtained the estimated change in trade values of each of the prospective FTAs as part of Indonesia's current trade policy – both exports and imports – we can interpret how it would impact Indonesia's seaborne trade. Hence, by applying the conversion methodology as explained in Section 4.5, we now present the number of additional containers (in TEU) and bulk cargo (in tonnage) as the results of each of the prospective FTAs in Table 5.3.

	Additional Containers (thousand TEU)	Additional Bulk Cargo (thousand tonnage)
1A1 Indo-Aus	46.09	63.00
1A2 Indo-India	90.00	123.02
1A3 Indo-Chile	2.30	3.14
1A4 Indo-S.Korea	111.54	152.46
1A5 Indo-Turkey	6.25	8.54
1A6 Indo-EU	213.35	291.63
1A7 Indo-EFTA	13.41	18.34
1A8 ASEAN-HK	23.64	32.31
1A9 AEC	421.00	575.46
1A10 RCEP	504.75	689.94

Table 5-3 Maritime trade impacts
Source: Author's calculation

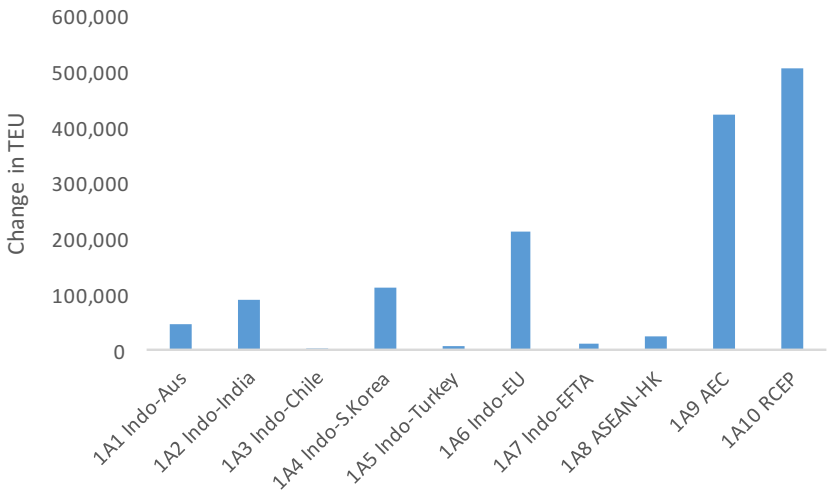

Figure 5.5 Maritime trade impacts: additional containers (TEU)
Source: Author's calculation

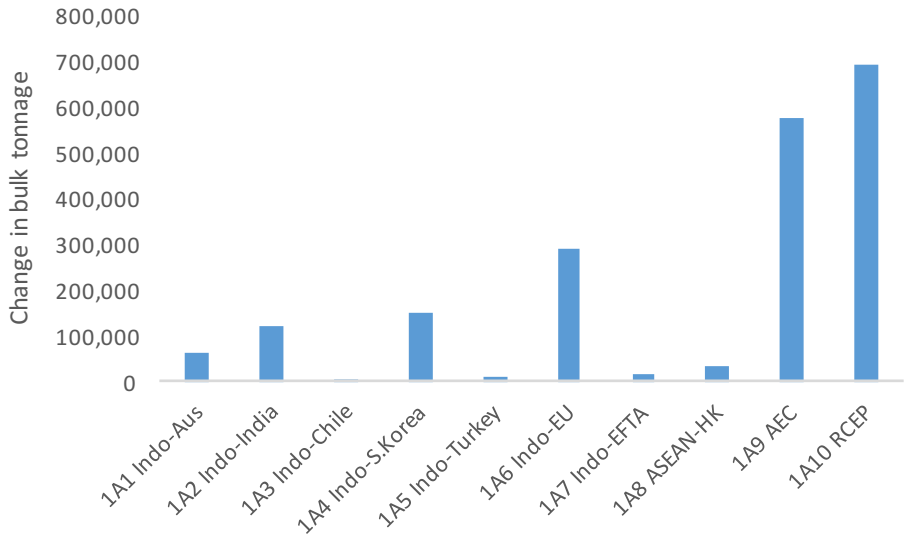

Figure 5.6 Maritime trade impacts: additional bulk cargo (tons)
Source: Author's calculation

We observe a parallel pattern on both increase in containers and bulk cargo, as a result of the establishment of new trade agreements. The results are in accordance with the change in trade values as previously discussed. Therefore, RCEP and AEC will be driving significant increases in total numbers of containers and bulk cargo that enter and leave Indonesia. RCEP is expected to lead to around 500.000 extra containers each year and almost 700.000 tons of bulk cargo *each year*. The AEC effects are a bit smaller. The largest bilateral trade effect comes from the Indonesia-EU trade agreement.

With these figures being clear today and with the simulations assuming that Indonesia will actually conclude these trade agreements in the coming five years, barring uncertainty about whether they will in fact be concluded, Indonesian ports have now information to prepare for and anticipate a significant increase in numbers of containers and tonnage bulk as a result of the bilateral FTAs between Indonesia and its trade partners as per its trade policy goals. Most attention – from an economic perspective – should be given to RCEP, AEC, the Indonesia-EU, Indonesia – South-Korea, and Indonesia-India FTAs as they will lead to the largest expected changes in volumes.

5.3. Overall Indonesian prospective trade policy initiatives (Scenario 1B)

In the previous Section we looked at each prospective FTA for Indonesia separately, with the main purpose of identifying which FTA's are be relatively more and which ones relatively less important for Indonesia in economic and trade terms. In this Section, we simulate the total effects of all of Indonesia's prospective FTAs

simultaneously. This will give us insight into the total potential economic and trade effects of Indonesia's trade policy. Because we are not sure how the future unfolds, we create a modest scenario (Scenario 1B1) and an ambitious one (Scenario 1B2). This section is developed in close collaboration with Wiragi (2017). The results of this section are used in subsequent Scenarios in this study and in the scenarios run by Wiragi (2017).[1]

Comparing welfare effects

Table 5-4 shows the total and split out welfare effects for Indonesia and main trading partners. Total welfare gains of a modestly effective Indonesian trade policy would amount to +7.8 bn US$, while an ambitious outcome of its trade policy would lead to welfare gains of +13.0 bn US$. In the modest scenario, consumer gains are the main driver for these results, while in the ambitious one, both producers and consumers benefit in roughly equal measure. In both scenarios, the Indonesian government loses tariff revenues, more so in the ambitious scenario than in the modest one. The reason for the larger losses in tariff revenue in the ambitious scenario is that tariffs are cut more and thus more revenue is lost.

	Scenario 1B1: Modest				Scenario 1B2: Ambitious			
	Total welfare	Producer surplus	Consumer surplus	Government revenue	Total welfare	Producer surplus	Consumer surplus	Government revenue
Indonesia	7,8	6,3	7,8	-6,3	13,0	10,2	10,7	-7,9
Singapore	13,3	11,6	2,0	-0,3	22,8	18,7	4,4	-0,3
Malaysia	7,1	5,5	6,5	-5,0	12,5	9,3	9,3	-6,1
Japan	6,9	8,2	4,9	-6,1	13,1	14,1	8,5	-9,5
China	13,4	15,1	17,0	-18,7	24,8	26,8	28,1	-30,1
South Korea	8,7	7,6	10,8	-9,7	14,2	13,0	17,0	-15,8
USA	-10,3	-0,6	-8,9	-0,7	-16,1	-0,8	-14,3	-1,1
EU	-7,8	0,8	-6,5	-2,0	-12,7	1,8	-11,3	-3,2
Australia	4,0	4,5	1,2	-1,7	7,4	7,7	2,3	-2,6
India	1,6	1,5	6,2	-6,1	3,2	2,6	10,1	-9,5
Hong Kong	-3,6	0,4	-4,0	0,0	-4,1	1,3	-5,4	0,0
Chile	-0,3	-0,1	-0,2	0,0	-0,4	-0,1	-0,3	0,0
Turkey	-0,4	0,0	-0,3	-0,1	-0,7	0,0	-0,5	-0,1
New Zealand	0,4	0,6	0,1	-0,3	0,8	0,9	0,2	-0,4
EFTA	-0,5	-0,1	-0,4	-0,1	-0,8	0,0	-0,6	-0,1
Rest of AEC	2,7	0,0	14,0	-11,3	4,7	0,0	19,6	-15,0
ROW	-17,7	0,4	-15,4	-2,7	-27,9	1,4	-25,0	-4,3

Table 5-4 Welfare Effects on Scenario 1B (US$ bn)
Source: Author's calculation

[1] See Section 1.1 for more details

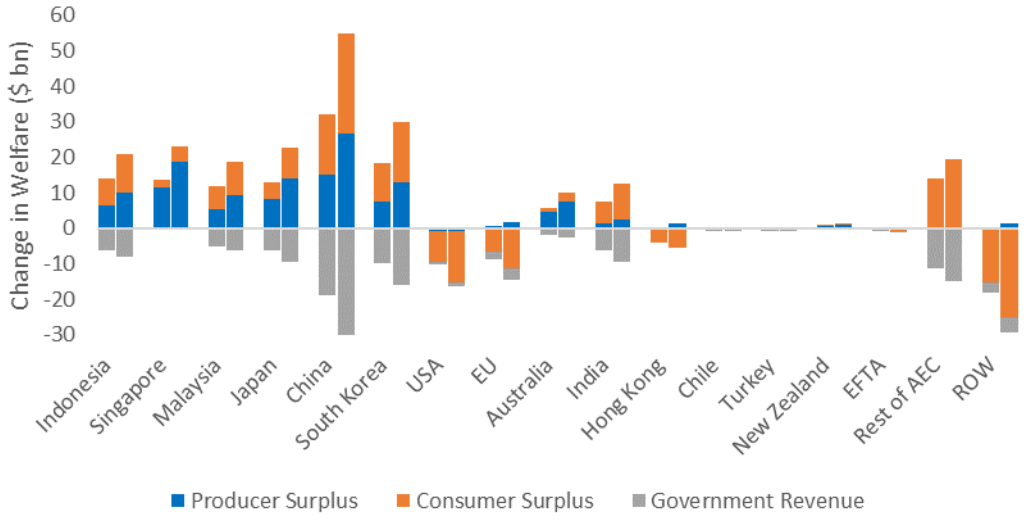

Figure 5.7 Welfare Effects on Scenario 1B (bn US$)
Source: Author's calculation

We see that Singapore, Indonesia's main competitor, gains even more from Indonesian trade policy than Indonesia itself, in absolute terms. This, can be explained by the fact that the main drivers for these gains are RCEP and AEC – both of which Singapore is also a party to. If we look at the bilateral trade agreements of Indonesia, Singapore does not benefit. The US and EU lose out by 10.3 and 7.8 bn US$ because they are not part of any of the trade policy initiatives of Indonesia, with the exception of the Indonesia – EU FTA. This is why the negative effects for the EU are smaller than for the US; they are still negative, however, indicating that the total of negative effects of agreements the EU is not part of is larger than the positive effects of the Indonesia-EU FTA. Hong Kong, Chile, Turkey and EFTA countries will also experience welfare losses, but to a lesser extent.

Comparing Output effects

From Figure 5.8 we learn that in terms of output, Indonesia will benefit the most when all prospective FTAs are signed and in effect, both in the modest and ambitious scenarios. This is because the Indonesian GDP effect is the sum of Indonesia's bilateral trade agreements and the AEC and RCEP effects together.

The other ASEAN countries also gain a lot, but not as much as Indonesia. This is in part due to the fact that they are also in AEC and RCEP and in part because they are closely linked to Indonesia. This means that if Indonesia gains, some of these gains – via trade and investment – spill-over to the other ASEAN members. They do not get benefits from the bilateral Indonesian FTAs, however. To a lesser extent than Indonesia and ASEAN, Australia and New Zealand will gain significantly in terms of GDP as well, because of the RCEP effect and so do the East Asia countries like Japan, China and Rep. of Korea – with smaller percentage of increase in general. The US, Chile, Turkey and EFTA countries experience marginal GDP declines, with

Chile losing relatively most of total production. The EU is the only entity which is quite distant from RCEP geographically but still experiences positive changes in output. This can be explained by the Indonesian-EU FTA that is part of this scenario.

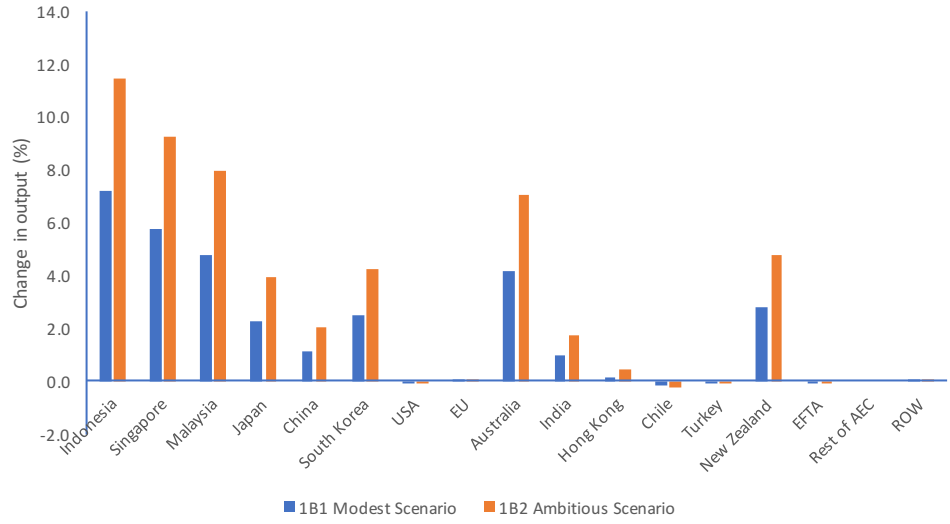

Figure 5.8 Output effects on scenario 1B (% in change)
Source: Author's calculation

Comparing price effects

In terms of consumer price reductions, which can also be interpreted as an increase in consumer purchasing power, we see that Indonesian consumers benefit most, both under modest and ambitious scenarios. The reason for these large consumer price declines is because Indonesia – under both scenarios – will have signed FTAs with important trading partners. That means Indonesia is opening up to those trading partner products that will then be imported more cheaply than Indonesian producers can produce those themselves. This leads to lower prices for a wide range of products and thus more purchasing power for consumers.

This effect – though to a lesser extent – is also found for the other developing countries such as Malaysia and the rest of ASEAN countries. South Korea and India also enjoy lower consumer prices. Singapore, Japan, China, Australia and New Zealand will experience only slight consumer price reductions. These countries already have very low tariffs – unlike Indonesia – so tariffs cannot be reduced much more (e.g. for Singapore, New Zealand). Also, these countries will not be affected as much by Indonesia (e.g. China) as Indonesia is affected by them – so the price effects on their sides are smaller because of the sizes of their economies.

Some countries experience small increases in consumer prices, like the US, EU, Hong Kong, Chile, Turkey and EFTA.

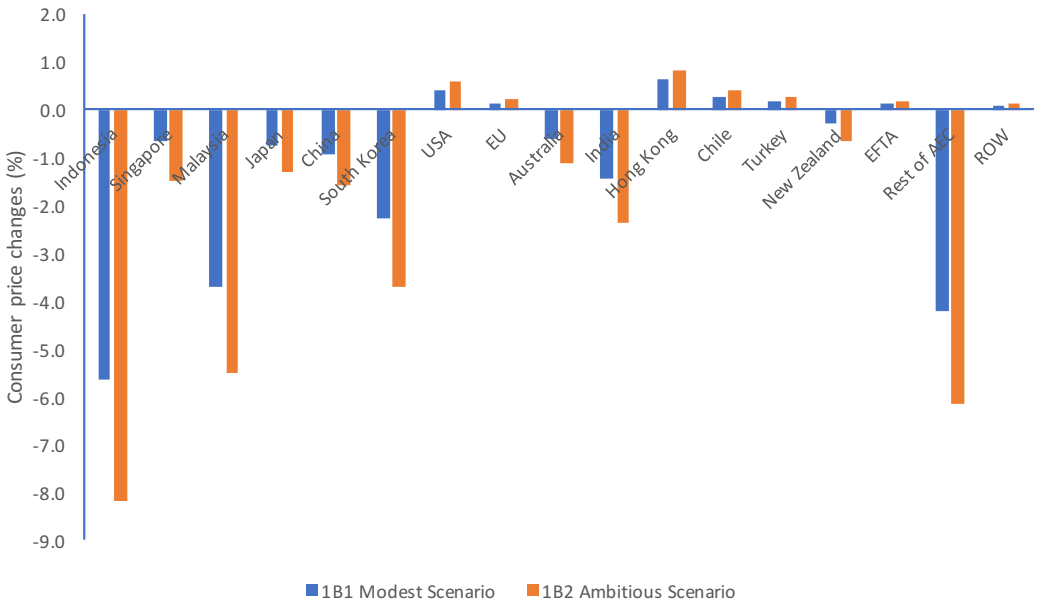

Figure 5.9 Price effects for scenario 1B
Source: Author's calculation

Comparing trade effects

In terms of trade effects, when we look at Indonesia, we see that total trade goes up by 20 – 30% for imports and by 7 – 12% for exports, depending on the scenario. Because Indonesia as such high initial tariffs, any trade agreement will lead to Indonesia opening up relatively more than partner countries, leading to larger increases in imports than exports, and a worsening trade balance. This leads to positive economic effects, as already explained.

For the other countries, we can put them together in particular groups with the same change characteristics. The first group consists of countries which will experience higher increases in imports than exports in value terms as the consequence of the impact of all prospective FTAs, both in the modest and ambitious scenarios. These countries are: Indonesia (as said), Malaysia and rest of ASEAN countries, South Korea, Japan, China and India. All these countries have relatively high tariffs still today for a range of products, leading to more imports when they are removed in FTAs.

The second group consists of countries which see exports rise more (in % terms) than imports. Included in this group are: Singapore, Australia and New Zealand. These countries will benefit from more market access while their own market access will increase only marginally because they already have very low tariff rates.

The third group consists of countries with deteriorating exports and imports, both in modest and ambitious scenarios. The US, EU, Hong Kong, Chile, Turkey and EFTA countries are included in this group. The result of our simulation is presented in Figure 5.10.

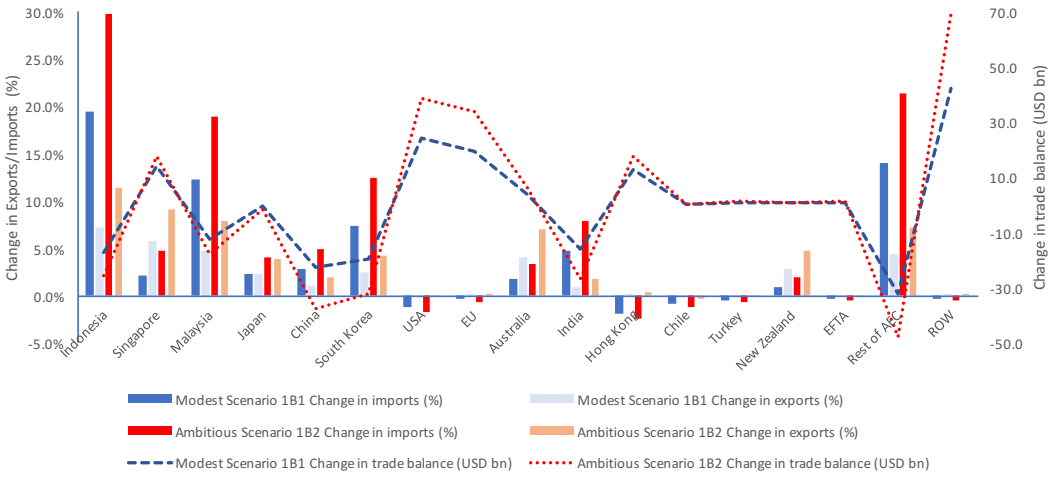

Figure 5.10 Trade effects for scenario 1B
Source: Author's calculation

Impacts on maritime trade

The summary results of maritime trade impacts as the outcome of conducting all FTAs together – both under modest and ambitious sub scenarios – can be depicted on the following figures.

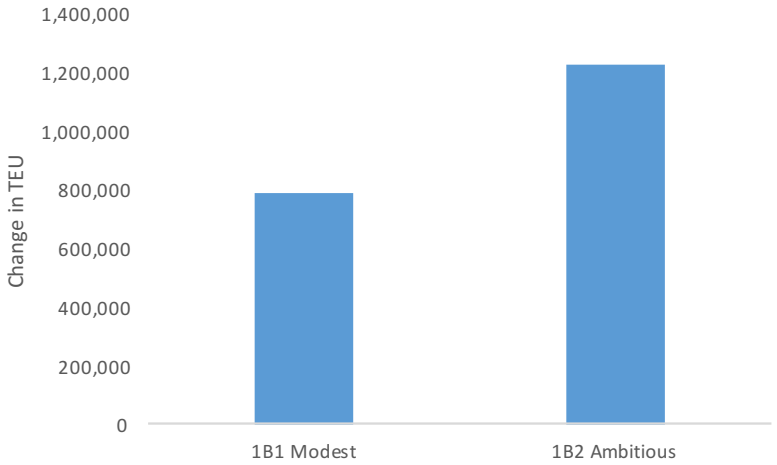

Figure 5.11 Maritime trade impact for scenario 1B: additional containers (TEU)
Source: Author's calculation

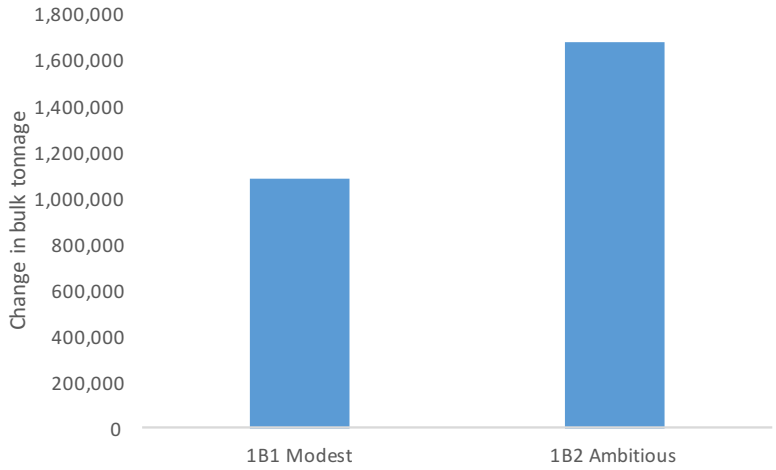

Figure 5.12 Maritime trade impact for scenario 1B: additional tonnage (tons)
Source: Author's calculation

Under modest scenario, Indonesian maritime trade will be impacted by an additional 788.110 TEU containers each year and 1.077.262 tonnage of cargo bulk. While under the ambitious scenario, the increase will be obviously higher: 1.224.404 TEU containers and 1.673.630 tonnage of cargo bulk each year. In terms of containers, compared to the current number of TEU, this is an increase of 13% for the modest and 20% for the ambitious scenario.

5.4. Mega-regional trade policy effects (Scenario 2)

In this section, we perform the simulation by combining all Indonesia's prospective FTAs with three mega-regional FTAs: TPP, OBOR and TTIP – under a modest (Scenario 2B1) and ambitious (Scenario 2B2) scenario. The modest and ambitious scenario definitions are explained in Chapter 4.

Comparing welfare effects

The welfare effects in this scenario are a result of the combination of both Indonesia's trade policy and the mega-regional trade policy, which Indonesia is not (or only very marginally) part of. If we recall that the mega-regionals we add are: OBOR (driven mainly by China), TPP, and TTIP (between EU and US), we can explain why the total welfare for China, the EU and US increases so much. Both under the modest and ambitious scenarios, the US gains a lot, and so do the EU and China – albeit to a lesser extent. This is the case for both producer and consumer surplus. This shows the clout and impact of TTIP if it were signed: linking up the largest economies in a deep manner (i.e. far-reaching levels of integration). Singapore and the Rep. of Korea also enjoy the increasing values of producer and consumer surplus because of TPP membership, and so does Japan.

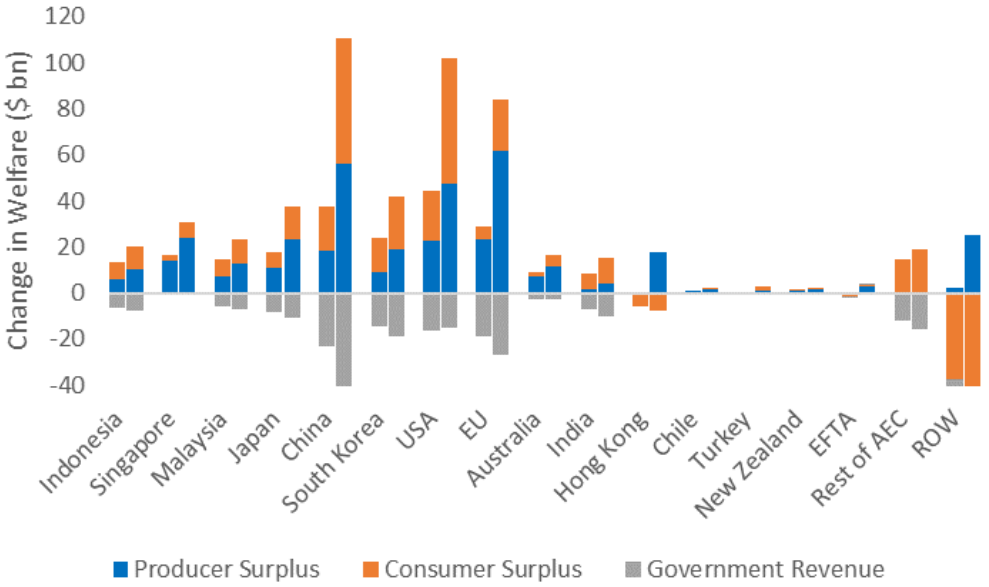

Figure 5.13 Welfare effects for scenario 2B
Source: Author's calculation

For Indonesia, the total gains will be +7.3 US$ bn under the modest scenario, and +12.4 US$ bn under the ambitious scenario. Almost the same situation is expected to occur in Malaysia and Australia. The reason for the much larger welfare gains under the ambitious scenario for Indonesia, even if it is not part of the mega-regionals comes from the 'spill-over' effect. These mega-regionals are so large that they set global standards to a certain degree, lowering NTMs all over the world, including in Indonesia. So even if Indonesia is not part of the mega-regionals they do affect the Indonesian economic and trade landscape.

Some countries are predicted to experience welfare losses under the modest scenario, that will turn positive under the ambitious scenario because of the aforementioned spill-overs – though only a just. These countries Hong Kong, Turkey and the EFTA countries.

Comparing Output effects

In terms of production, Indonesia still experiences the largest positive change under both the modest and ambitious scenarios, followed by Singapore, Malaysia and other rest of ASEAN countries. But the gap, compared to Scenario 1B is much smaller now. This suggests that, although the combination between Indonesia's prospective policy and the mega-regional trade agreements will bring positive impacts for Indonesia, the mega-regionals lead to more gains elsewhere (relatively). This is expected, because unlike Indonesia, Singapore, Australia, New Zealand, and Malaysia are part of TPP, US and EU are part of TTIP and China and various ASEAN partners are in OBOR together. In general, almost all countries will gain in output terms, except the EFTA countries, who are estimated to see output decline under the modest scenario.

The full results are summarized in Figure 5.14.

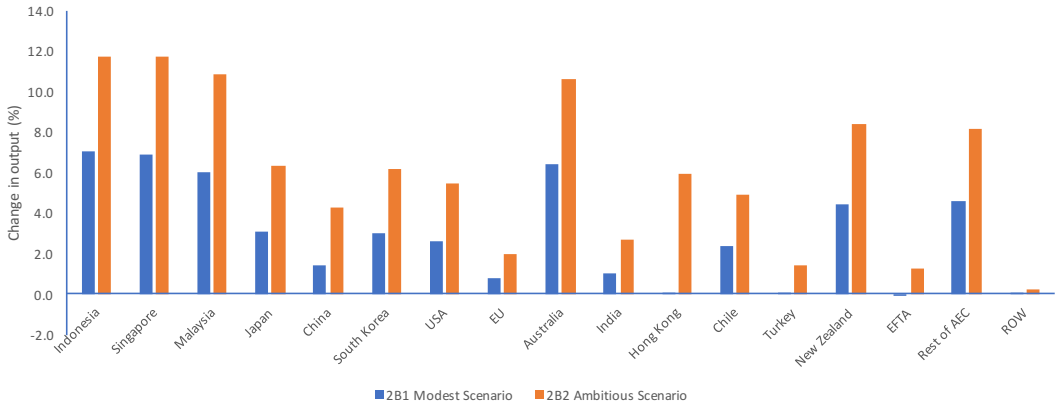

Figure 5.14 Output effects for scenario 2B
Source: Author's calculation

Comparing price effects

In terms of prices, once again Indonesia is predicted to reap the highest reduction in consumer prices, meaning the higher purchasing power for its consumers. The pattern is very similar to the one under Scenario 1B even if we add the mega-regional scenario in our simulation. Developing countries like Indonesia, Malaysia and the rest of ASEAN countries will see purchasing power increase. This could lead to a further rise of the middle-income class in these types of countries (except Singapore). The Rep. of Korea will also benefit from higher purchasing power.

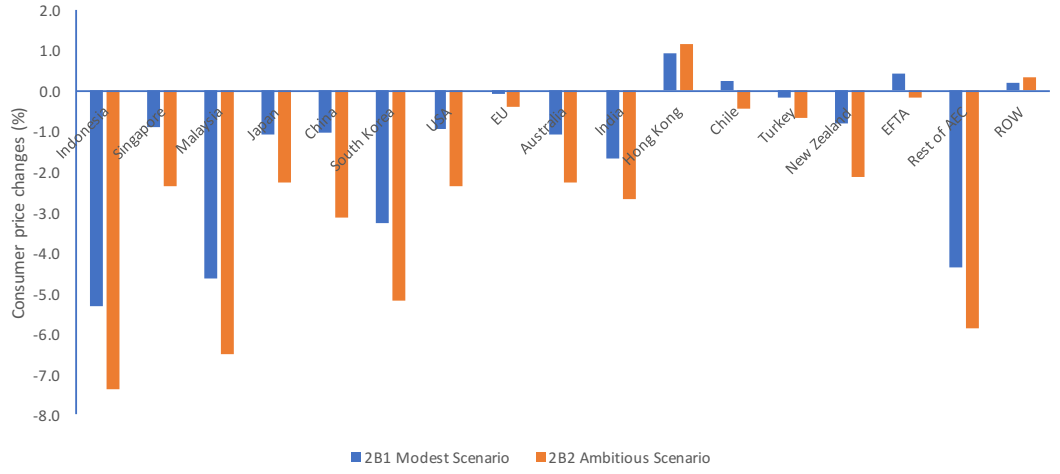

Figure 5.15 Price effects for scenario 2B
Source: Author's calculation

In the meantime, producer prices are expected to go up (not reported), indicating increased demand for their goods and services and higher levels of profit as a consequence of better market access.

Comparing trade effects

First of all, it becomes clear that trade goes up a lot again in this scenario. Only Hong Kong and Rest of World (not included in Indonesian trade policy nor mega-regionals) witness a decline in trade. In relative terms ASEAN members, and Indonesia in particular, gain most because of the Indonesian trade policy scenario that hinges upon ASEAN integration and RCEP.

From the model simulation in this phase, the pattern of countries which tends to experience higher increase in imports than exports is almost the same as in the simulation before we add the effects of mega-regional FTAs. Indonesia, Malaysia, Japan, China, Rep. of Korea and the rest of ASEAN countries remains on this group, with US as the additional one. Vice versa, Singapore, Australia and New Zealand will still be envisioned to have surplus trade by exporting more. Only Hong Kong is predicted to be agonized by quite significant decreasing trade value particularly in imports.

Turning to changes in the trade balance, we see that for only a few countries/regions it improves: the EU, Hong-Kong and ROW. For all others it deteriorates, especially for the US in the ambitious scenario. President Trump will not be happy to see this simulation, especially not because the only tool he has in his trade policy arsenal is TTIP – since he stepped out of TPP and the US is not part of OBOR.

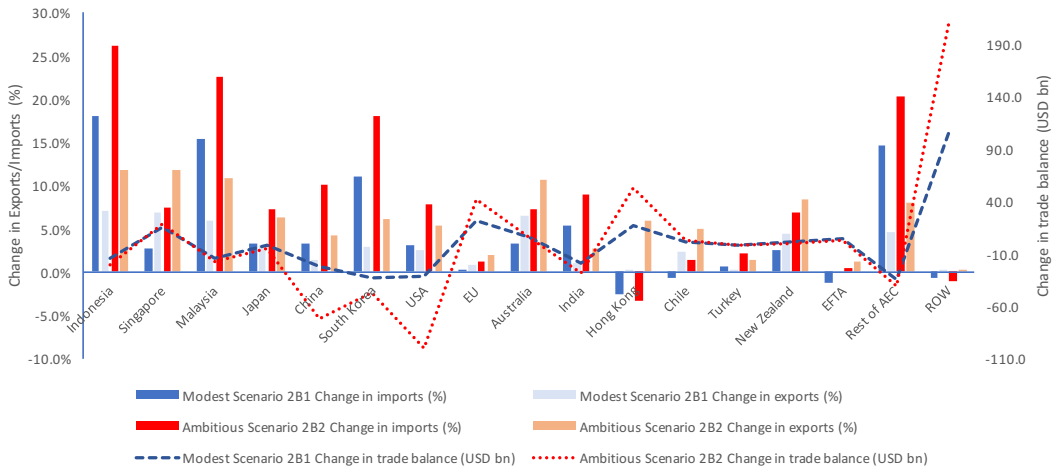

Figure 5.16 Trade effects for scenario 2B
Source: Author's calculation

Impacts on maritime trade

Figure 5.17 and 5.18 illustrate the impact of the combined Indonesian and global trade policy on Indonesia's domestic ports. Under this scenario, the flow of containers is expected to be 744.000 TEU higher in the modest scenario each year, and 1.130.000 TEU in the ambitious scenario. Cargo bulk will increase by 1.0 million tons in the modest scenario and 1.5 million tons in the ambitious scenario. This is an increase of 12% compared to the current number of containers in the modest scenario and 19% in the ambitious scenario.

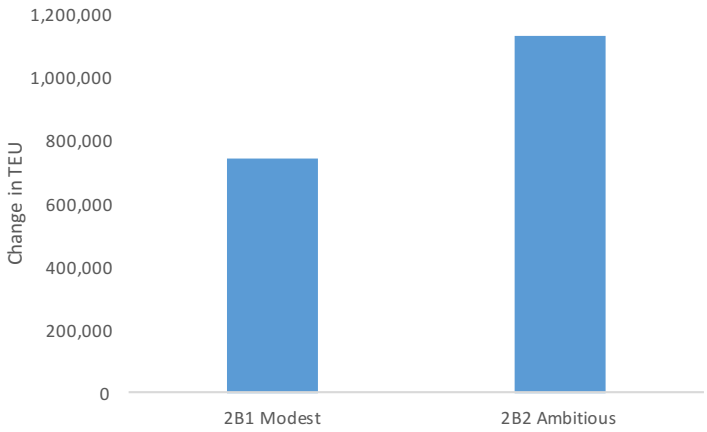

Figure 5.17 Maritime trade impact for scenario 2B: additional containers (TEU)
Source: Author's calculation

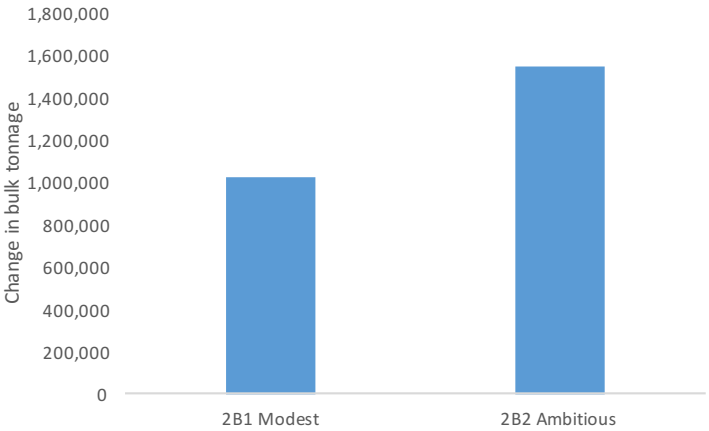

Figure 5.18 Maritime trade impact for scenario 2B: additional tonnage (tons)
Source: Author's calculation

5.5. The WTO Trade Facilitation Agreement effects (Scenario 3)

In this section, we present the results of the possible future where, in addition to Indonesian and global trade policy initiatives, we also factor in the recently concluded WTO TFA. We do this because it is realistic from the perspective of it having come into force a few months ago and thus it is part of Indonesia's future too. As we

explained in Section 2.5.4, the WTO TFA is the initiative formed by the WTO members to reduce red tape and other customs procedural costs, facilitating trade. From this perspective, it is important to bear in mind that the WTO-TFA only affects NTMs (i.e. customs procedures, delays at the border, red tape, digital customs forms), as it deals with the trade policy improvement instead of determining tariff lines. That means that in Scenario 3, there are no additional tariff changes that were not already in Scenario 2. The only difference lies in different NTMs.[2]

Comparing welfare effects

We see that for Indonesia, total welfare amounts to +15.0 bn US$ for the ambitious scenario. This is an increase of 2.6 bn US$ compared to ambitious Scenario 2B. The share of consumer surplus in these total gains is 10.6 bn US$, while producers benefit to the amount of 12.2 US$. This implies that for Indonesia the WTO TFA has a positive effect.

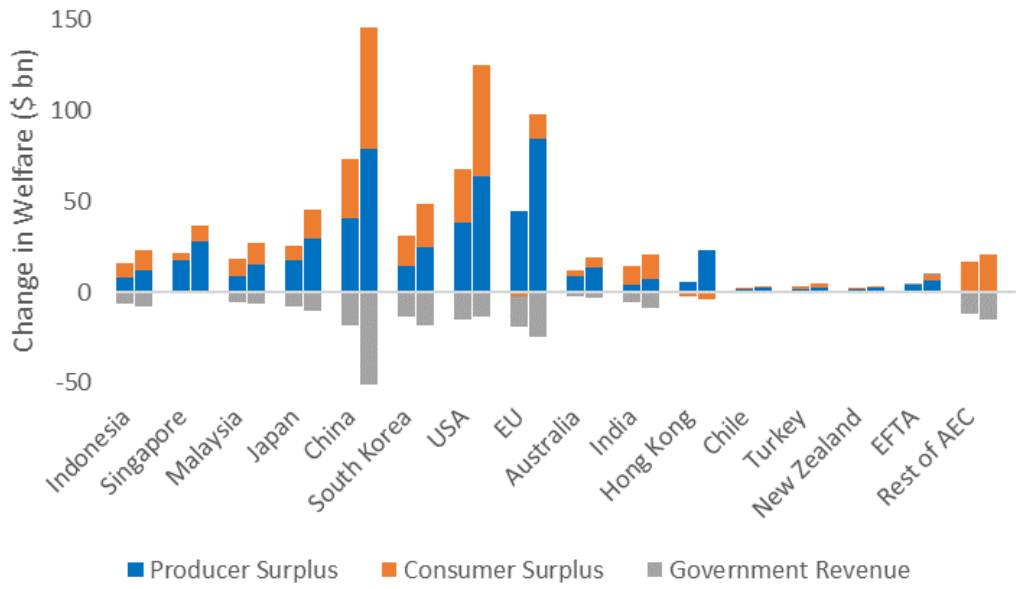

Figure 5.19 Welfare effects for Scenario 3B
Source: Author's calculation

Under both scenarios (modest and ambitious) the results show that the US and China will gain the most in terms of welfare enhancement, as was the case for Scenario 2B. Both countries particularly enjoy the benefit of rapid increases of producer surplus. These are followed by EU and Singapore. This is entirely due to the fact that China is the driver for the OBOR mega-regional and the US and EU are in TTIP together. Singapore benefits from Indonesia's trade policy (including AEC and RCEP), and TPP.

[2] That does not mean there cannot be changes in tariff revenues. Because if tariffs stay the same, but because of the WTO TFA (NTMs) trade flows change, given constant tariffs, tariff revenues will still be impacted.

Comparing Output effects

Indonesian output will increase by 8.84% in the modest and 13.61% in the ambitious scenarios, compared to no trade policy strategies in Indonesia and the rest of the world. That is a significant permanent one-time gain that comes on top of autonomous Indonesian GDP growth.

In terms of changes in output. ASEAN and Oceanian countries, like Indonesia, are projected to be the ones which experience the largest GDP gains. This reinforces the previous findings we obtained from scenario 2B1 (modest) and 2B2 (ambitious): that the output of ASEAN and Oceanian countries would be greatly affected by the forging of trade cooperation in their region. The WTO TFA adds to those effects, but does not fundamentally change GDP effects relatively, because the WTO TFA is non-discriminatory and applies to all WTO members.

The East Asian countries like Japan, China and South Korea benefit, but relatively less than the ASEAN countries – as explained in Scenario 2. In general, all countries are predicted to have positive output changes, ranging from +1.4% for the EU to +8.8% for Indonesia under modest scenario and +2.1% for ROW to +13.7% for Singapore under the ambitious scenario. This positive effect also includes the EFTA countries, which in Scenario 2B still showed negative GDP effects.

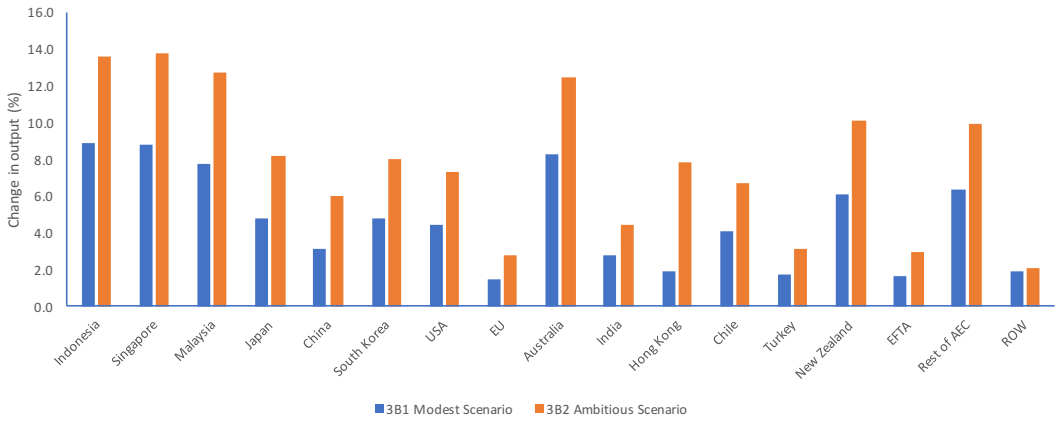

Figure 5.20 Output effects for scenario 3B
Source: Author's calculation

Comparison of price effects

Figure 5.21 demonstrates how consumer prices will be affected by the WTO TFA inclusive Scenario 3. Consistent with our previous scenario, the developing countries like Indonesia, Malaysia and rest of ASEAN countries will gain the most, in terms of higher purchasing power for their people, with consumer price reductions of 8.13%, 7.28% and 6.63% respectively.

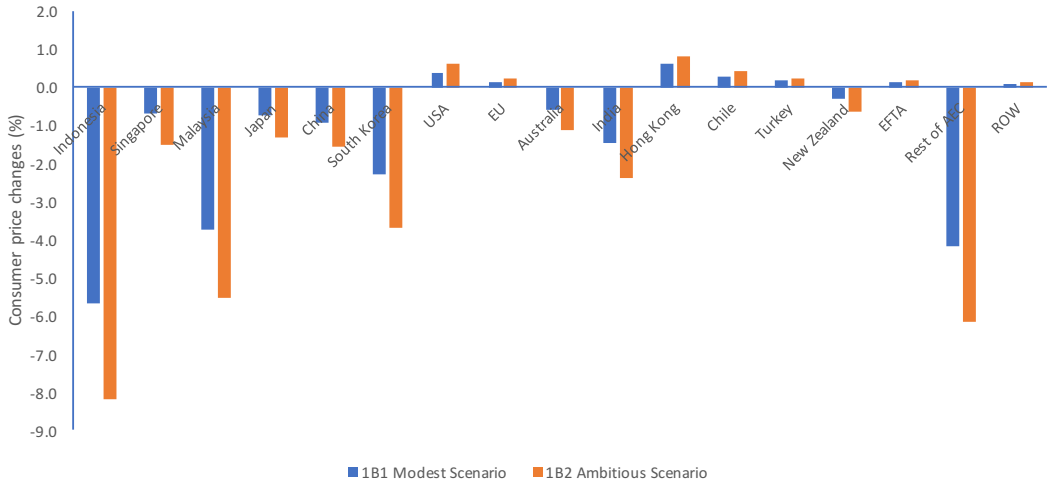

Figure 5.21 Price effects for scenario 3B
Source: Author's calculation

One interesting finding under this scenario is, we notice that although all countries gain from the WTO TFA, in lowering prices, some countries benefit more than others. This was expected as it comes from the NTM reductions that we have modelled. The countries that benefit relatively less are US, EU, Hong Kong, Chile, Turkey and the EFTA countries, with US benefiting least. From this depiction, we can conclude that for the countries which are categorized as high-income countries, the implementation of WTO-TFA will lead to less benefits than for lower income countries. This can be explained by the fact that the high-income countries already have the more efficient customs and border systems when compared to lower income countries. Thus the WTO TFA will lead to larger customs-induced benefits for poorer countries.

Comparison of trade effects

From Figure 5.22 we clearly see that international trade, when adding the WTO-TFA, gets a strong boost: both imports and exports rise significantly. For Indonesia, this is also the case. Imports rise by 29.5% and exports by 13.6% in the ambitious scenario. We do notice that because imports rise faster than exports the current trade surplus Indonesia enjoys turns into a trade deficit. In relative terms (% changes) the effects of Scenario 3 are felt strongest in Indonesia.

The same happens for Malaysia, China, South Korea, India, Turkey and Rest of AEC. The main reason for this is that these countries still have considerable import tariffs and when liberalized they lead to surges in imports. On the other hand, for countries like Singapore, Hong-Kong, the EU, Chile, New Zealand and the EFTA countries, the opposite is the case: the global Scenario 3 will lead to improvements in their trade balance.

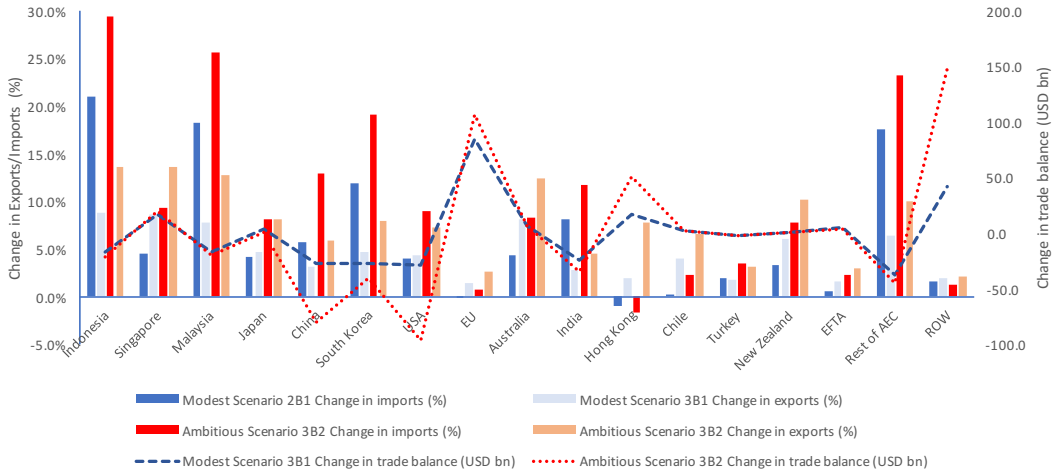

Figure 5.22 Trade effects for scenario 3B
Source: Author's calculation

Impacts on maritime trade

Last, we figure out the impact of the WTO-TFA inclusive scenario on the change in the number of containers and bulk tonnage. Under this scenario, we estimated that Indonesian ports will face an increase of between 887.000 TEU (under the modest scenario) to 1.3 mln TEU (under the ambitious scenario). In terms of cargo bulk tonnage, the additional tonnage is predicted to increase by 1.2 mln tons under the modest scenario and 1.8 mln tons under the ambitious scenario.

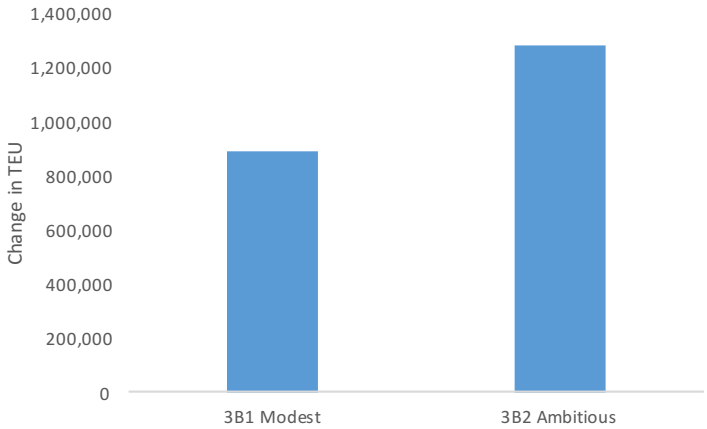

Figure 5.23 Maritime trade impact for scenario 3B: additional containers (TEU)
Source: Author's calculation

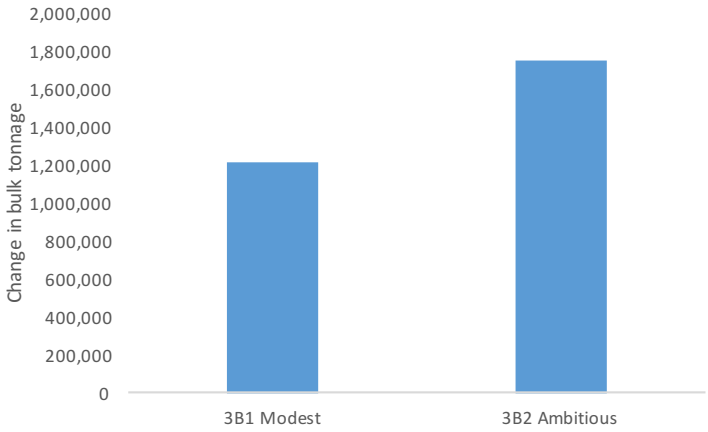

Figure 5.24 Maritime trade impact for scenario 3B: additional tonnage (tons)
Source: Author's calculation

In terms of containers, compared to the current number of TEU, this is an increase of 15% for the modest and 21% for the ambitious scenario. This is an increase that comes on top of the 'normal' increase because it is a consequence of the Indonesian and global (mega-regional and multilateral) trade strategies only, not of autonomous Indonesian growth.

5.6. Comparison of Scenarios

In this last part of our analysis, we provide a clear comparison between all scenarios we have carried out in this study:

- Scenario 1 (B1 and B2 for modest and ambitious): consider Indonesia's trade policy only
- Scenario 2 (B1 and B2 for modest and ambitious): consider Indonesia's trade policy and three global trade policy: OBOR, TPP and TTIP
- Scenario 3 (B1 and B2 for modest and ambitious): consider Indonesia's trade policy, three global trade policy plus WTO-TFA policy

We compare the scenarios to fathom the gradual effect of trade liberalization level from the perspective of Indonesia. In Scenario 1, we only take into consideration Indonesia's trade policy (though in part that is also the trade policy of some other countries in the region, especially when looking at AEC and RCEP). In Scenario 2, we add global mega-regional trade policy initiatives (that Indonesia does not control nor is part of: TPP, TTIP, OBOR) to its own strategic trade policy to see what the combined effects for Indonesia are. Finally, in Scenario 3, we make the most realistic total trade development scenario by adding the newly ratified WTO Trade Facilitation Agreement. Scenario 3, therefore is the most likely realistic combination of effects Indonesia will face (ranging from modest to ambitious realities).

Welfare effects comparison

Focusing on Indonesia's trade policy strategy first: we expect Indonesia to benefit significantly in total welfare from +7.8 bn US$ to +13.0 bn US$. These gains accrue mainly to Indonesian consumers who pay lower prices for their products. This will help the Indonesian middle class. Producer surplus, however, also increases, though not as much as consumer surplus. When we combine Indonesia's trade strategy with the mega-regionals that happen around Indonesia (Scenario 2), we see that compared to Scenario 1, welfare goes down marginally (though is still much higher than it is today). We predict total welfare effects in between +7.3 bn US$ and +12.4 bn US$. This situation is likely caused by the incoming 'pressure' from the mega-regionals that Indonesia is not part of. In the region, TPP is the most influential mega-regional for Indonesia, since some of Indonesia's major competitors in ASEAN (Singapore, Malaysia and Vietnam) are part of the TPP agreement and Indonesia is not. Adding the WTO TFA to Scenario 2, welfare goes up further. For Indonesia, total welfare would be +10.0 bn US$ under the modest scenario and +15.0 bn US$ under the ambitious scenario. This is shown in Figure 5.25.

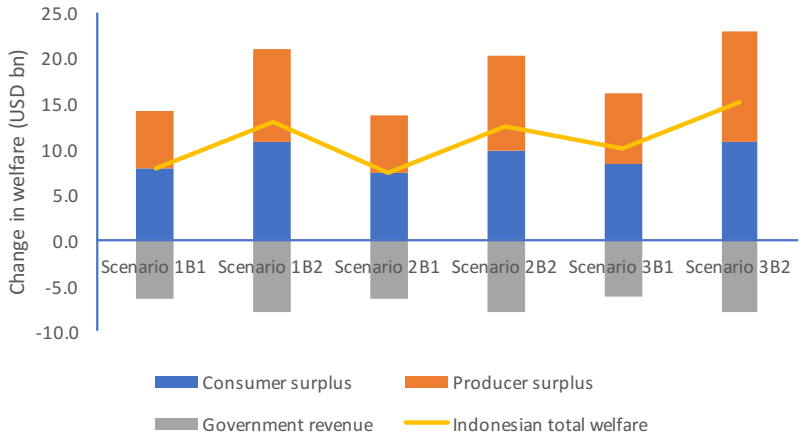

Figure 5.25 Indonesian welfare effects comparison for all scenarios
Source: Author's calculation

When we look at the relative developments of welfare between the scenarios for Indonesia and its trading partners, we can trace the different effects of the Scenarios per country. This is shown in Table 5-5 where, for the ambitious scenarios, the changes in total welfare (so from Scenario 0 (baseline) to Scenario 1, from Scenario 1 to Scenario 2 and from Scenario 2 to Scenario 3) are shown. The first column shows the welfare effects of an ambitious Indonesian trade policy. Indonesia gains a lot, but so do the other ASEAN countries because they are heavily linked to this trade policy (e.g. AEC, RCEP). In moving from Scenario 1 to 2, we see that the effects for Indonesia are marginally negative (-5% welfare): that is the case, because Indonesia is not in one of the mega-regionals and thus loses out compared to China (+113%, OBOR), the US, EU and Turkey (+ 638%, +547%, +388%, TTIP) and Singapore, Japan and Chile (+34%, +103%, +593%, TPP). In other words: because of the mega-regionals other countries again 'close the welfare gap' with Indonesia. When we look

at Scenario 3 – the WTO TFA – we see that Indonesian welfare goes up by 21%, but countries like China (+74%), Turkey (+138%), and India (+141%), benefit even more. This is due to the fact that they are very integrated or because NTM reductions substitute for higher tariff lines. As already mentioned in the previous Section, what is also interesting is that under the third scenario, we that we notice that although all countries gain from the WTO TFA, in lowering prices, we also see that benefits for countries which are categorized as high-income countries are less pronounced (overall). This can be explained by the fact that the high-income countries already have the more efficient customs and border systems when compared to lower income countries. Thus, the WTO TFA will lead to larger customs-induced benefits for poorer countries.

	d(totwelf) Base - Sc1	d(totwelf) Sc1 - Sc2	d(totwelf) Sc2 - Sc3	%d(totwelf) Sc1 - Sc2	%d(totwelf) Sc2 - Sc3
Indonesia	13,0	-0,6	2,6	-5%	21%
Singapore	22,8	7,6	5,7	34%	19%
Malaysia	12,5	4,2	3,4	34%	21%
Japan	13,1	13,4	8,5	103%	32%
China	24,8	28,0	38,8	113%	74%
South Korea	14,2	9,2	7,4	65%	32%
USA	-16,1	103,0	24,2	638%	28%
EU	-12,7	69,6	16,6	547%	29%
Australia	7,4	5,8	2,8	79%	21%
India	3,2	1,8	7,1	56%	141%
Hong Kong	-4,1	14,1	9,6	344%	96%
Chile	-0,4	2,3	0,9	593%	47%
Turkey	-0,7	2,6	2,7	388%	138%
New Zealand	0,8	1,2	0,5	153%	24%
EFTA	-0,8	4,7	6,6	579%	171%
Rest of AEC	4,7	-1,6	2,4	-34%	79%
ROW	-29,2	-15,3	366,7	52%	-825%

Table 5-5 Welfare effects comparison
Source: Own elaboration

A final important point to make with respect to welfare effects, has to do with how tariff revenues evolve. When looking at losses in tariff revenues, we see that Scenario 3B1 – when compared to Scenario 2B1 – and Scenario 3B2 – when compared to Scenario 2B2, shows lower losses in tariff revenues. This is illustrated in Figure 5.26, comparing Scenario 1B2 with 2B2 and 3B2. There is no real difference in how much tariff revenue Indonesia loses between Scenarios 1B2 and 2B2. But in Scenario 3B2, the loss in tariff revenue is much lower. That is the WTO TFA effect: barriers to trade go down, but not the tariff levels. So, more trade crosses borders at the same tariff level. That means total tariff revenue increases because of the WTO TFA agreement. Any policy that reduces NTMs without affecting tariffs will lead to more trade and thus higher

tariff revenues. That is not only so for the WTO TFA but also for Indonesian strategic shipping line policies, both domestic and international (see Tamba,2017; and Triantoro, 2017).

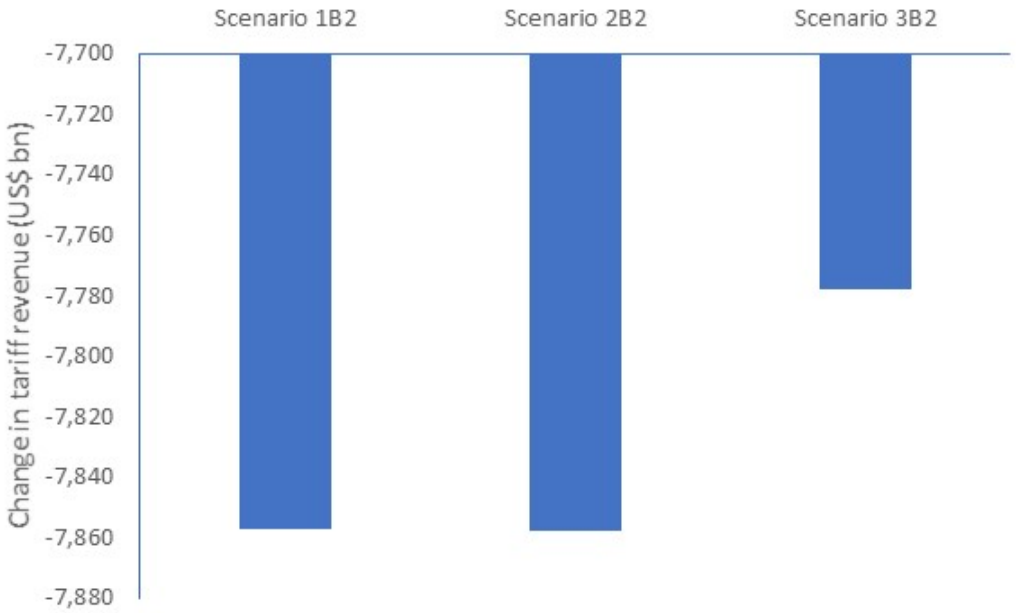

Figure 5.26 Tariff revenue effects for Indonesia for Scenarios 1B, 2B and 3B
Source: Author's calculation

Comparing output effects

When we compare the effects of the trade policy scenarios on output (GDP), we see that between Scenario 1 and 2 the differences are very small. The modest scenario, GDP decreases marginally (from +7.2% to +7.1% of GDP), while in the ambitious scenario it goes up a bit (from +11.5% to +11.7%). The WTO TFA does make a difference according to Figure 5.27. Total Indonesian GDP increases from 7.1% to 8.8% in a modest scenario and from 11.7% to 13.6% in the ambitious scenario. That is a significant rise. We can also conclude from the below that in the ambitious scenario Indonesia's resilience against other trade agreements is higher and the benefits from being inside them is bigger.

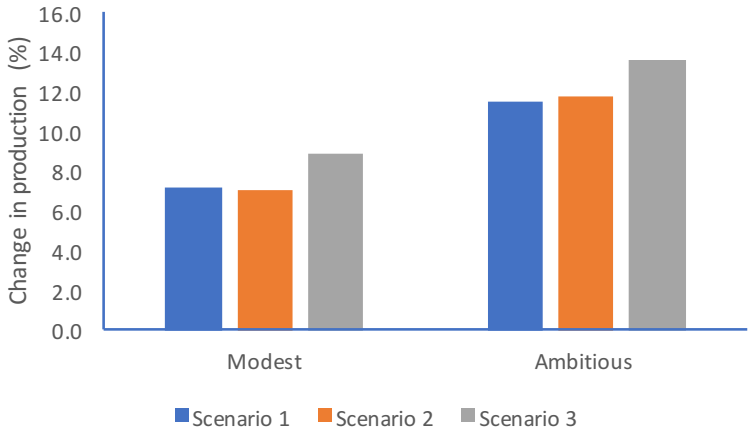

Figure 5.27 Output effects comparison for all scenarios (1)
Source: Author's calculation

In addition, Figure 5.28 represents the gradual output effect as the results of different scenario for each country. We see again that with each (ambitious) scenario Indonesia's GDP goes up a bit: a lot from Scenario 1, marginally – as expected – from Scenario 2, and quite significantly again from Scenario 3. The same increases can be seen for Singapore, Malaysia, Japan, China, South Korea, Australia, India, New Zealand and Rest of AEC (although the strength of the effect of each scenario differs). For the EU and US, the mega-regional scenario is crucial (Scenario 2) to improve their welfare levels (note that US welfare would have risen much more under Scenario 2 if it had remained part of TPP). The same is true for Singapore, Malaysia, China, Japan, Australia, Hong Kong, Chile, New Zealand and EFTA. Finally, an important finding is that for ROW the trade scenarios only have a significant (positive) effect in the final scenario – it is the WTO TFA that leads to positive effects for all countries. This is the multiplier benefit and crux of multilateral work in the WTO.

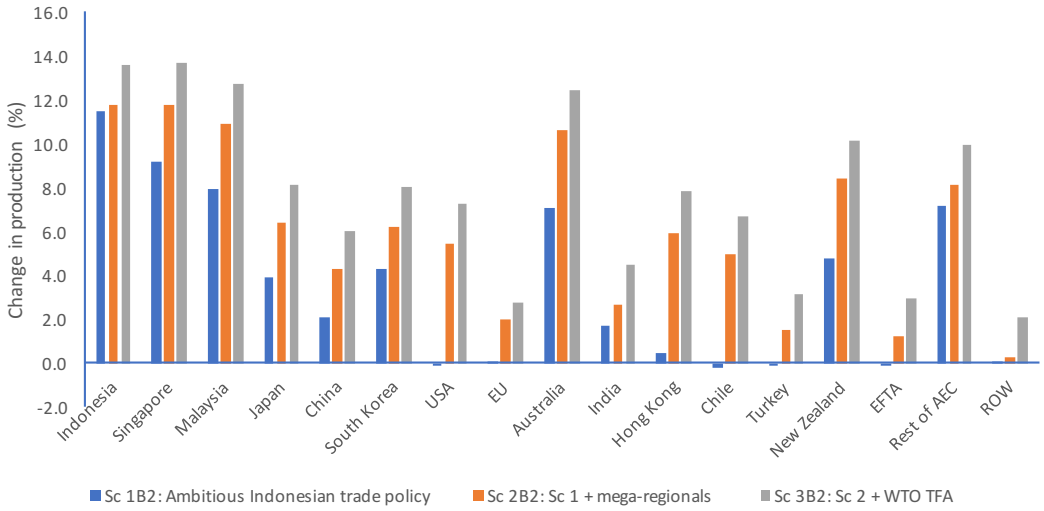

Figure 5.28 Output effects comparison for all scenarios (2)
Source: Author's calculation

Comparing price effects

Price effects are driven by two components: producer prices and consumer prices. In terms of producer prices, Indonesia will face a consistent increase in prices throughout the three scenarios with the biggest increase in Scenario 3B2 (+7.56%). This is great news for Indonesian producers. Consumer prices evolve a little bit different. Under pressure of the mega-regionals (Scenario 2B1 and 2B2), Indonesian consumers will see their purchasing power slightly reduced (prices drop but less than in Scenario 1: from -5.7% to -5.3% under the modest scenario and in the ambitious scenario from -8.2% to -7.4%). This is shown in Figure 5.29. However, when we take the WTO TFA into account consumers gain significantly, seeing a reduction in price levels by 8.13% in the ambitious scenario.

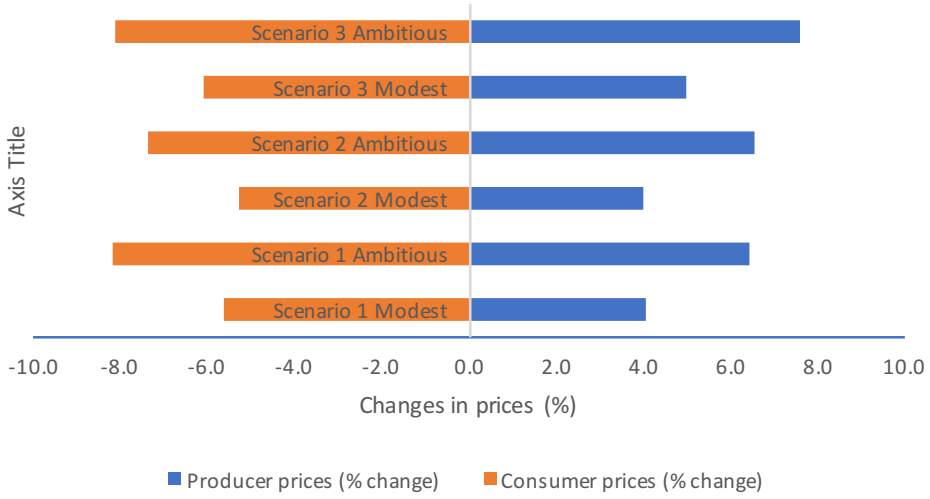

Figure 5.29 Price effects comparison for all scenarios
Source: Author's calculation

Comparing trade effects

When analyzing export and import changes, we refer to Figure 5.10, 5.16 and 5.22. It becomes clear that the general analysis does not change: there is a group of countries – with high original tariffs – for which imports increase much more, as tariffs are being reduced, than exports (i.e. leading to a worsening in their trade balances). This applies to Indonesia, Malaysia, China, and India, for example. For Indonesia, Figure 5.30, shows developments in total trade for each of the (sub)scenarios.

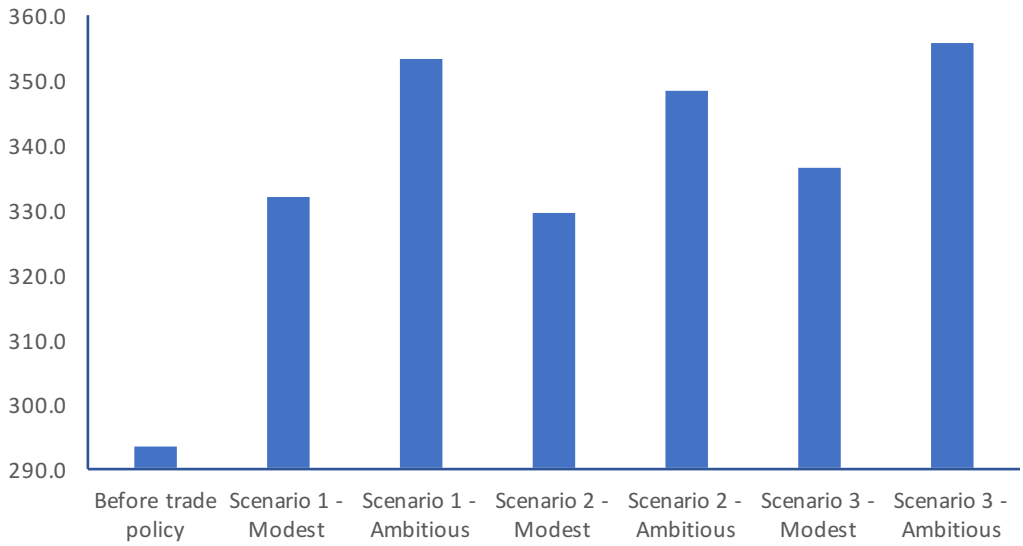

Figure 5.30 Trade effects comparison on overall scenarios for Indonesia
Source: Author's calculation

For the other group of countries – where tariffs are already rather low – exports increase more than imports (because tariff liberalization that leads to more imports is not happening because there are hardly any tariffs left to reduce). This applies to for example Singapore, the EU, Australia and New Zealand).

We also see from Figure 5.31 and Figure 5.32 what trade agreements are the main drivers for trade effects. For Indonesia, all scenarios matter, but 1 and 3 most. For Singapore, Malaysia and Japan there is benefit in each of the three scenarios, while for the EU (and Turkey) and the US trade gains come from Scenario 2 (TTIP). Also TPP is believed to be a main driver behind Scenario 2, as we can also see from the figures that the Singapore, Malaysia, Japan, South Korea, Australia and New Zealand are TPP members hence they see trade increase a lot in Scenario 2. Scenario 3 benefits everyone in trade terms – the crux of the immense benefit of the WTO.

Figure 5.31 Trade effects comparison for all modest scenarios
Source: Author's calculation

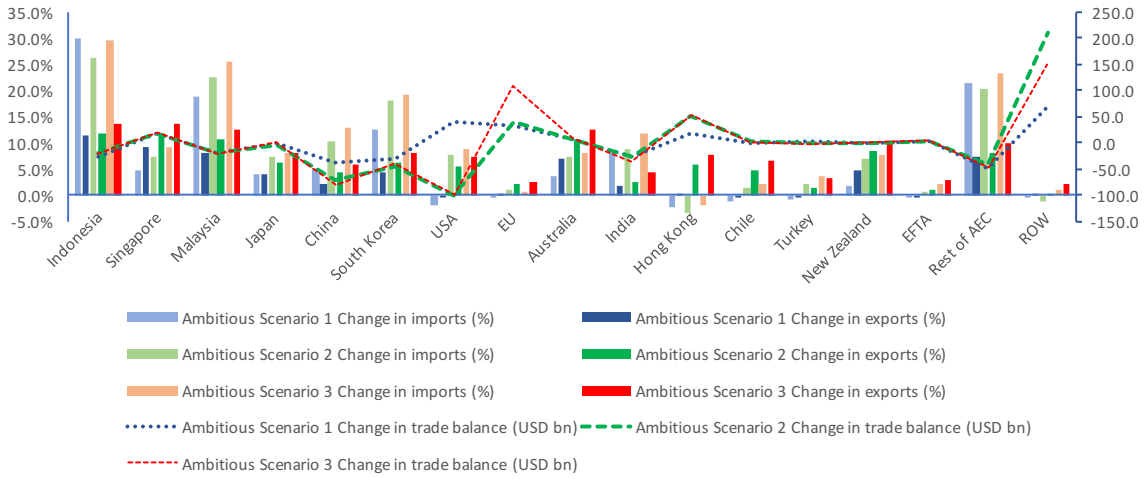

Figure 5.32 Trade effects comparison for all ambitious scenarios
Source: Author's calculation

Comparing maritime trade effects

The comparison of maritime trade impacts across all scenarios is presented in Figure 5.33 and 5.34 (for additional containers and bulk cargo). The pattern is coherent with our previous observations on total trade effects. Indonesia's trade policy strategy leads to many more containers and tons of bulk cargo in Indonesian ports. The mega-regionals have a small trade diversion effect, so for Indonesia, the numbers of containers and tons of bulk cargo decrease a bit. When adding the WTO TFA, trade increases significantly, leading to an annual one-time increase of up to 1.8 mln tons of cargo and 1.3 mln TEU. Indonesia's ports need to look at these figures and assess what this means for their container and bulk cargo handling capacities.

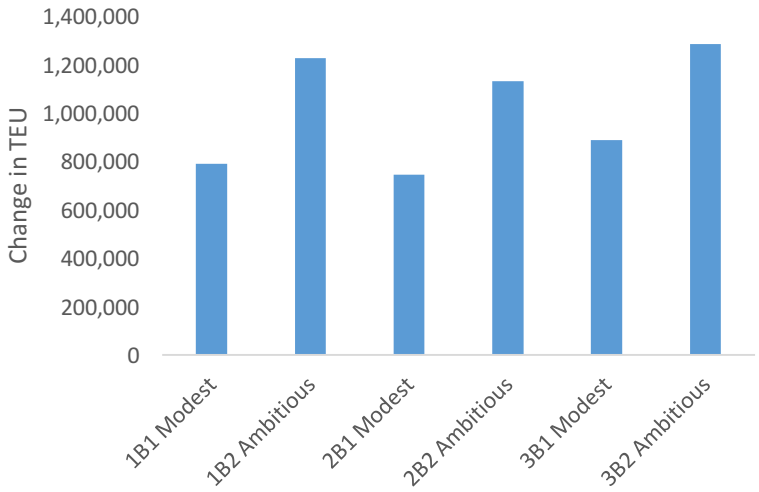

Figure 5.33 Maritime trade impacts on overall scenarios: additional containers (TEU)
Source: Author's calculation

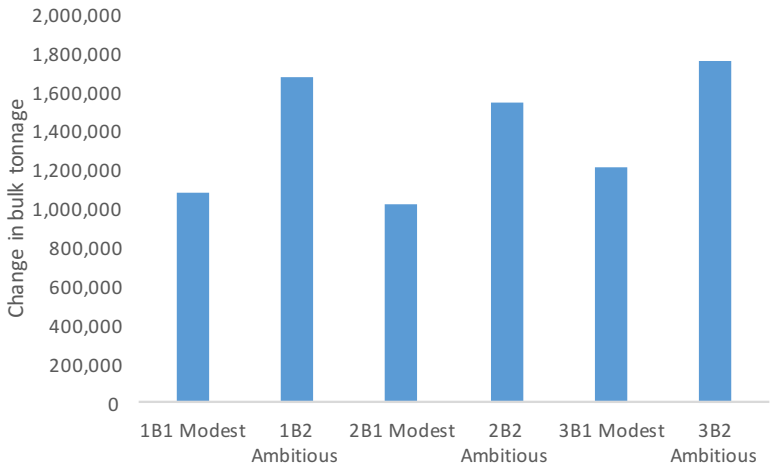

Figure 5.34 Maritime trade impacts on overall scenarios: additional tonnage (tons)
Source: Author's calculation

Chapter 6: Conclusions and discussion

6.1. The joint research project

This study is the first and integral part of the joint-research project: Indonesian Trade, Shipping Network, and Maritime Investment Analysis. The research project comprises five different focus areas which aim to provide a full-comprehensive analysis on both international and domestic aspects which will potentially impact the Indonesia's future economy in relation with its visionary goal to become the global maritime axis. As the first part, this study focuses on assessing the influence of international trade policies, whether actively conducted by Indonesia (bilaterally or via ASEAN) or influenced by the global policy, which will eventually affect the Indonesia's maritime transport. The results obtained from this study will be deemed in the compilation study conducted by Wiragi (2017) in summing up the overall conclusion of the joint-research project.

6.2. Methodological approach

This study aims to answer the following main research question: *What is the economic and maritime trade impact of Indonesian and (most important) global trade policy developments?*

The first step in this study is carrying out a literature study on the theory of trade and economics, which aims to highlight the concept of trade and its implications for the economic conditions of one or a group of countries. Furthermore, we also investigate the current approach to trade policy in Indonesia, along with trends in global trade policies. This first stage produces two main trade policy strategy insights: both an Indonesian and global trade policy strategy – which we use as the basis for our study.

In the second step, we identify the main trading partner countries of Indonesia. We track data of trade with and foreign direct investments in Indonesia. The results of this partner prioritization are combined with the investigation of Indonesia's trade policy strategy from the previous step. We thus obtain the list of countries which will be the focus of our study – the potential trading partner countries of Indonesia.

In the third step, we begin to simulate most likely possible trade futures by using an econometric model, called the Global Simulation model (GSIM). The selection of this model is based on the accuracy and the output variable requirements of our study. To obtain results on a broader spectrum of possible futures, we construct several simulations that we build up gradually: (1) We start with a focus on Indonesia's trade policy initiatives and strategy, (2) We then add the influence of global trade policy initiatives (in particular the mega-regionals), and (3) We then add the WTO's Trade Facilitation Agreement (TFA) as the recently effectuated multilateral policy initiative. In the first scenario, we specifically deepen our analysis of Indonesia's trade policy.

Because this trade policy does not happen in isolation (in reality), we add the global initiatives to combine them in a realistic global trade future, Scenario 3. Since we do not know the future for certain, for each of the aggregated scenarios, we run our simulations based on two sub-scenarios: modest and ambitious. The trade scenario development is done in collaboration with Wiragi (2017), whose research is also part of the Joint Research Project. He combines the international trade aspects of this study with results from other studies under the Joint Research Project which are also based on improvements in Indonesia's international shipping networks (Tamba, 2017), improvement in Indonesia's domestic shipping lines (Triantoro, 2017), and maritime investments in Indonesia (Kalinichenko, 2017).

The results of the trade simulations are presented in the form of economic and trade impacts (as per the research question), which we define as welfare effects (both aggregate and disaggregated into producer, consumer and tariff revenue effects), output effects, price effects and trade effects. All variables are provided by the GSIM model. In the last step of our analysis, we convert the trade effects derived from the simulations into the maritime trading values, namely TEU (containers) and tonnage (bulk cargo).

6.3. The 10 key takeaways

Key takeaway 1: Indonesia's trade policy strategy
Based on an assessment of total trade, exports, imports and investments, we conclude that Indonesia's main trade partners are: China, Japan, Singapore, the US, Malaysia, South Korea, Australia, India, Hong Kong, Chile and Turkey. In addition, two integrated regions also matter significantly: the EU and EFTA. Indonesia, at present, is engaged in a total of 20 FTAs: ten existing FTAs and ten prospective FTAs that could be concluded in the next five years (and that that are currently being negotiated). The prospective FTAs are the main focus of our study, because the existing FTAs are already in our trade baseline. The prospective FTAs consist of seven bilateral FTAs (Indonesia-Australia CEPA, Indonesia-India CECA, Indonesia-Chile FTA, Indonesia-Rep. of Korea FTA, Indonesia-Turkey CEPA, Indonesia-EU CEPA, Indonesia-EFTA CEPA); one bilateral FTA under ASEAN (ASEAN-Hong Kong FTA); and two regional FTAs (AEC and RCEP).

Key takeaway 2: Global trade policy developments in the world
The development of international trade policy trends in the last ten years is leading up to the formation of mega-regional trade agreements, including TPP, TTIP, RCEP, and the OBOR initiative from China. However, in the past year, there has been a dramatic change in this trend in the form of Brexit and the election of Donald Trump as the president of US. These two notable events immediately changed the tendency of trade liberalization to protectionism in some parts of the world. TPP is expected to continue without the US. The OBOR initiative of China moves ahead, and, while TTIP is momentarily at a stand-still, expectations are for a revival in the near future. In

addition, in March 2017, the WTO Trade Facilitation Agreement was ratified by over 2/3 of WTO members, coming into effect.

Key takeaway 3: Main Indonesian welfare effects

In term of welfare effects, the most important bilateral FTAs for Indonesia – that it is currently negotiating – are the EU, India and Rep. of Korea. RCEP and ASEAN integration (AEC), however, matter much more for Indonesia. The global mega-regionals do not benefit Indonesia much, but they do benefit Indonesia's direct competitors (e.g. Singapore, Malaysia) because they are part of the TPP and OBOR mega-regionals. Indonesia's own trade strategy does provide some counterweight. The WTO TFA benefits Indonesia further, but also other countries in the region. Total welfare gains if we take all ambitious developments into account amount to 15.0 US$ bn for Indonesia. Consumers in Indonesia benefit a lot – they see welfare go up by 10.6 US$ bn in an ambitious scenario and consumer prices drop by 8.13%. In addition, an ambitious trade policy is also highly beneficial for Indonesian producers: their prices to up by 7.56% and their additional revenues amount to 33.4 US$ bn. The Indonesian government, however, does lose tariff revenues because of trade liberalization and the trade balance because negative (because previous levels of protectionism make way for integrating the Indonesian economy into the rest of the region and world).

Key takeaway 4: Indonesia's trade deficits

The trade effects obtained from the simulation results indicate that the enactment of FTAs both bilaterally and regionally will lead to an increase in Indonesia's trade deficit. Indonesia will see imports rise relatively faster than exports. This is something that the Indonesian government may not really appreciate. There are two things worth to keep in in mind though. First, a trade deficit does not only mean more imports than exports, it also means an inflow of foreign investments that lead to increases in Indonesian productivity. Second, once tariffs are much lower (as is the case for Singapore, for example) the effects of trade agreements in the future will be to improve the trade balance again because more market access abroad is then a stronger force than lower tariffs domestically (because they are already low). It is for this reason that with every FTA, mega-regional, etc. Singapore benefits more than Indonesia.

Key takeaway 5: Main Indonesian GDP effects

The effect on GDP is indicated by an increase in output. In our simulations, Indonesia's GDP consistently experiences a very significant increase under all scenarios. If we look at the GDP effect of Indonesia's ambitious trade policy scenario, we find that the increase is 11.45%. If we look at Indonesia's trade policy strategy, in a changing world of mega-regionals and the WTO TFA, we see that it goes up by 13.61%. This suggests that a more open Indonesian economy will have a very significant positive effect on the Indonesian economy: with happier consumers and producers. As a developing country, it will be very meaningful for Indonesia to catch up with its main competitors such as Singapore and Malaysia. Higher productivity will

attract more foreign direct investment, and this will lead to better living standards for the Indonesian people.

Key takeaway 6: Main Indonesian price effects
Almost the same as output effects, international trade will have a positive impact on via lower consumer prices for Indonesia as well as higher producer prices. Lower consumer price can be interpreted as increasing purchasing power of the Indonesian people, due to lower prices for shopping, petrol, etc. This effect can be generalized to other countries such as Malaysia and the Rest of ASEAN countries, who see a similar effect. More open trade also means the import of competitive products that can further improve the living standards of people in Indonesia. On the producer side, we see that producer prices go up. This is a sign of more and better market access for competitive Indonesian producers. For import-competing producers, however, the important negative effect is that they have to compete with very low-priced imports and may have to shift activities or go bankrupt. Workers then have to re-allocate to other sectors where high salaries are paid. This is a painful process in the short-run.

Key takeaway 7: Main value trade effects of Indonesian and global trade policy
From changes in trade values, we see a very significant increase in both Indonesian imports and exports, leading to a sharp increase in total trade. Imports, however, rise much faster than exports because the previously protective Indonesian economy opens up. As expected, mega-regionals that Indonesia is not part of, will put pressure on the Indonesian economy (unlike – for example Singapore – that is also part of OBOR and TPP). The effect of the WTO-TFA policy is a further addition to trade. Compared to no trade policy, total trade under ambitious scenario will go up by 21.3% (imports by 29.5% and exports by 13.6%).

Key takeaway 8: Main economic and trade effects for third countries
Under the different scenarios, third countries gain differently. For third countries that are part of Indonesia's trade policy strategy, gains accrue from an FTA with Indonesia (or in a regional agreement with Indonesia). Singapore and China will gain a lot because they are in AEC/RCEP and RCEP respectively. In the mega-regional scenario, where US is projected to successfully form TTIP with EU, the welfare effects will surge drastically for those two countries (and Turkey because of its Customs Union with the EU). In the WTO-TFA scenarios all countries gain, but developing countries relatively more than developed countries. So, in the end, all countries are predicted to experience positive increase in their welfare, even the ROW countries, because of the impact of the WTO-TFA policy.

Key takeaway 9: Main Indonesian container trade flow effects
In accordance with the predicted increase in Indonesian trade values (355.86 US$ bn in the ambitious Scenario 3), container trade flows for Indonesia will also increase significantly. Our simulation results show that Indonesia's bilateral FTAs with EU, Rep. of Korea and India will contribute to the highest rise in the number of containers (with 3.5%, 1.8% and 1.5% respectively). Meanwhile, when all Indonesia's and global

trade policies, as well as the WTO-TFA policy are in place and enforced, the number of containers that enter/leave the Indonesian ports will rise by 21% - a total TEU of 1.28 million. This situation should be anticipated by the government and container terminals in Indonesia.

Key takeaway 10: Main Indonesian bulk tonnage trade flow effects
Similar to the increase in container shipping, Indonesia's and global trade policy will also generate large impacts on the flow of bulk cargo from and to Indonesia. Bulk cargo percentage is 35% of the total tonnage value of seaborne trade in Indonesia, and it is expected to increase by 20% under Indonesia's trade policies only, and 21% under the enactment of both the mega-regionals and WTO-TFA policy (in the ambitious scenario). This amounts to 1.75 million extra tons each year.

6.4. Policy recommendations

In this research project, five students have conducted the observations on five different aspects to understand the influence of international and domestic factors on Indonesia's future economy, particularly from the maritime transport sector. As the first study in this project, we have analyzed the economic and trade impact of Indonesia's and global trade policies. From our study, we can deduce some useful policy lessons for Indonesia:

1. In response to the impacts generated by each of Indonesia's FTAs that being carried out throughout the first study, we advise the Indonesian government to take a strategic movement by prioritizing the bilateral trade agreements with countries which potentially provide bigger benefits for Indonesia. These include the bilateral agreements with EU, Rep. of Korea and India.
2. Considering the magnitude impacts as the results of several regional FTAs involving Indonesia such as AEC and RCEP, Indonesia will experience a steep leap in its economy. At the same time, challenges will come in the form of more intense competition for the Indonesian local producers as they need to face the flood of cheap imported products. The government of Indonesia needs to force a proper preparation in order to ensure the local producers will possess sufficient capability to survive, and also to be more focus in the Indonesian area of specialities.
3. The more open economy will attract more direct investment from foreign countries. Moreover, it will also ease the flow of labors across the countries within the agreements. For these two reasons, it is important for the government of Indonesia to prepare its labor competencies to anticipate the rise of unemployment as the consequence of inability to compete with foreign labors. This issue is actually very sensitieve as it may relate to the political concerns, so an extra-cautious action will be required.

4. The increasing volume of trade as a result of FTAs implementation whether bilateral, regional and global, will directly affect the increasing volume of maritime transport, given 99.91% of Indonesia's trade is conducted by sea. In addressing this, the development of maritime, logistics and supply chain infrastructure as well as the direction of trade policy should be done in harmony so as not to incriminate each other.
5. The last scenario in our simulation has projected the ultimate influence of the WTO-TFA policy in escalating the welfare effects of countries throughout the world, including Indonesia. Hence, it will be necessary for the government of Indonesia to to speed up the ratification of such policy into its domestic regulations.

6.5. Limitations and areas for further research

One of the biggest challenges when carrying out this study is to filter the most significant FTAs, either Indonesian or global ones. The provided information is sometimes very limited, and it is so dynamic, meaning that the movement of interest in trade policy may change briefly and suddenly, depending on the political situation. For example, Donald Trump as US president has completely changed the direction of TPP by pulling of US from the agreement. Also, there is an overlap in trade strategies. For example, it is in Indonesia's interest (and trade policy strategy) to work on AEC and RCEP, but this is also the trade policy for Singapore, China, Malaysia and others. So it is difficult to speak of 'Indonesia's trade policy' in a pure sense. Apart from that, there are still many agreements – with a more in-depth study – that can be potentially considered in our model, such as TiSA, CETA, and other bilateral agreements that Indonesia has plans to cooperate with but still no clarity on (e.g. a plan to form an FTA with the African countries). Moreover, our study also does not include the other bilateral trade agreements which have been formed (or still being negotiated) between the third countries (for example, the Malaysia – EU FTA). This fact is actually influencing, but it would go too far beyond our study.

The other limitation is related to the application of GSIM model. Though we are very satisfied with the GSIM model and still consider it as the most suitable model in our case, we still leave a room to think about comparing the results with another model such as CGE as a general equilibrium model. First, we face difficulties when setting the final tariffs and NTMs used as the model inputs, particularly when we are still not clear on which agreements will come first, and how the parameters would be set when combined with other agreements. Also, the second order effects of CGE models could lead to some different outcomes that need to be verified. In addition, it is a limitation of the partial equilibrium models, like GSIM, that it cannot link all sectors and show at sector level results, for an economy. Hence some forms of linkages cannot be easily interpreted without a general understanding of the situation.

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Appendices

Appendix 1. Indonesia Sea-borne Trade 2000 to 2015

Pelabuhan Utama	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Belawan	2,159	2,348	2,270	1,935	2,743	3,116	3,795	4,150	5,182	4,575	5,505	6,085	6,061	6,204	6,702	6,269
Dumai	500	586	923	801	461	1,021	768	911	755	507	1,170	2,145	2,022	1,704	1,745	1,582
Pulau Sambu	1,722	767	838	717	559	1,127	838	977	2,247	408	309	616	90	663	55	63
Tanjung Uban	25	47	430	746	1,412	1,344	973	1,662	1,017	592	756	878	2,269	1,753	2,282	1,833
Boom Baru	-	-	295	270	63	259	338	335	343	219	395	600	590	-	1,061	1,543
Kota Agung	3,618	3,839	4,479	3,588	3,331	6,269	4,400	1,848	268	1,344	1,140	1,469	1,776	2,518	1,614	898
	2,999	2,120	2,370	1,454	1,577	2,877	3,296	3,747	6,555	6,136	7,728	9,198	10,303	9,915	9,905	10,044
Tanjung Priok	18,944	17,884	19,864	18,244	22,218	21,424	21,318	23,563	28,363	24,180	28,655	33,609	36,972	36,880	35,678	32,309
Sukarno Hatta [1]	158	102	54	34	62	41	39	50	101	82	104	115	129	123	116	136
Merak	5,096	3,295	4,107	3,707	5,202	3,652	4,536	4,288	5,400	5,997	6,722	7,279	7,286	4,276	9,435	6,735
Cigading	2,977	2,010	2,625	2,737	4,998	4,392	6,098	6,357	5,190	4,765	6,926	7,628	7,979	11,341	12,638	15,177
Tanjung Emas	989	1,248	1,030	1,190	1,435	1,388	1,436	1,828	2,510	2,690	3,117	3,622	3,762	18,289	4,225	4,543
Cilacap	9,149	10,217	10,422	11,060	12,005	11,173	9,873	9,310	8,467	7,599	8,574	9,607	9,916	7,610	11,359	11,931
Tanjung Perak	8,746	7,846	9,297	9,005	9,765	10,481	11,220	12,790	14,616	12,790	15,685	17,799	18,167	9,850	18,543	17,614
	5,316	6,360	6,308	6,436	6,209	6,779	5,905	8,832	9,463	8,184	9,305	13,207	14,613	13,961	16,091	19,244
Ngurah Rai [1]			4	3	3	2	1	2	3	3	3	4	5	4	4	4
Benoa/Loloan	21	2	30	6	5	6	7	664	669	764	929	854	67	32	47	52
Bima	62	70	81	86	73	115	93	91	84	73	59	71	83	41	28	0
Waingapu				1	1	4	41	42	-	-	11	24	97	53	4	1
Lembar	-	-	8													
Buleleng	-	-														
Bali dan Nusa Tenggara lain	37	18	76	41	10	45	3	9	8	13	104	58	53	398	249	146
Pontianak	193	128	164	158	112	103	91	120	111	106	155	181	380	525	678	528
Kota Baru	217	196	125	78	114	138	248	118	95	898	2,124	2,674	2,900	2,726	2,433	81
Balikpapan	2,684	4,749	5,890	6,262	7,429	5,806	5,859	5,743	4,518	6,851	7,172	5,715	5,535	7,236	7,125	7,684
Samarinda	110	219	154	148	101	177	224	172	245	159	475	424	395	396	514	346
Tanjung Sangata	31	40	62	34	46	97	119	89	139	146	177	476	765	891	661	545
Lingkas Tarakan															236	88
	174	125	108	125	67	195	543	364	272	234	810	940	980	1,368	1,166	3,423
Bitung	61	0	73	66	10	19	7	17	7	7	37	137	141	120	84	76
Pantoloan	-	0	22	12	3	7	3	1	26	2	17	23	4	13	48	21
Ujungpandang	503	517	57	383	581	589	710	898	823	1,015	1,156	1,328	1,407	864	1,028	917
Malili, Sulawesi	245	215	129	50	37	456	522	488	509	266	490	380	243	314	322	-
	178	128	61	37	424	73	22	36	42	134	51	281	486	520	845	2,386
Ambon	3	0	29	1	0	1	15	19	107	129	291	334	389	345	383	414
Sorong	18	33	17	3	1	17	-	-	-	10	10	24	14	9	6	7
Amamapare	324	446	302	285	264	472	466	417	528	468	479	379	394	161	391	230
Maluku dan Papua Lainnya	132	12	41	1	2	0	5	0	4	9	61	60	14	9	33	223
Jumlah	**67,389**	**65,567**	**72,741**	**69,705**	**81,321**	**83,665**	**83,809**	**89,936**	**98,664**	**91,354**	**110,701**	**128,222**	**136,284**	**141,110**	**147,734**	**147,093**
Total trade	67,389	65,567	72,741	69,705	81,321	83,665	83,809	89,936	98,664	91,354	110,701	128,222	136,284	141,110	147,734	147,093
Air-borne trade	158	102	58	37	64	43	41	52	104	85	108	119	134	127	120	140
Sea-borne trade	67,231	65,464	72,683	69,668	81,256	83,621	83,768	89,884	98,561	91,270	110,593	128,103	136,149	140,983	147,615	146,953
% of sea-born trade (yearly)	**99.77%**	**99.84%**	**99.92%**	**99.95%**	**99.92%**	**99.95%**	**99.95%**	**99.94%**	**99.90%**	**99.91%**	**99.90%**	**99.91%**	**99.90%**	**99.91%**	**99.92%**	**99.90%**
Catatan:	[1] Airport											Total average 2000-2015				**99.91%**

Source: Indonesia Bureau of Statistics (2017)

Appendix 2. GSIM Input Matrix: Trade Flows (billion USD) and Elasticities

Initial Trade Flows

TRADE	d: destination																	
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW	
Indonesia	0.1	12.6	7.6	18.0	15.0	7.7	16.3	17.0	3.7	11.7	2.1	0.1	1.2	0.4	1.1	10.6	25.2	
Singapore	28.3	0.0	37.8	15.2	47.7	14.5	23.2	21.0	11.5	10.6	39.7	0.1	0.5	1.7	2.1	24.4	68.3	
Malaysia	7.5	27.8	0.0	18.9	26.1	6.5	18.9	25.2	7.2	8.1	9.5	0.2	1.0	1.0	0.6	16.5	25.1	
Japan	11.5	19.9	12.0	0.0	109.3	44.0	126.4	66.4	12.8	8.1	35.0	1.7	2.2	2.1	3.7	39.1	130.7	
China	34.3	51.9	44.0	135.6	0.0	101.3	410.0	389.0	40.3	58.2	330.5	13.3	18.6	4.9	6.2	81.0	554.4	
South Korea	7.9	15.0	7.7	25.6	137.1	0.0	70.1	47.0	10.8	12.0	30.4	1.7	6.2	1.3	6.3	16.4	131.1	
USA	7.1	28.4	12.3	62.4	116.1	43.4	0.0	276.3	25.0	21.5	37.1	15.4	9.5	3.6	4.0	19.9	819.7	
EU	11.0	32.9	14.8	62.6	188.8	53.0	411.4	3,343.5	34.9	42.3	39.1	9.2	87.5	5.1	225.0	23.2	800.3	
Australia	3.7	5.1	3.4	29.8	61.0	13.3	10.0	10.4	0.0	7.9	2.4	0.2	0.4	6.3	0.6	4.6	28.7	
India	2.9	7.8	4.9	4.5	9.6	3.6	40.3	43.8	3.3	0.0	12.1	0.7	4.4	0.3	1.5	19.0	105.7	
Hong Kong	3.2	9.8	3.8	15.9	287.5	7.3	44.3	5.8	4.7	13.3	0.0	0.6	1.0	0.6	4.5	20.0	88.2	
Chile	0.1	0.1	0.2	5.5	16.7	4.1	8.3	9.1	0.4	2.0	0.1	0.0	0.3151955	0.1	0.6	3.1	12.7	
Turkey	0.2	0.4	0.4	0.3	2.4	0.6	6.4	68.4	0.5	0.7	0.3	0.2	0.0	0.1	6.2	7.5	49.3	
New Zealand	0.6	0.8	0.7	2.1	6.0	1.1	4.0	3.9	5.9	0.4	0.5	0.1	0.1	0.0	0.1	1.3	6.9	
EFTA	0.7	9.4	2.2	8.2	23.4	5.1	4.9	200.5	2.9	21.8	25.6	0.4	3.2	0.2	2.0	3.5	89.5	
Rest of AEC	8.6	13.2	11.8	35.6	35.8	8.0	34.8	35.1	10.4	7.2	18.4	0.7	1.0	1.7	3.7	27.7	74.4	
ROW	14.9	61.6	12.6	185.2	597.1	123.1	1,084.0	729.1	25.8	164.9	66.2	18.3	70.2	7.1	69.5	15.8	13,490.0	

Elasticities

ELASTICITIES	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
composite D	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
substitution	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
supply	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75	1.75

Appendix 3. GSIM Input Matrix: Initial Tariff Measures (All Scenario)

Initial Tariffs for All Scenarios

ImportTAX (TM=1+tm)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	1.0016	1.0622	1.0413	1.0946	1.1005	1.0438	1.0741	1.038	1.1138	1	1.06	1.0628	1.0336	1.06143333	1.07654	1.0957
Singapore	1.0721	1	1.0544	1.0246	1.0884	1.1025	1.0319	1.0579	1.0322	1.109	1	1.0599	1.0395	1.0253	1.0491	1.07218	1.0955
Malaysia	1.0666	1.0012	1	1.0336	1.091	1.0961	1.0344	1.0613	1.0346	1.1006	1	1.0599	1.0427	1.0287	1.04766667	1.07246	1.0952
Japan	1.0699	1.0012	1.0565	1	1.0951	1.0904	1.0367	1.0553	1.0324	1.1041	1	1.0598	1.0413	1.0266	1.0385	1.073	1.0936
China	1.0721	1.0011	1.0556	1.0413	1	1.1121	1.0359	1.0661	1.0311	1.1069	1	1.0599	1.0528	1.0256	1.0491	1.06942	1.095
South Korea	1.07	1.0016	1.0589	1.0353	1.0919	1	1.0376	1.0679	1.0353	1.0987	1	1.0599	1.0437	1.0285	1.04766667	1.07306	1.0939
USA	1.0705	1.0011	1.052	1.0465	1.0959	1.1267	1	1.0616	1.0302	1.1148	1	1.0599	1.0561	1.0241	1.0522	1.07392	1.0958
EU	1.0733	1.001	1.0529	1.0452	1.0964	1.1164	1.0359	1	1.0302	1.1208	1	1.0598	1.0764	1.024	1.08533333	1.0735	1.096
Australia	1.0741	1.0017	1.0512	1.0679	1.0928	1.1596	1.0352	1.0705	1	1.1116	1	1.0599	1.0528	1.0251	1.05746667	1.08272	1.0958
India	1.0696	1.0015	1.0495	1.0463	1.0922	1.1208	1.0387	1.0714	1.0348	1	1	1.06	1.0537	1.0291	1.05823333	1.0633	1.0947
Hong Kong	1.0757	1.0018	1.0555	1.0309	1.0947	1.0803	1.0398	1.0629	1.0358	1.0991	1	1.0599	1.045	1.0323	1.1989	1.07476	1.0945
Chile	1.0954	1.022	0.0218	1.1038	1.0885	1.1499	1.0328	1.111	1.0307	1.1233	1	1	1.1504	1.0265	1.0648	1.070825	1.101
Turkey	1.0794	1.0032	1.0602	1.0554	1.0986	1.102	1.045	1.0772	1.0441	1.1073	1	1.06	1	1.0371	1.06803333	1.08508	1.095
New Zealand	1.0778	1.0039	1.0399	1.0697	1.0919	1.1481	1.0341	1.0746	1.0332	1.1094	1	1.06	1.0398	1	1.07203333	1.09526	1.0994
EFTA	1.06516667	1.00223333	1.04623333	1.0225	1.08226667	1.0787	1.02923333	1.06063333	1.02936667	1.08506667	1	1.0597	1.04706667	1.02643333	1	1.06051	1.09596667
Rest of AEC	1.07973333	1.01231667	1.04121667	1.06866667	1.10143333	1.12926667	1.06645	1.0989	1.03355	1.11183333	1	1.06	1.07626667	1.04806667	1.09074444	1.06707083	1.10656667
ROW	1.0722	1.0009	1.0512	1.0509	1.0967	1.1334	1.0354	1.0711	1.0269	1.1393	1	1.0598	1.1078	1.0206	1.08553333	1.06866	1.0968

Scenario 1A1

ImportTAX (TM=1+tm)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	1.0016	1.0622	1.0413	1.0946	1.1005	1.0438	1.0741	1	1.1138	1	1.06	1.0628	1.0336	1.06143333	1.07654	1.0957
Singapore	1.0721	1	1.0544	1.0246	1.0884	1.1025	1.0319	1.0579	1.0322	1.109	1	1.0599	1.0395	1.0253	1.0491	1.07218	1.0955
Malaysia	1.0666	1.0012	1	1.0336	1.091	1.0961	1.0344	1.0613	1.0346	1.1006	1	1.0599	1.0427	1.0287	1.04766667	1.07246	1.0952
Japan	1.0699	1.0012	1.0565	1	1.0951	1.0904	1.0367	1.0553	1.0324	1.1041	1	1.0598	1.0413	1.0266	1.0385	1.073	1.0936
China	1.0721	1.0011	1.0556	1.0413	1	1.1121	1.0359	1.0661	1.0311	1.1069	1	1.0599	1.0528	1.0256	1.0491	1.06942	1.095
South Korea	1.07	1.0016	1.0589	1.0353	1.0919	1	1.0376	1.0679	1.0353	1.0987	1	1.0599	1.0437	1.0285	1.04476667	1.07306	1.0939
USA	1.0705	1.0011	1.052	1.0465	1.0959	1.1267	1	1.0616	1.0302	1.1148	1	1.0599	1.0561	1.0241	1.0522	1.07392	1.0958
EU	1.0733	1.001	1.0529	1.0452	1.0964	1.1164	1.0359	1	1.0302	1.1208	1	1.0598	1.0764	1.024	1.08533333	1.0735	1.096
Australia	1	1.0017	1.0512	1.0679	1.0928	1.1596	1.0352	1.0705	1	1.1116	1	1.0599	1.0528	1.0251	1.05746667	1.08272	1.0958
India	1.0696	1.0015	1.0495	1.0463	1.0922	1.1208	1.0387	1.0714	1.0348	1	1	1.06	1.0537	1.0291	1.05823333	1.0633	1.0947
Hong Kong	1.0757	1.0018	1.0555	1.0309	1.0947	1.0803	1.0398	1.0629	1.0358	1.0991	1	1.0599	1.045	1.0323	1.1989	1.07476	1.0945
Chile	1.0954	1.022	0.0218	1.1038	1.0885	1.1499	1.0328	1.111	1.0307	1.1233	1	1	1.1504	1.0265	1.0648	1.070825	1.101
Turkey	1.0794	1.0032	1.0602	1.0554	1.0986	1.102	1.045	1.0772	1.0441	1.1073	1	1.06	1	1.0371	1.06803333	1.08508	1.095
New Zealand	1.0778	1.0039	1.0399	1.0697	1.0919	1.1481	1.0341	1.0746	1.0332	1.1094	1	1.06	1.0398	1	1.07203333	1.09526	1.0994
EFTA	1.06516667	1.00223333	1.04623333	1.0225	1.08226667	1.0787	1.02923333	1.06063333	1.02936667	1.08506667	1	1.0597	1.04706667	1.02643333	1	1.06051	1.09596667
Rest of AEC	1.07973333	1.01231667	1.04121667	1.06866667	1.10143333	1.12926667	1.06645	1.0989	1.03355	1.11183333	1	1.06	1.07626667	1.04806667	1.09074444	1.06707083	1.10656667
ROW	1.0722	1.0009	1.0512	1.0509	1.0967	1.1334	1.0354	1.0711	1.0269	1.1393	1	1.0598	1.1078	1.0206	1.08553333	1.06866	1.0968

Scenario 1A2

ImportTAX (TM=1+tm)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	1.0016	1.0622	1.0413	1.0946	1.1005	1.0438	1.0741	1.038	1	1	1.06	1.0628	1.0336	1.06143333	1.07654	1.0957
Singapore	1.0721	1	1.0544	1.0246	1.0884	1.1025	1.0319	1.0579	1.0322	1.109	1	1.0599	1.0395	1.0253	1.0491	1.07218	1.0955
Malaysia	1.0666	1.0012	1	1.0336	1.091	1.0961	1.0344	1.0613	1.0346	1.1006	1	1.0599	1.0427	1.0287	1.04766667	1.07246	1.0952
Japan	1.0699	1.0012	1.0565	1	1.0951	1.0904	1.0367	1.0553	1.0324	1.1041	1	1.0598	1.0413	1.0266	1.0385	1.073	1.0936
China	1.0721	1.0011	1.0556	1.0413	1	1.1121	1.0359	1.0661	1.0311	1.1069	1	1.0599	1.0528	1.0256	1.0491	1.06942	1.095
South Korea	1.07	1.0016	1.0589	1.0353	1.0919	1	1.0376	1.0679	1.0353	1.0987	1	1.0599	1.0437	1.0285	1.04476667	1.07306	1.0939
USA	1.0705	1.0011	1.052	1.0465	1.0959	1.1267	1	1.0616	1.0302	1.1148	1	1.0599	1.0561	1.0241	1.0522	1.07392	1.0958
EU	1.0733	1.001	1.0529	1.0452	1.0964	1.1164	1.0359	1	1.0302	1.1208	1	1.0598	1.0764	1.024	1.08533333	1.0735	1.096
Australia	1.0741	1.0017	1.0512	1.0679	1.0928	1.1596	1.0352	1.0705	1	1.1116	1	1.0599	1.0528	1.0251	1.05746667	1.08272	1.0958
India	1	1.0015	1.0495	1.0463	1.0922	1.1208	1.0387	1.0714	1.0348	1	1	1.06	1.0537	1.0291	1.05823333	1.0633	1.0947
Hong Kong	1.0757	1.0018	1.0555	1.0309	1.0947	1.0803	1.0398	1.0629	1.0358	1.0991	1	1.0599	1.045	1.0323	1.1989	1.07476	1.0945
Chile	1.0954	1.022	0.0218	1.1038	1.0885	1.1499	1.0328	1.111	1.0307	1.1233	1	1	1.1504	1.0265	1.0648	1.070825	1.101
Turkey	1.0794	1.0032	1.0602	1.0554	1.0986	1.102	1.045	1.0772	1.0441	1.1073	1	1.06	1	1.0371	1.06803333	1.08508	1.095
New Zealand	1.0778	1.0039	1.0399	1.0697	1.0919	1.1481	1.0341	1.0746	1.0332	1.1094	1	1.06	1.0398	1	1.07203333	1.09526	1.0994
EFTA	1.06516667	1.00223333	1.04623333	1.0225	1.08226667	1.0787	1.02923333	1.06063333	1.02936667	1.08506667	1	1.0597	1.04706667	1.02643333	1	1.06051	1.09596667
Rest of AEC	1.07973333	1.01231667	1.04121667	1.06866667	1.10143333	1.12926667	1.06645	1.0989	1.03355	1.11183333	1	1.06	1.07626667	1.04806667	1.09074444	1.06707083	1.10656667
ROW	1.0722	1.0009	1.0512	1.0509	1.0967	1.1334	1.0354	1.0711	1.0269	1.1393	1	1.0598	1.1078	1.0206	1.08553333	1.06866	1.0968

Scenario 1A3

ImportTAX (TM=1+tm)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	1.0016	1.0622	1.0413	1.0946	1.1005	1.0438	1.0741	1.038	1.1138	1	1	1.0628	1.0336	1.06143333	1.07654	1.0957
Singapore	1.0721	1	1.0544	1.0246	1.0884	1.1025	1.0319	1.0579	1.0322	1.109	1	1.0599	1.0395	1.0253	1.0491	1.07218	1.0955
Malaysia	1.0666	1.0012	1	1.0336	1.091	1.0961	1.0344	1.0613	1.0346	1.1006	1	1.0599	1.0427	1.0287	1.04766667	1.07246	1.0952
Japan	1.0699	1.0012	1.0565	1	1.0951	1.0904	1.0367	1.0553	1.0324	1.1041	1	1.0598	1.0413	1.0266	1.0385	1.073	1.0936
China	1.0721	1.0011	1.0556	1.0413	1	1.1121	1.0359	1.0661	1.0311	1.1069	1	1.0599	1.0528	1.0256	1.0491	1.06942	1.095
South Korea	1.07	1.0016	1.0589	1.0353	1.0919	1	1.0376	1.0679	1.0353	1.0987	1	1.0599	1.0437	1.0285	1.04476667	1.07306	1.0939
USA	1.0705	1.0011	1.052	1.0465	1.0959	1.1267	1	1.0616	1.0302	1.1148	1	1.0599	1.0561	1.0241	1.0522	1.07392	1.0958
EU	1.0733	1.001	1.0529	1.0452	1.0964	1.1164	1.0359	1	1.0302	1.1208	1	1.0598	1.0764	1.024	1.08533333	1.0735	1.096
Australia	1.0741	1.0017	1.0512	1.0679	1.0928	1.1596	1.0352	1.0705	1	1.1116	1	1.0599	1.0528	1.0251	1.05746667	1.08272	1.0958
India	1.0696	1.0015	1.0495	1.0463	1.0922	1.1208	1.0387	1.0714	1.0348	1	1	1.06	1.0537	1.0291	1.05823333	1.0633	1.0947
Hong Kong	1.0757	1.0018	1.0555	1.0309	1.0947	1.0803	1.0398	1.0629	1.0358	1.0991	1	1.0599	1.045	1.0323	1.1989	1.07476	1.0945
Chile	1	1.022	0.0218	1.1038	1.0885	1.1499	1.0328	1.111	1.0307	1.1233	1	1	1.1504	1.0265	1.0648	1.070825	1.101
Turkey	1.0794	1.0032	1.0602	1.0554	1.0986	1.102	1.045	1.0772	1.0441	1.1073	1	1.06	1	1.0371	1.06803333	1.08508	1.095
New Zealand	1.0778	1.0039	1.0399	1.0697	1.0919	1.1481	1.0341	1.0746	1.0332	1.1094	1	1.06	1.0398	1	1.07203333	1.09526	1.0994
EFTA	1.06516667	1.00223333	1.04623333	1.0225	1.08226667	1.0787	1.02923333	1.06063333	1.02936667	1.08506667	1	1.0597	1.04706667	1.02643333	1	1.06051	1.09596667
Rest of AEC	1.07973333	1.01231667	1.04121667	1.06866667	1.10143333	1.12926667	1.06645	1.0989	1.03355	1.11183333	1	1.06	1.07626667	1.04806667	1.09074444	1.06707083	1.10656667
ROW	1.0722	1.0009	1.0512	1.0509	1.0967	1.1334	1.0354	1.0711	1.0269	1.1393	1	1.0598	1.1078	1.0206	1.08553333	1.06866	1.0968

Scenario 1A4

ImportTAX (TM=1+tm)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	1.0016	1.0622	1.0413	1.0946	1	1.0438	1.0741	1.038	1.1138	1	1.06	1.0628	1.0336	1.06143333	1.07654	1.0957
Singapore	1.0721	1	1.0544	1.0246	1.0884	1.1025	1.0319	1.0579	1.0322	1.109	1	1.0599	1.0395	1.0253	1.0491	1.07218	1.0955
Malaysia	1.0666	1.0012	1	1.0336	1.091	1.0961	1.0344	1.0613	1.0346	1.1006	1	1.0599	1.0427	1.0287	1.04766667	1.07246	1.0952
Japan	1.0699	1.0012	1.0565	1	1.0951	1.0904	1.0367	1.0553	1.0324	1.1041	1	1.0598	1.0413	1.0266	1.0385	1.073	1.0936
China	1.0721	1.0011	1.0556	1.0413	1	1.1121	1.0359	1.0661	1.0311	1.1069	1	1.0599	1.0528	1.0256	1.0491	1.06942	1.095
South Korea	1	1.0016	1.0589	1.0353	1.0919	1	1.0376	1.0679	1.0353	1.0987	1	1.0599	1.0437	1.0285	1.04476667	1.07306	1.0939
USA	1.0705	1.0011	1.052	1.0465	1.0959	1.1267	1	1.0616	1.0302	1.1148	1	1.0599	1.0561	1.0241	1.0522	1.07392	1.0958
EU	1.0733	1.001	1.0529	1.0452	1.0964	1.1164	1.0359	1	1.0302	1.1208	1	1.0598	1.0764	1.024	1.08533333	1.0735	1.096
Australia	1.0741	1.0017	1.0512	1.0679	1.0928	1.1596	1.0352	1.0705	1	1.1116	1	1.0599	1.0528	1.0251	1.05746667	1.08272	1.0958
India	1.0696	1.0015	1.0495	1.0463	1.0922	1.1208	1.0387	1.0714	1.0348	1	1	1.06	1.0537	1.0291	1.05823333	1.0633	1.0947
Hong Kong	1.0757	1.0018	1.0555	1.0309	1.0947	1.0803	1.0398	1.0629	1.0358	1.0991	1	1.0599	1.045	1.0323	1.1989	1.07476	1.0945
Chile	1.0954	1.022	0.0218	1.1038	1.0885	1.1499	1.0328	1.111	1.0307	1.1233	1	1	1.1504	1.0265	1.0648	1.070825	1.101
Turkey	1.0794	1.0032	1.0602	1.0554	1.0986	1.102	1.045	1.0772	1.0441	1.1073	1	1.06	1	1.0371	1.06803333	1.08508	1.095
New Zealand	1.0778	1.0039	1.0399	1.0697	1.0919	1.1481	1.0341	1.0746	1.0332	1.1094	1	1.06	1.0398	1	1.07203333	1.09526	1.0994
EFTA	1.06516667	1.00223333	1.04623333	1.0225	1.08226667	1.0787	1.02923333	1.06063333	1.02936667	1.08506667	1	1.0597	1.04706667	1.02643333	1	1.06051	1.09596667
Rest of AEC	1.07973333	1.01231667	1.04121667	1.06866667	1.10143333	1.12926667	1.06645	1.0989	1.03355	1.11183333	1	1.06	1.07626667	1.04806667	1.09074444	1.06707083	1.10656667
ROW	1.0722	1.0009	1.0512	1.0509	1.0967	1.1334	1.0354	1.0711	1.0269	1.1393	1	1.0598	1.1078	1.0206	1.08553333	1.06866	1.0968

Scenario 1A5

ImportTAX (TM=1+tm)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	1.0016	1.0622	1.0413	1.0946	1.1005	1.0438	1.0741	1.038	1.1138	1	1.06	1	1.0336	1.06143333	1.07654	1.0957
Singapore	1.0721	1	1.0544	1.0246	1.0884	1.1025	1.0319	1.0579	1.0322	1.109	1	1.0599	1.0395	1.0253	1.0491	1.07218	1.0955
Malaysia	1.0666	1.0012	1	1.0336	1.091	1.0961	1.0344	1.0613	1.0346	1.1006	1	1.0599	1.0427	1.0287	1.04766667	1.07246	1.0952
Japan	1.0699	1.0012	1.0565	1	1.0951	1.0904	1.0367	1.0553	1.0324	1.1041	1	1.0598	1.0413	1.0266	1.0385	1.073	1.0936
China	1.0721	1.0011	1.0556	1.0413	1	1.1121	1.0359	1.0661	1.0311	1.1069	1	1.0599	1.0528	1.0256	1.0491	1.06942	1.095
South Korea	1.07	1.0016	1.0589	1.0353	1.0919	1	1.0376	1.0679	1.0353	1.0987	1	1.0599	1.0437	1.0285	1.04476667	1.07306	1.0939
USA	1.0705	1.0011	1.052	1.0465	1.0959	1.1267	1	1.0616	1.0302	1.1148	1	1.0599	1.0561	1.0241	1.0522	1.07392	1.0958
EU	1.0733	1.001	1.0529	1.0452	1.0964	1.1164	1.0359	1	1.0302	1.1208	1	1.0598	1.0764	1.024	1.08533333	1.0735	1.096
Australia	1.0741	1.0017	1.0512	1.0679	1.0928	1.1596	1.0352	1.0705	1	1.1116	1	1.0599	1.0528	1.0251	1.05746667	1.08272	1.0958
India	1.0696	1.0015	1.0495	1.0463	1.0922	1.1208	1.0387	1.0714	1.0348	1	1	1.06	1.0537	1.0291	1.05823333	1.0633	1.0947
Hong Kong	1.0757	1.0018	1.0555	1.0309	1.0947	1.0803	1.0398	1.0629	1.0358	1.0991	1	1.0599	1.045	1.0323	1.1989	1.07476	1.0945
Chile	1.0954	1.022	0.0218	1.1038	1.0885	1.1499	1.0328	1.111	1.0307	1.1233	1	1	1.1504	1.0265	1.0648	1.070825	1.101
Turkey	1	1.0032	1.0602	1.0554	1.0986	1.102	1.045	1.0772	1.0441	1.1073	1	1.06	1	1.0371	1.06803333	1.08508	1.095
New Zealand	1.0778	1.0039	1.0399	1.0697	1.0919	1.1481	1.0341	1.0746	1.0332	1.1094	1	1.06	1.0398	1	1.07203333	1.09526	1.0994
EFTA	1.06516667	1.00223333	1.04623333	1.0225	1.08226667	1.0787	1.02923333	1.06063333	1.02936667	1.08506667	1	1.0597	1.04706667	1.02643333	1	1.06051	1.09596667
Rest of AEC	1.07973333	1.01231667	1.04121667	1.06866667	1.10143333	1.12926667	1.06645	1.0989	1.03355	1.11183333	1	1.06	1.07626667	1.04806667	1.09074444	1.06707083	1.10656667
ROW	1.0722	1.0009	1.0512	1.0509	1.0967	1.1334	1.0354	1.0711	1.0269	1.1393	1	1.0598	1.1078	1.0206	1.08553333	1.06866	1.0968

Scenario 1A6

ImportTAX (TM=1+tm)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	1.0016	1.0622	1.0413	1.0946	1.1005	1.0438	1	1.038	1.1138	1	1.06	1.0628	1.0336	1.06143333	1.07654	1.0957
Singapore	1.0721	1	1.0544	1.0246	1.0884	1.1025	1.0319	1.0579	1.0322	1.109	1	1.0599	1.0395	1.0253	1.0491	1.07218	1.0955
Malaysia	1.0666	1.0012	1	1.0336	1.091	1.0961	1.0344	1.0613	1.0346	1.1006	1	1.0599	1.0427	1.0287	1.04766667	1.07246	1.0952
Japan	1.0699	1.0012	1.0565	1	1.0951	1.0904	1.0367	1.0553	1.0324	1.1041	1	1.0598	1.0413	1.0266	1.0385	1.073	1.0936
China	1.0721	1.0011	1.0556	1.0413	1	1.1121	1.0359	1.0661	1.0311	1.1069	1	1.0599	1.0528	1.0256	1.0491	1.06942	1.095
South Korea	1.07	1.0016	1.0589	1.0353	1.0919	1	1.0376	1.0679	1.0353	1.0987	1	1.0599	1.0437	1.0285	1.04476667	1.07306	1.0939
USA	1.0705	1.0011	1.052	1.0465	1.0959	1.1267	1	1.0616	1.0302	1.1148	1	1.0599	1.0561	1.0241	1.0522	1.07392	1.0958
EU	1	1.001	1.0529	1.0452	1.0964	1.1164	1.0359	1	1.0302	1.1208	1	1.0598	1.0764	1.024	1.08533333	1.0735	1.096
Australia	1.0741	1.0017	1.0512	1.0679	1.0928	1.1596	1.0352	1.0705	1	1.1116	1	1.0599	1.0528	1.0251	1.05746667	1.08272	1.0958
India	1.0696	1.0015	1.0495	1.0463	1.0922	1.1208	1.0387	1.0714	1.0348	1	1	1.06	1.0537	1.0291	1.05823333	1.0633	1.0947
Hong Kong	1.0757	1.0018	1.0555	1.0309	1.0947	1.0803	1.0398	1.0629	1.0358	1.0991	1	1.0599	1.045	1.0323	1.1989	1.07476	1.0945
Chile	1.0954	1.022	0.0218	1.1038	1.0885	1.1499	1.0328	1.111	1.0307	1.1233	1	1	1.1504	1.0265	1.0648	1.070825	1.101
Turkey	1.0794	1.0032	1.0602	1.0554	1.0986	1.102	1.045	1.0772	1.0441	1.1073	1	1.06	1	1.0371	1.06803333	1.08508	1.095
New Zealand	1.0778	1.0039	1.0399	1.0697	1.0919	1.1481	1.0341	1.0746	1.0332	1.1094	1	1.06	1.0398	1	1.07203333	1.09526	1.0994
EFTA	1.06516667	1.00223333	1.04623333	1.0225	1.08226667	1.0787	1.02923333	1.06063333	1.02936667	1.08506667	1	1.0597	1.04706667	1.02643333	1	1.06051	1.09596667
Rest of AEC	1.07973333	1.01231667	1.04121667	1.06866667	1.10143333	1.12926667	1.06645	1.0989	1.03355	1.11183333	1	1.06	1.07626667	1.04806667	1.09074444	1.06707083	1.10656667
ROW	1.0722	1.0009	1.0512	1.0509	1.0967	1.1334	1.0354	1.0711	1.0269	1.1393	1	1.0598	1.1078	1.0206	1.08553333	1.06866	1.0968

Scenario 1A7

ImportTAX (TM=1+tm)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	1.0016	1.0622	1.0413	1.0946	1.1005	1.0438	1.0741	1.038	1.1138	1	1.06	1.0628	1.0336	1	1.07654	1.0957
Singapore	1.0721	1	1.0544	1.0246	1.0884	1.1025	1.0319	1.0579	1.0322	1.109	1	1.0599	1.0395	1.0253	1.0491	1.07218	1.0955
Malaysia	1.0666	1.0012	1	1.0336	1.091	1.0961	1.0344	1.0613	1.0346	1.1006	1	1.0599	1.0427	1.0287	1.04766667	1.07246	1.0952
Japan	1.0699	1.0012	1.0565	1	1.0951	1.0904	1.0367	1.0553	1.0324	1.1041	1	1.0598	1.0413	1.0266	1.0385	1.073	1.0936
China	1.0721	1.0011	1.0556	1.0413	1	1.1121	1.0359	1.0661	1.0311	1.1069	1	1.0599	1.0528	1.0256	1.0491	1.06942	1.095
South Korea	1.07	1.0016	1.0589	1.0353	1.0919	1	1.0376	1.0679	1.0353	1.0987	1	1.0599	1.0437	1.0285	1.04476667	1.07306	1.0939
USA	1.0705	1.0011	1.052	1.0465	1.0959	1.1267	1	1.0616	1.0302	1.1148	1	1.0599	1.0561	1.0241	1.0522	1.07392	1.0958
EU	1.0733	1.001	1.0529	1.0452	1.0964	1.1164	1.0359	1	1.0302	1.1208	1	1.0598	1.0764	1.024	1.08533333	1.0735	1.096
Australia	1.0741	1.0017	1.0512	1.0679	1.0928	1.1596	1.0352	1.0705	1	1.1116	1	1.0599	1.0528	1.0251	1.05746667	1.08272	1.0958
India	1.0696	1.0015	1.0495	1.0463	1.0922	1.1208	1.0387	1.0714	1.0348	1	1	1.06	1.0537	1.0291	1.05823333	1.0633	1.0947
Hong Kong	1.0757	1.0018	1.0555	1.0309	1.0947	1.0803	1.0398	1.0629	1.0358	1.0991	1	1.0599	1.045	1.0323	1.1989	1.07476	1.0945
Chile	1.0954	1.022	0.0218	1.1038	1.0885	1.1499	1.0328	1.111	1.0307	1.1233	1	1	1.1504	1.0265	1.0648	1.070825	1.101
Turkey	1.0794	1.0032	1.0602	1.0554	1.0986	1.102	1.045	1.0772	1.0441	1.1073	1	1.06	1	1.0371	1.06803333	1.08508	1.095
New Zealand	1.0778	1.0039	1.0399	1.0697	1.0919	1.1481	1.0341	1.0746	1.0332	1.1094	1	1.06	1.0398	1	1.07203333	1.09526	1.0994
EFTA	1	1.00223333	1.04623333	1.0225	1.08226667	1.0787	1.02923333	1.06063333	1.02936667	1.08506667	1	1.0597	1.04706667	1.02643333	1	1.06051	1.09596667
Rest of AEC	1.07973333	1.01231667	1.04121667	1.06866667	1.10143333	1.12926667	1.06645	1.0989	1.03355	1.11183333	1	1.06	1.07626667	1.04806667	1.09074444	1.06707083	1.10656667
ROW	1.0722	1.0009	1.0512	1.0509	1.0967	1.1334	1.0354	1.0711	1.0269	1.1393	1	1.0598	1.1078	1.0206	1.08553333	1.06866	1.0968

Scenario 1A8

ImportTAX (TM=1+tm)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	1.0016	1.0622	1.0413	1.0946	1.1005	1.0438	1.0741	1.038	1.1138	1	1.06	1.0628	1.0336	1.06143333	1.07654	1.0957
Singapore	1.0721	1	1.0544	1.0246	1.0884	1.1025	1.0319	1.0579	1.0322	1.109	1	1.0599	1.0395	1.0253	1.0491	1.07218	1.0955
Malaysia	1.0666	1.0012	1	1.0336	1.091	1.0961	1.0344	1.0613	1.0346	1.1006	1	1.0599	1.0427	1.0287	1.04766667	1.07246	1.0952
Japan	1.0699	1.0012	1.0565	1	1.0951	1.0904	1.0367	1.0553	1.0324	1.1041	1	1.0598	1.0413	1.0266	1.0385	1.073	1.0936
China	1.0721	1.0011	1.0556	1.0413	1	1.1121	1.0359	1.0661	1.0311	1.1069	1	1.0599	1.0528	1.0256	1.0491	1.06942	1.095
South Korea	1.07	1.0016	1.0589	1.0353	1.0919	1	1.0376	1.0679	1.0353	1.0987	1	1.0599	1.0437	1.0285	1.04476667	1.07306	1.0939
USA	1.0705	1.0011	1.052	1.0465	1.0959	1.1267	1	1.0616	1.0302	1.1148	1	1.0599	1.0561	1.0241	1.0522	1.07392	1.0958
EU	1.0733	1.001	1.0529	1.0452	1.0964	1.1164	1.0359	1	1.0302	1.1208	1	1.0598	1.0764	1.024	1.08533333	1.0735	1.096
Australia	1.0741	1.0017	1.0512	1.0679	1.0928	1.1596	1.0352	1.0705	1	1.1116	1	1.0599	1.0528	1.0251	1.05746667	1.08272	1.0958
India	1.0696	1.0015	1.0495	1.0463	1.0922	1.1208	1.0387	1.0714	1.0348	1	1	1.06	1.0537	1.0291	1.05823333	1.0633	1.0947
Hong Kong	1.0757	1.0018	1.0555	1.0309	1.0947	1.0803	1.0398	1.0629	1.0358	1.0991	1	1.0599	1.045	1.0323	1.1989	1.07476	1.0945
Chile	1.0954	1.022	0.0218	1.1038	1.0885	1.1499	1.0328	1.111	1.0307	1.1233	1	1	1.1504	1.0265	1.0648	1.070825	1.101
Turkey	1.0794	1.0032	1.0602	1.0554	1.0986	1.102	1.045	1.0772	1.0441	1.1073	1	1.06	1	1.0371	1.06803333	1.08508	1.095
New Zealand	1.0778	1.0039	1.0399	1.0697	1.0919	1.1481	1.0341	1.0746	1.0332	1.1094	1	1.06	1.0398	1	1.07203333	1.09526	1.0994
EFTA	1.06516667	1.00223333	1.04623333	1.0225	1.08226667	1.0787	1.02923333	1.06063333	1.02936667	1.08506667	1	1.0597	1.04706667	1.02643333	1	1.06051	1.09596667
Rest of AEC	1.07973333	1.01231667	1.04121667	1.06866667	1.10143333	1.12926667	1.06645	1.0989	1.03355	1.11183333	1	1.06	1.07626667	1.04806667	1.09074444	1.06707083	1.10656667
ROW	1.0722	1.0009	1.0512	1.0509	1.0967	1.1334	1.0354	1.0711	1.0269	1.1393	1	1.0598	1.1078	1.0206	1.08553333	1.06866	1.0968

Scenario 1A9

ImportTAX (TM=1+tm)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	1	1	1.0413	1.0946	1.1005	1.0438	1.0741	1.038	1.1138	1	1.06	1.0628	1.0336	1.06143333	1	1.0957
Singapore	1	1	1	1.0246	1.0884	1.1025	1.0319	1.0579	1.0322	1.109	1	1.0599	1.0395	1.0253	1.0491	1	1.0955
Malaysia	1	1	1	1.0336	1.091	1.0961	1.0344	1.0613	1.0346	1.1006	1	1.0599	1.0427	1.0287	1.04766667	1	1.0952
Japan	1.0699	1.0012	1.0565	1	1.0951	1.0904	1.0367	1.0553	1.0324	1.1041	1	1.0598	1.0413	1.0266	1.0385	1.073	1.0936
China	1.0721	1.0011	1.0556	1.0413	1	1.1121	1.0359	1.0661	1.0311	1.1069	1	1.0599	1.0528	1.0256	1.0491	1.06942	1.095
South Korea	1.07	1.0016	1.0589	1.0353	1.0919	1	1.0376	1.0679	1.0353	1.0987	1	1.0599	1.0437	1.0285	1.04476667	1.07306	1.0939
USA	1.0705	1.0011	1.052	1.0465	1.0959	1.1267	1	1.0616	1.0302	1.1148	1	1.0599	1.0561	1.0241	1.0522	1.07392	1.0958
EU	1.0733	1.001	1.0529	1.0452	1.0964	1.1164	1.0359	1	1.0302	1.1208	1	1.0598	1.0764	1.024	1.08533333	1.0735	1.096
Australia	1.0741	1.0017	1.0512	1.0679	1.0928	1.1596	1.0352	1.0705	1	1.1116	1	1.0599	1.0528	1.0251	1.05746667	1.08272	1.0958
India	1.0696	1.0015	1.0495	1.0463	1.0922	1.1208	1.0387	1.0714	1.0348	1	1	1.06	1.0537	1.0291	1.05823333	1.0633	1.0947
Hong Kong	1.0757	1.0018	1.0555	1.0309	1.0947	1.0803	1.0398	1.0629	1.0358	1.0991	1	1.0599	1.045	1.0323	1.1989	1.07476	1.0945
Chile	1.0954	1.022	0.0218	1.1038	1.0885	1.1499	1.0328	1.111	1.0307	1.1233	1	1	1.1504	1.0265	1.0648	1.070825	1.101
Turkey	1.0794	1.0032	1.0602	1.0554	1.0986	1.102	1.045	1.0772	1.0441	1.1073	1	1.06	1	1.0371	1.06803333	1.08508	1.095
New Zealand	1.0778	1.0039	1.0399	1.0697	1.0919	1.1481	1.0341	1.0746	1.0332	1.1094	1	1.06	1.0398	1	1.07203333	1.09526	1.0994
EFTA	1.06516667	1.00223333	1.04623333	1.0225	1.08226667	1.0787	1.02923333	1.06063333	1.02936667	1.08506667	1	1.0597	1.04706667	1.02643333	1	1.06051	1.09596667
Rest of AEC	1	1	1	1.06866667	1.10143333	1.12926667	1.06645	1.0989	1.03355	1.11183333	1	1.06	1.07626667	1.04806667	1.09074444	1	1.10656667
ROW	1.0722	1.0009	1.0512	1.0509	1.0967	1.1334	1.0354	1.0711	1.0269	1.1393	1	1.0598	1.1078	1.0206	1.08553333	1.06866	1.0968

Scenario 1A10

ImportTAX (TM=1+tm)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	1.0004	1.01555	1.010325	1.02365	1.025125	1.0438	1.0741	1.0095	1.02845	1	1.06	1.0628	1.0084	1.06143333	1.019135	1.0957
Singapore	1.018025	1	1.0136	1.00615	1.0221	1.025625	1.0319	1.0579	1.00805	1.02725	1	1.0599	1.0395	1.006325	1.0491	1.018045	1.0955
Malaysia	1.01665	1.0003	1	1.0084	1.02275	1.024025	1.0344	1.0613	1.00865	1.02515	1	1.0599	1.0427	1.007175	1.04766667	1.018115	1.0952
Japan	1.017475	1.0003	1.014125	1	1.023775	1.0226	1.0367	1.0553	1.0081	1.026025	1	1.0598	1.0413	1.00665	1.0385	1.01825	1.0936
China	1.018025	1.000275	1.0139	1.010325	1	1.028025	1.0359	1.0661	1.007775	1.026725	1	1.0599	1.0528	1.0064	1.0491	1.017355	1.095
South Korea	1.0175	1.0004	1.014725	1.008825	1.022975	1	1.0376	1.0679	1.008825	1.024675	1	1.0599	1.0437	1.007125	1.04476667	1.018265	1.0939
USA	1.0705	1.0011	1.052	1.0465	1.0959	1.1267	1	1.0616	1.0302	1.1148	1	1.0599	1.0561	1.0241	1.0522	1.07392	1.0958
EU	1.0733	1.001	1.0529	1.0452	1.0964	1.1164	1.0359	1	1.0302	1.1208	1	1.0598	1.0764	1.024	1.08533333	1.0735	1.096
Australia	1.018525	1.000425	1.0128	1.016975	1.0232	1.0399	1.0352	1.0705	1	1.0279	1	1.0599	1.0528	1.006275	1.05746667	1.02068	1.0958
India	1.0174	1.000375	1.012375	1.011575	1.02305	1.0302	1.0387	1.0714	1.0087	1	1	1.06	1.0537	1.007275	1.05823333	1.015825	1.0947
Hong Kong	1.0757	1.0018	1.0555	1.0309	1.0947	1.0803	1.0398	1.0629	1.0358	1.0991	1	1.0599	1.045	1.0323	1.1989	1.07476	1.0945
Chile	1.0954	1.022	0.0218	1.1038	1.0885	1.1499	1.0328	1.111	1.0307	1.1233	1	1	1.1504	1.0265	1.0648	1.070825	1.101
Turkey	1.0794	1.0032	1.0602	1.0554	1.0986	1.102	1.045	1.0772	1.0441	1.1073	1	1.06	1	1.0371	1.06803333	1.08508	1.095
New Zealand	1.01945	1.000975	1.009975	1.017425	1.022975	1.037025	1.0341	1.0746	1.0083	1.02735	1	1.06	1.0398	1	1.07203333	1.023815	1.0994
EFTA	1.06516667	1.00223333	1.04623333	1.0225	1.08226667	1.0787	1.02923333	1.06063333	1.02936667	1.08506667	1	1.0597	1.04706667	1.02643333	1	1.06051	1.09596667
Rest of AEC	1.01993333	1.00307917	1.01030417	1.01716667	1.02535833	1.03231667	1.06645	1.0989	1.0083875	1.02795833	1	1.06	1.07626667	1.01201667	1.09074444	1	1.10656667
ROW	1.0722	1.0009	1.0512	1.0509	1.0967	1.1334	1.0354	1.0711	1.0269	1.1393	1	1.0598	1.1078	1.0206	1.08553333	1.06866	1.0968

Scenario 1A1

Export TAX (TX=1+tx)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	1	1	1	1	1	1	1	0.95	1	1	1	1	1	1	1	1
Singapore	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Malaysia	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Japan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
China	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
South Korea	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
USA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Australia	0.95	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
India	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hong Kong	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chile	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Turkey	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
New Zealand	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EFTA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Rest of AEC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ROW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Scenario 1A2

Export TAX (TX=1+tx)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	1	1	1	1	1	1	1	1	0.95	1	1	1	1	1	1	1
Singapore	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Malaysia	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Japan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
China	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
South Korea	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
USA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Australia	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
India	0.95	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hong Kong	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chile	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Turkey	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
New Zealand	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EFTA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Rest of AEC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ROW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Scenario 1A3

Export TAX (TX=1+tx)	d: destination											
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile
Indonesia	1	1	1	1	1	1	1	1	1	1	1	0.95
Singapore	1	1	1	1	1	1	1	1	1	1	1	1
Malaysia	1	1	1	1	1	1	1	1	1	1	1	1
Japan	1	1	1	1	1	1	1	1	1	1	1	1
China	1	1	1	1	1	1	1	1	1	1	1	1
South Korea	1	1	1	1	1	1	1	1	1	1	1	1
USA	1	1	1	1	1	1	1	1	1	1	1	1
EU	1	1	1	1	1	1	1	1	1	1	1	1
Australia	1	1	1	1	1	1	1	1	1	1	1	1
India	1	1	1	1	1	1	1	1	1	1	1	1
Hong Kong	1	1	1	1	1	1	1	1	1	1	1	1
Chile	0.95	1	1	1	1	1	1	1	1	1	1	1
Turkey	1	1	1	1	1	1	1	1	1	1	1	1
New Zealand	1	1	1	1	1	1	1	1	1	1	1	1
EFTA	1	1	1	1	1	1	1	1	1	1	1	1
Rest of AEC	1	1	1	1	1	1	1	1	1	1	1	1
ROW	1	1	1	1	1	1	1	1	1	1	1	1

Scenario 1A4

Export TAX (TX=1+tx)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	1	1	1	1	0.95	1	1	1	1	1	1	1	1	1	1	1
Singapore	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Malaysia	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Japan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
China	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
South Korea	0.95	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
USA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Australia	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
India	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hong Kong	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chile	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Turkey	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
New Zealand	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EFTA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Rest of AEC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ROW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Scenario 1A5

Export TAX (TX=1+tx)	d: destination												
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey
Indonesia	1	1	1	1	1	1	1	1	1	1	1	1	0.95
Singapore	1	1	1	1	1	1	1	1	1	1	1	1	1
Malaysia	1	1	1	1	1	1	1	1	1	1	1	1	1
Japan	1	1	1	1	1	1	1	1	1	1	1	1	1
China	1	1	1	1	1	1	1	1	1	1	1	1	1
South Korea	1	1	1	1	1	1	1	1	1	1	1	1	1
USA	1	1	1	1	1	1	1	1	1	1	1	1	1
EU	1	1	1	1	1	1	1	1	1	1	1	1	1
Australia	1	1	1	1	1	1	1	1	1	1	1	1	1
India	1	1	1	1	1	1	1	1	1	1	1	1	1
Hong Kong	1	1	1	1	1	1	1	1	1	1	1	1	1
Chile	1	1	1	1	1	1	1	1	1	1	1	1	1
Turkey	0.95	1	1	1	1	1	1	1	1	1	1	1	1
New Zealand	1	1	1	1	1	1	1	1	1	1	1	1	1
EFTA	1	1	1	1	1	1	1	1	1	1	1	1	1
Rest of AEC	1	1	1	1	1	1	1	1	1	1	1	1	1
ROW	1	1	1	1	1	1	1	1	1	1	1	1	1

Scenario 1A6

Export TAX (TX=1+tx)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	1	1	1	1	1	1	0.93	1	1	1	1	1	1	1	1	1
Singapore	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Malaysia	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Japan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
China	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
South Korea	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
USA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EU	0.93	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Australia	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
India	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hong Kong	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chile	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Turkey	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
New Zealand	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EFTA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Rest of AEC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ROW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Scenario 1A7

Export TAX (TX=1+tx)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0.93	1	1
Singapore	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Malaysia	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Japan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
China	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
South Korea	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
USA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Australia	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
India	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hong Kong	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chile	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Turkey	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
New Zealand	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EFTA	0.93	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Rest of AEC	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ROW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Scenario 1A8

Export TAX (TX=1+tx)	d: destination															
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC
Indonesia	1	1	1	1	1	1	1	1	1	1	0.95	1	1	1	1	1
Singapore	1	1	1	1	1	1	1	1	1	1	0.95	1	1	1	1	1
Malaysia	1	1	1	1	1	1	1	1	1	1	0.95	1	1	1	1	1
Japan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
China	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
South Korea	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
USA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Australia	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
India	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hong Kong	0.95	0.95	0.95	1	1	1	1	1	1	1	0.95	1	1	1	1	0.95
Chile	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Turkey	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
New Zealand	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EFTA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Rest of AEC	1	1	1	1	1	1	1	1	1	1	0.95	1	1	1	1	1
ROW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Scenario 1A9

Export TAX (TX=1+tx)	d: destination															
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC
Indonesia	0.95	0.95	0.95	1	1	1	1	1	1	1	1	1	1	1	1	0.95
Singapore	0.95	0.95	0.95	1	1	1	1	1	1	1	1	1	1	1	1	0.95
Malaysia	0.95	0.95	0.95	1	1	1	1	1	1	1	1	1	1	1	1	0.95
Japan	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
China	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
South Korea	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
USA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EU	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Australia	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
India	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Hong Kong	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Chile	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Turkey	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
New Zealand	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EFTA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Rest of AEC	0.95	0.95	0.95	1	1	1	1	1	1	1	1	1	1	1	1	0.95
ROW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Scenario 1A10

Export TAX (TX=1+tx)	d: destination													
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand
Indonesia	0.98	0.98	0.98	0.98	0.98	0.98	0.999	0.999	0.98	0.98	0.999	0.999	0.999	0.98
Singapore	0.98	0.98	0.98	0.98	0.98	0.98	0.999	0.999	0.98	0.98	0.999	0.999	0.999	0.98
Malaysia	0.98	0.98	0.98	0.98	0.98	0.98	0.999	0.999	0.98	0.98	0.999	0.999	0.999	0.98
Japan	0.98	0.98	0.98	0.98	0.98	0.98	0.999	0.999	0.98	0.98	0.999	0.999	0.999	0.98
China	0.98	0.98	0.98	0.98	0.98	0.98	0.999	0.999	0.98	0.98	0.999	0.999	0.999	0.98
South Korea	0.98	0.98	0.98	0.98	0.98	0.98	0.999	0.999	0.98	0.98	0.999	0.999	0.999	0.98
USA	0.999	0.999	0.999	0.999	0.999	0.999	1	1	0.999	0.999	1	1	1	0.999
EU	0.999	0.999	0.999	0.999	0.999	0.999	1	1	0.999	0.999	1	1	1	0.999
Australia	0.98	0.98	0.98	0.98	0.98	0.98	0.999	0.999	0.98	0.98	0.999	0.999	0.999	0.98
India	0.98	0.98	0.98	0.98	0.98	0.98	0.999	0.999	0.98	0.98	0.999	0.999	0.999	0.98
Hong Kong	0.999	0.999	0.999	0.999	0.999	0.999	1	1	0.999	0.999	1	1	1	0.999
Chile	0.999	0.999	0.999	0.999	0.999	0.999	1	1	0.999	0.999	1	1	1	0.999
Turkey	0.999	0.999	0.999	0.999	0.999	0.999	1	1	0.999	0.999	1	1	1	0.999
New Zealand	0.98	0.98	0.98	0.98	0.98	0.98	0.999	0.999	0.98	0.98	0.999	0.999	0.999	0.98
EFTA	0.999	0.999	0.999	0.999	0.999	0.999	1	1	0.999	0.999	1	1	1	0.999
Rest of AEC	0.999	0.999	0.999	0.999	0.999	0.999	1	1	0.999	0.999	1	1	1	0.999
ROW	0.999	0.999	0.999	0.999	0.999	0.999	1	1	0.999	0.999	1	1	1	0.999

Scenario 1B1

ImportTAX (TM=1+tm)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	1.00005	1.00194375	1.02065	1.0473	1.0125625	1.0438	1.018525	1.00475	1.014225	1	1.015	1.0157	1.0168	1.01535833	1.00239188	1.0957
Singapore	1.00225313	1	1.0017	1.0123	1.0442	1.05125	1.0319	1.0579	1.0161	1.0545	1	1.0599	1.0395	1.01265	1.0491	1.00225563	1.0955
Malaysia	1.00208125	1.0000375	1	1.0168	1.0455	1.04805	1.0344	1.0613	1.0173	1.0503	1	1.0599	1.0427	1.01435	1.04766667	1.00226438	1.0952
Japan	1.03495	1.0006	1.02825	1	1.04755	1.0452	1.0367	1.0553	1.0162	1.05205	1	1.0598	1.0413	1.0133	1.0385	1.0365	1.0936
China	1.03605	1.00055	1.0278	1.02065	1	1.05605	1.0359	1.0661	1.01555	1.05345	1	1.0599	1.0528	1.0128	1.0491	1.03471	1.095
South Korea	1.00875	1.0008	1.02945	1.01765	1.04595	1	1.0376	1.0679	1.01765	1.04935	1	1.0599	1.0437	1.01425	1.04476667	1.03653	1.0939
USA	1.0705	1.0011	1.052	1.0465	1.0959	1.1267	1	1.0616	1.0302	1.1148	1	1.0599	1.0561	1.0241	1.0522	1.07392	1.0958
EU	1.018325	1.001	1.0529	1.0452	1.0964	1.1164	1.0359	1	1.0302	1.1208	1	1.0598	1.0764	1.024	1.08533333	1.0735	1.096
Australia	1.0092625	1.00085	1.0256	1.03395	1.0464	1.0798	1.0352	1.0705	1	1.1116	1	1.0599	1.0528	1.01255	1.05746667	1.04136	1.0958
India	1.0087	1.00075	1.02475	1.02315	1.0461	1.0604	1.0387	1.0714	1.0174	1	1	1.06	1.0537	1.01455	1.05823333	1.03165	1.0947
Hong Kong	1.018925	1.00045	1.013875	1.0309	1.0947	1.0803	1.0398	1.0629	1.0358	1.0991	1	1.0599	1.045	1.0323	1.1989	1.03738	1.0945
Chile	1.02385	1.022	0.0218	1.1038	1.0885	1.1499	1.0328	1.111	1.0307	1.1233	1	1	1.1504	1.0265	1.0648	1.070825	1.101
Turkey	1.01985	1.0032	1.0602	1.0554	1.0986	1.102	1.045	1.0772	1.0441	1.1073	1	1.06	1	1.0371	1.06803333	1.08508	1.095
New Zealand	1.0389	1.00195	1.01995	1.03485	1.04595	1.07405	1.0341	1.0746	1.0166	1.0547	1	1.06	1.0398	1	1.07203333	1.04763	1.0994
EFTA	1.01629167	1.00223333	1.04623333	1.0225	1.08226667	1.0787	1.02923333	1.06063333	1.02936667	1.08506667	1	1.0597	1.04706667	1.02643333	1	1.06051	1.09596667
Rest of AEC	1.00249167	1.0003849	1.00128802	1.03433333	1.05071667	1.06463333	1.06645	1.0989	1.016775	1.05591667	1	1.06	1.07626667	1.02403333	1.09074444	1.00209596	1.10656667
ROW	1.0722	1.0009	1.0512	1.0509	1.0967	1.1334	1.0354	1.0711	1.0269	1.1393	1	1.0598	1.1078	1.0206	1.08553333	1.06866	1.0968

Scenario 1B2

ImportTAX (TM=1+tm)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	1	1	1.010325	1.02365	1	1.0438	1	1	1	1	1	1	1.0084	1	1	1.0957
Singapore	1	1	1	1.00615	1.0221	1.025625	1.0319	1.0579	1.00805	1.02725	1	1.0599	1.0395	1.006325	1.0491	1	1.0955
Malaysia	1	1	1	1.0084	1.02275	1.024025	1.0344	1.0613	1.00865	1.02515	1	1.0599	1.0427	1.007175	1.04766667	1	1.0952
Japan	1.017475	1.0003	1.014125	1	1.023775	1.0226	1.0367	1.0553	1.0081	1.026025	1	1.0598	1.0413	1.00665	1.0385	1.01825	1.0936
China	1.018025	1.000275	1.0139	1.010325	1	1.028025	1.0359	1.0661	1.007775	1.026725	1	1.0599	1.0528	1.0064	1.0491	1.017355	1.095
South Korea	1	1.0004	1.014725	1.008825	1.022975	1	1.0376	1.0679	1.008825	1.024675	1	1.0599	1.0437	1.007125	1.04476667	1.018265	1.0939
USA	1.0705	1.0011	1.052	1.0465	1.0959	1.1267	1	1.0616	1.0302	1.1148	1	1.0599	1.0561	1.0241	1.0522	1.07392	1.0958
EU	1	1.001	1.0529	1.0452	1.0964	1.1164	1.0359	1	1.0302	1.1208	1	1.0598	1.0764	1.024	1.08533333	1.0735	1.096
Australia	1	1.000425	1.0128	1.016975	1.0232	1.0399	1.0352	1.0705	1	1.1116	1	1.0599	1.0528	1.006275	1.05746667	1.02068	1.0958
India	1	1.000375	1.012375	1.011575	1.02305	1.0302	1.0387	1.0714	1.0087	1	1	1.06	1.0537	1.007275	1.05823333	1.015825	1.0947
Hong Kong	1	1.00045	1.013875	1.0309	1.0947	1.0803	1.0398	1.0629	1.0358	1.0991	1	1.0599	1.045	1.0323	1.1989	1.01869	1.0945
Chile	1	1.022	0.0218	1.1038	1.0885	1.1499	1.0328	1.111	1.0307	1.1233	1	1	1.1504	1.0265	1.0648	1.070825	1.101
Turkey	1	1.0032	1.0602	1.0554	1.0986	1.102	1.045	1.0772	1.0441	1.1073	1	1.06	1	1.0371	1.06803333	1.08508	1.095
New Zealand	1.01945	1.000975	1.009975	1.017425	1.022975	1.037025	1.0341	1.0746	1.0083	1.02735	1	1.06	1.0398	1	1.07203333	1.023815	1.0994
EFTA	1	1.00223333	1.04623333	1.0225	1.08226667	1.0787	1.02923333	1.06063333	1.02936667	1.08506667	1	1.0597	1.04706667	1.02643333	1	1.06051	1.09596667
Rest of AEC	1	1	1	1.01716667	1.02535833	1.03231667	1.06645	1.0989	1.0083875	1.02795833	1	1.06	1.07626667	1.01201667	1.09074444	1	1.10656667
ROW	1.0722	1.0009	1.0512	1.0509	1.0967	1.1334	1.0354	1.0711	1.0269	1.1393	1	1.0598	1.1078	1.0206	1.08553333	1.06866	1.0968

Scenario 1B1

Export TAX (TX=1+tx)	d: destination															
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC
Indonesia	1	0.9457	0.9457	0.99	0.99	0.98	1	0.965	0.98	0.98	0.98	0.98	0.98	0.99	0.965	0.9457
Singapore	0.9457	1	0.9457	0.99	0.99	0.99	1	1	0.99	0.99	0.98	1	1	0.99	1	0.9457
Malaysia	0.9457	0.9457	1	0.99	0.99	0.99	1	1	0.99	0.99	0.98	1	1	0.99	1	0.9457
Japan	0.99	0.99	0.99	1	0.99	0.99	1	1	0.99	0.99	1	1	1	0.99	1	0.99
China	0.99	0.99	0.99	0.99	1	0.99	1	1	0.99	0.99	1	1	1	0.99	1	0.99
South Korea	0.98	0.99	0.99	0.99	0.99	1	1	1	0.99	0.99	1	1	1	0.99	1	0.99
USA	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EU	0.965	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Australia	0.98	0.99	0.99	0.99	0.99	0.99	1	1	1	1	1	1	1	0.99	1	0.99
India	0.98	0.99	0.99	0.99	0.99	0.99	1	1	0.99	1	1	1	1	0.99	1	0.99
Hong Kong	0.98	0.98	0.98	1	1	1	1	1	1	1	1	1	1	1	1	0.99
Chile	0.98	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Turkey	0.98	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
New Zealand	0.99	0.99	0.99	0.99	0.99	0.99	1	1	0.99	0.99	1	1	1	1	1	0.99
EFTA	0.965	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Rest of AEC	0.9457	0.9457	0.9457	0.99	0.99	0.99	1	1	0.99	0.99	0.99	1	1	0.99	1	0.9457
ROW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Scenario 1B2

Export TAX (TX=1+tx)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	0.9025	0.9025	0.98	0.98	0.95	0.999	0.93	0.95	0.95	0.95	0.95	0.95	0.98	0.93	0.9025	0.999
Singapore	0.9025	1	0.9025	0.98	0.98	0.98	0.999	1	0.98	0.98	0.95	0.999	0.999	0.98	1	0.9025	0.999
Malaysia	0.9025	0.9025	1	0.98	0.98	0.98	0.999	1	0.98	0.98	0.95	0.999	0.999	0.98	1	0.9025	0.999
Japan	0.98	0.98	0.98	1	0.98	0.98	0.999	1	0.98	0.98	0.999	0.999	0.999	0.98	1	0.98	0.999
China	0.98	0.98	0.98	0.98	1	0.98	0.999	1	0.98	0.98	0.999	0.999	0.999	0.98	1	0.98	0.999
South Korea	0.95	0.98	0.98	0.98	0.98	1	0.999	1	0.98	0.98	0.999	0.999	0.999	0.98	1	0.98	0.999
USA	0.999	0.999	0.999	0.999	0.999	0.999	1	1	0.999	0.999	1	1	1	0.999	1	0.999	1
EU	0.93	0.999	0.999	0.999	0.999	0.999	1	1	0.999	0.999	1	1	1	0.999	1	0.999	1
Australia	0.95	0.98	0.98	0.98	0.98	0.98	0.999	1	1	0.98	0.999	0.999	0.999	0.98	1	0.98	0.999
India	0.95	0.98	0.98	0.98	0.98	0.98	0.999	1	0.98	1	0.999	0.999	0.999	0.98	1	0.98	0.999
Hong Kong	0.95	0.95	0.95	0.999	0.999	0.999	0.999	1	0.999	0.999	1	0.999	0.999	0.98	1	0.98	0.999
Chile	0.95	0.999	0.999	0.999	0.999	0.999	1	1	0.999	0.999	1	1	1	0.999	1	0.999	1
Turkey	0.95	0.999	0.999	0.999	0.999	0.999	1	1	0.999	0.999	1	1	1	0.999	1	0.999	1
New Zealand	0.98	0.98	0.98	0.98	0.98	0.98	0.999	1	0.98	0.98	0.999	0.999	0.999	1	1	0.98	0.999
EFTA	0.93	0.999	0.999	0.999	0.999	0.999	1	1	0.999	0.999	1	1	1	0.999	1	0.999	1
Rest of AEC	0.9025	0.9025	0.9025	0.98	0.98	0.98	0.999	1	0.98	0.98	0.98	0.999	0.999	0.98	1	0.9025	0.999
ROW	0.999	0.999	0.999	0.999	0.999	0.999	1	1	0.999	0.999	0.999	1	1	0.999	1	0.999	1

Scenario 2B1

ImportTAX (TM=1+tm)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	1.00005	1.00194375	1.02065	1.0473	1.0125625	1.0438	1.018525	1.00475	1.014225	1	1.015	1.0157	1.0168	1.01535833	1.00239188	1.0957
Singapore	1.00225313	1	1.000425	1.003075	1.03315	1.0128125	1.0319	1.0579	1.004025	1.0545	1	1.014975	1.0395	1.0031625	1.0491	1.00225563	1.0955
Malaysia	1.00208125	1.00000938	1	1.0042	1.034125	1.0120125	1.0344	1.0613	1.004325	1.0503	1	1.014975	1.0427	1.0035875	1.04766667	1.00226438	1.0952
Japan	1.03495	1.00015	1.0070625	1	1.04755	1.0113	1.0367	1.0553	1.00405	1.05205	1	1.01495	1.0413	1.003325	1.0385	1.0365	1.0936
China	1.03605	1.000275	1.0139	1.02065	1	1.05605	1.0359	1.0661	1.01555	1.0400875	1	1.0599	1.0264	1.0128	1.0491	1.0260325	1.095
South Korea	1.00875	1.0002	1.0073625	1.0044125	1.04595	1	1.0376	1.0679	1.0044125	1.04935	1	1.014975	1.0437	1.0035625	1.04476667	1.03653	1.0939
USA	1.0705	1.0011	1.052	1.0465	1.0959	1.1267	1	1.001848	1.0302	1.1148	1	1.0599	1.001683	1.0241	1.0522	1.07392	1.0958
EU	1.018325	1.001	1.0529	1.0452	1.0964	1.1164	1.001077	1	1.0302	1.1208	1	1.0598	1.0764	1.024	1.08533333	1.0735	1.096
Australia	1.0092625	1.0002125	1.0064	1.0084875	1.0464	1.01995	1.0352	1.0705	1	1.1116	1	1.014975	1.0528	1.0031375	1.05746667	1.04136	1.0958
India	1.0087	1.00075	1.02475	1.02315	1.034575	1.0604	1.0387	1.0714	1.0174	1	1	1.06	1.0537	1.01455	1.05823333	1.03165	1.0947
Hong Kong	1.018925	1.00045	1.013875	1.0309	1.0947	1.0803	1.0398	1.0629	1.0358	1.0991	1	1.0599	1.045	1.0323	1.1989	1.03738	1.0945
Chile	1.02385	1.0055	0.75545	1.02595	1.0885	1.037475	1.0328	1.111	1.007675	1.1233	1	1	1.1504	1.006625	1.0648	1.070825	1.101
Turkey	1.01985	1.0032	1.0602	1.0554	1.0493	1.102	1.045	1.0772	1.0441	1.1073	1	1.06	1	1.0371	1.06803333	1.08508	1.095
New Zealand	1.0389	1.0004875	1.0049875	1.0087125	1.04595	1.0185125	1.0341	1.0746	1.00415	1.0547	1	1.015	1.0398	1	1.07203333	1.04763	1.0994
EFTA	1.01629167	1.00223333	1.04623333	1.0225	1.08226667	1.0787	1.02923333	1.06063333	1.02936667	1.08506667	1	1.0597	1.04706667	1.02643333	1	1.06051	1.09596667
Rest of AEC	1.00249167	1.0003849	1.00128802	1.03433333	1.05071667	1.06463333	1.06645	1.0989	1.016775	1.05591667	1	1.06	1.07626667	1.02403333	1.09074444	1.00209596	1.10656667
ROW	1.0722	1.0009	1.0512	1.0509	1.09	1.1334	1.0354	1.0711	1.0269	1.1393	1	1.0598	1.1078	1.0206	1.08553333	1.06866	1.0968

Scenario 2B2

ImportTAX (TM=1+tm)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	1	1	1.010325	1.02365	1	1.0438	1	1	1	1	1	1	1.0084	1	1	1.0957
Singapore	1	1	1	1.0001845	1.005525	1.00076875	1.0319	1.0579	1.0002415	1.02725	1	1.001797	1.0395	1.00018975	1.0491	1	1.0955
Malaysia	1	1	1	1.000252	1.0056875	1.00072075	1.0344	1.0613	1.0002595	1.02515	1	1.001797	1.0427	1.00021525	1.04766667	1	1.0952
Japan	1.017475	1.000009	1.00042375	1	1.023775	1.000678	1.0367	1.0553	1.000243	1.026025	1	1.001794	1.0413	1.0001995	1.0385	1.01825	1.0936
China	1.018025	1.00006875	1.003475	1.010325	1	1.028025	1.0359	1.03305	1.007775	1.0133625	1	1.0599	1.0264	1.0064	1.0491	1.0086775	1.095
South Korea	1	1.000012	1.00044175	1.00026475	1.022975	1	1.0376	1.0679	1.00026475	1.024675	1	1.001797	1.0437	1.00021375	1.04476667	1.018265	1.0939
USA	1.0705	1.0011	1.052	1.0465	1.0959	1.1267	1	1	1.0302	1.1148	1	1.0599	1	1.0241	1.0522	1.07392	1.0958
EU	1	1.001	1.0529	1.0452	1.0482	1.1164	1	1	1.0302	1.1208	1	1.0598	1.0764	1.024	1.08533333	1.0735	1.096
Australia	1	1.00001275	1.000384	1.00050925	1.0232	1.001197	1.0352	1.0705	1	1.1116	1	1.001797	1.0528	1.00018825	1.05746667	1.02068	1.0958
India	1	1.000375	1.012375	1.011575	1.011525	1.0302	1.0387	1.0714	1.0087	1	1	1.06	1.0537	1.007275	1.05823333	1.015825	1.0947
Hong Kong	1	1.00045	1.013875	1.0309	1.023675	1.0803	1.0398	1.0629	1.0358	1.0991	1	1.0599	1.045	1.0323	1.1989	1.01869	1.0945
Chile	1	1.00066	0.970654	1.003114	1.0885	1.004497	1.0328	1.111	1.000921	1.1233	1	1	1.1504	1.000795	1.0648	1.070825	1.101
Turkey	1	1.0032	1.0602	1.0554	1.02465	1.0102	1.045	1.0772	1.0441	1.1073	1	1.06	1	1.0371	1.06803333	1.08508	1.095
New Zealand	1.01945	1.00002925	1.00029925	1.00052275	1.022975	1.00111075	1.0341	1.0746	1.000249	1.02735	1	1.0018	1.0398	1	1.07203333	1.023815	1.0994
EFTA	1	1.00223333	1.04623333	1.0225	1.08226667	1.0787	1.02923333	1.06063333	1.02936667	1.08506667	1	1.0597	1.04706667	1.02643333	1	1.06051	1.09596667
Rest of AEC	1	1	1	1.01716667	1.01267917	1.03231667	1.06645	1.0989	1.0083875	1.02795833	1	1.06	1.07626667	1.01201667	1.09074444	1	1.10656667
ROW	1.0722	1.0009	1.0512	1.0509	1.0967	1.1334	1.0354	1.0711	1.0269	1.1393	1	1.0598	1.1078	1.0206	1.08553333	1.06866	1.0968

Scenario 2B1

Export TAX (TX=1+tx)	d: destination															
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC
Indonesia	1	0.9457	0.9457	0.99	0.99	0.98	1	0.965	0.98	0.98	0.98	0.98	0.98	0.99	0.965	0.9457
Singapore	0.9457	1	0.9457	0.97	0.97515	0.97	1	1	0.97	0.99	0.98	0.97	1	0.97	1	0.9457
Malaysia	0.9457	0.9457	1	0.97	0.97515	0.97	1	1	0.97	0.99	0.98	0.97	1	0.97	1	0.9457
Japan	0.99	0.97	0.97	1	0.99	0.97	1	1	0.97	0.99	1	0.97	1	0.97	1	0.99
China	0.99	0.97515	0.97515	0.99	1	0.99	1	1	0.99	0.977625	1	1	0.985	0.99	1	0.977625
South Korea	0.98	0.97	0.97	0.97	0.99	1	1	1	0.9603	0.99	1	0.97	1	0.97	1	0.99
USA	1	1	1	1	1	1	1	0.96	1	1	1	1	1	1	0.99	1
EU	0.965	1	1	1	1	1	0.96	1	1	1	1	1	1	1	1	1
Australia	0.98	0.97	0.97	0.97	0.99	0.9603	1	1	1	1	1	0.97	1	0.97	1	0.99
India	0.98	0.99	0.99	0.99	0.977625	0.99	1	1	0.99	1	1	1	1	0.99	1	0.99
Hong Kong	0.98	0.98	0.98	1	1	1	1	1	1	1	1	1	1	1	1	0.99
Chile	0.98	0.97	0.97	0.97	1	0.97	1	1	0.97	1	1	1	1	0.97	1	1
Turkey	0.98	1	1	1	0.985	1	1	1	1	1	1	1	1	1	1	1
New Zealand	0.99	0.97	0.97	0.97	0.99	0.97	1	1	0.97	0.99	1	0.97	1	1	1	0.99
EFTA	0.965	1	1	1	1	1	0.99	1	1	1	1	1	1	1	1	1
Rest of AEC	0.9457	0.9457	0.9457	0.99	0.977625	0.99	1	1	0.99	0.99	0.99	1	1	0.99	1	0.9457
ROW	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Scenario 2B2

Export TAX (TX=1+tx)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	0.9025	0.9025	0.975	0.978	0.945	0.985	0.922	0.945	0.95	0.95	0.945	0.95	0.975	0.93	0.9025	0.993
Singapore	0.9025	1	0.9025	0.931	0.9456	0.931	0.98	0.98	0.931	0.975	0.945	0.94905	0.988	0.931	0.988	0.9025	0.988
Malaysia	0.9025	0.9025	1	0.931	0.9456	0.931	0.98	0.98	0.931	0.975	0.945	0.94905	0.988	0.931	0.988	0.9025	0.988
Japan	0.975	0.931	0.931	1	0.973	0.931	0.98	0.98	0.931	0.975	0.988	0.94905	0.988	0.931	0.988	0.975	0.988
China	0.978	0.9456	0.9506	0.973	1	0.973	0.983	0.983	0.973	0.9604	0.991	0.986	0.96903	0.973	0.991	0.9604	0.991
South Korea	0.945	0.931	0.931	0.931	0.973	1	0.98	0.98	0.931	0.975	0.988	0.94905	0.988	0.931	0.988	0.98	0.988
USA	0.985	0.98	0.98	0.98	0.983	0.98	1	0.92	0.98	0.985	0.985	0.98	0.985	0.98	0.98	0.985	0.985
EU	0.922	0.98	0.98	0.98	0.983	0.98	0.92	1	0.98	0.985	0.985	0.98	0.985	0.98	0.985	0.985	0.985
Australia	0.945	0.931	0.931	0.931	0.978	0.931	0.98	0.98	1	0.988	0.988	0.94905	0.988	0.931	0.988	0.975	0.988
India	0.95	0.975	0.975	0.975	0.9604	0.975	0.985	0.985	0.975	1	0.993	0.988	0.993	0.975	0.993	0.98	0.993
Hong Kong	0.95	0.945	0.945	0.988	0.991	0.988	0.985	0.985	0.988	0.993	1	0.988	0.993	0.988	0.993	0.98	0.993
Chile	0.945	0.94905	0.94905	0.94905	0.986	0.94905	0.98	0.98	0.94905	0.988	0.988	1	0.988	0.94905	0.988	0.988	0.988
Turkey	0.95	0.988	0.988	0.988	0.96903	0.988	0.985	0.985	0.988	0.993	0.993	0.988	1	0.988	0.993	0.993	0.993
New Zealand	0.975	0.931	0.931	0.931	0.973	0.931	0.98	0.98	0.931	0.975	0.988	0.94905	0.988	1	0.988	0.975	0.988
EFTA	0.93	0.988	0.988	0.988	0.991	0.988	0.985	0.985	0.988	0.993	0.993	0.988	0.993	0.988	1	0.993	0.993
Rest of AEC	0.9025	0.9025	0.9025	0.975	0.9604	0.975	0.985	0.985	0.975	0.98	0.98	0.988	0.993	0.975	0.993	0.9025	0.993
ROW	0.993	0.988	0.988	0.988	0.991	0.988	0.985	0.985	0.988	0.993	0.993	0.988	0.993	0.988	0.993	0.993	1

Scenario 3B1

ImportTAX (TM=1+tm)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	1.00005	1.00194375	1.02065	1.0473	1.0125625	1.0438	1.018525	1.00475	1.014225	1	1.015	1.0157	1.0168	1.01535833	1.00239188	1.0957
Singapore	1.00225313	1	1.000425	1.003075	1.03315	1.0128125	1.0319	1.0579	1.004025	1.0545	1	1.014975	1.0395	1.0031625	1.0491	1.00225563	1.0955
Malaysia	1.00208125	1.00000938	1	1.0042	1.034125	1.0120125	1.0344	1.0613	1.004325	1.0503	1	1.014975	1.0427	1.0035875	1.04766667	1.00226438	1.0952
Japan	1.03495	1.00015	1.0070625	1	1.04755	1.0113	1.0367	1.0553	1.00405	1.05205	1	1.01495	1.0413	1.003325	1.0385	1.0365	1.0936
China	1.03605	1.000275	1.0139	1.02065	1	1.05605	1.0359	1.0661	1.01555	1.0400875	1	1.0599	1.0264	1.0128	1.0491	1.0260325	1.095
South Korea	1.00875	1.0002	1.0073625	1.0044125	1.04595	1	1.0376	1.0679	1.0044125	1.04935	1	1.014975	1.0437	1.0035625	1.04476667	1.03653	1.0939
USA	1.0705	1.0011	1.052	1.0465	1.0959	1.1267	1	1.001848	1.0302	1.1148	1	1.0599	1.001683	1.0241	1.0522	1.07392	1.0958
EU	1.018325	1.001	1.0529	1.0452	1.0964	1.1164	1.001077	1	1.0302	1.1208	1	1.0598	1.0764	1.024	1.08533333	1.0735	1.096
Australia	1.0092625	1.0002125	1.0064	1.0084875	1.0464	1.01995	1.0352	1.0705	1	1.1116	1	1.014975	1.0528	1.0031375	1.05746667	1.04136	1.0958
India	1.0087	1.00075	1.02475	1.02315	1.034575	1.0604	1.0387	1.0714	1.0174	1	1	1.06	1.0537	1.01455	1.05823333	1.03165	1.0947
Hong Kong	1.018925	1.00045	1.013875	1.0309	1.0947	1.0803	1.0398	1.0629	1.0358	1.0991	1	1.0599	1.045	1.0323	1.1989	1.03738	1.0945
Chile	1.02385	1.0055	0.75545	1.02595	1.0885	1.037475	1.0328	1.111	1.007675	1.1233	1	1	1.1504	1.006625	1.0648	1.070825	1.101
Turkey	1.01985	1.0032	1.0602	1.0554	1.0493	1.102	1.045	1.0772	1.0441	1.1073	1	1.06	1	1.0371	1.06803333	1.08508	1.095
New Zealand	1.0389	1.0004875	1.0049875	1.0087125	1.04595	1.0185125	1.0341	1.0746	1.00415	1.0547	1	1.015	1.0398	1	1.07203333	1.04763	1.0994
EFTA	1.01629167	1.00223333	1.04623333	1.0225	1.08226667	1.0787	1.02923333	1.06063333	1.02936667	1.08506667	1	1.0597	1.04706667	1.02643333	1	1.06051	1.09596667
Rest of AEC	1.00249167	1.0003849	1.00128802	1.03433333	1.05071667	1.06463333	1.06645	1.0989	1.016775	1.05591667	1	1.06	1.07626667	1.02403333	1.09074444	1.00209596	1.10656667
ROW	1.0722	1.0009	1.0512	1.0509	1.09	1.1334	1.0354	1.0711	1.0269	1.1393	1	1.0598	1.1078	1.0206	1.08553333	1.06866	1.0968

Scenario 3B2

ImportTAX (TM=1+tm)	d: destination																
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW
Indonesia	1	1	1	1.010325	1.02365	1	1.0438	1	1	1	1	1	1	1.0084	1	1	1.0957
Singapore	1	1	1	1.0001845	1.005525	1.00076875	1.0319	1.0579	1.0002415	1.02725	1	1.001797	1.0395	1.00018975	1.0491	1	1.0955
Malaysia	1	1	1	1.000252	1.0056875	1.00072075	1.0344	1.0613	1.0002595	1.02515	1	1.001797	1.0427	1.00021525	1.04766667	1	1.0952
Japan	1.017475	1.000009	1.00042375	1	1.023775	1.000678	1.0367	1.0553	1.000243	1.026025	1	1.001794	1.0413	1.0001995	1.0385	1.01825	1.0936
China	1.018025	1.00006875	1.003475	1.010325	1	1.028025	1.0359	1.03305	1.007775	1.0133625	1	1.0599	1.0264	1.0064	1.0491	1.0086775	1.095
South Korea	1	1.000012	1.00044175	1.00026475	1.022975	1	1.0376	1.0679	1.00026475	1.024675	1	1.001797	1.0437	1.00021375	1.04766667	1.018265	1.0939
USA	1.0705	1.0011	1.052	1.0465	1.0959	1.1267	1	1	1.0302	1.1148	1	1.0599	1	1.0241	1.0522	1.07392	1.0958
EU	1	1.001	1.0529	1.0452	1.0482	1.1164	1	1	1.0302	1.1208	1	1.0598	1.0764	1.024	1.08533333	1.0735	1.096
Australia	1	1.00001275	1.000384	1.00050925	1.0232	1.001197	1.0352	1.0705	1	1.1116	1	1.001797	1.0528	1.00018825	1.05746667	1.02068	1.0958
India	1	1.000375	1.012375	1.011575	1.011525	1.0302	1.0387	1.0714	1.0087	1	1	1.06	1.0537	1.007275	1.05823333	1.015825	1.0947
Hong Kong	1	1.00045	1.013875	1.0309	1.023675	1.0803	1.0398	1.0629	1.0358	1.0991	1	1.0599	1.045	1.0323	1.1989	1.01869	1.0945
Chile	1	1.00066	0.970654	1.003114	1.0885	1.004497	1.0328	1.111	1.000921	1.1233	1	1	1.1504	1.000795	1.0648	1.070825	1.101
Turkey	1	1.0032	1.0602	1.0554	1.02465	1.102	1.045	1.0772	1.0441	1.1073	1	1.06	1	1.0371	1.06803333	1.08508	1.095
New Zealand	1.01945	1.00002925	1.00029925	1.00052275	1.022975	1.00111075	1.0341	1.0746	1.000249	1.02735	1	1.0018	1.0398	1	1.07203333	1.023815	1.0994
EFTA	1	1.00223333	1.04623333	1.0225	1.08226667	1.0787	1.02923333	1.06063333	1.02936667	1.08506667	1	1.0597	1.04706667	1.02643333	1	1.06051	1.09596667
Rest of AEC	1	1	1	1.01716667	1.01267917	1.03231667	1.06645	1.0989	1.0083875	1.02795833	1	1.06	1.07626667	1.01201667	1.09074444	1	1.10656667
ROW	1.0722	1.0009	1.0512	1.0509	1.0967	1.1334	1.0354	1.0711	1.0269	1.1393	1	1.0598	1.1078	1.0206	1.08553333	1.06866	1.0968

Appendix 11. GSIM Input Matrix: Final NTMs Scenario 3B1 - 3B2

Scenario 3B1

Export TAX (TX=1+tx)	d: destination																			
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW			
Indonesia	1.00	0.93	0.93	0.98	0.97	0.97	0.99	0.95	0.97	0.96	0.97	0.97	0.97	0.98	0.95	0.93	0.98			
Singapore	0.93	1.00	0.93	0.96	0.96	0.96	0.99	0.99	0.96	0.97	0.97	0.96	0.96	0.96	0.99	0.93	0.98			
Malaysia	0.93	0.93	1.00	0.96	0.96	0.96	0.99	0.99	0.96	0.97	0.97	0.96	0.99	0.96	0.99	0.93	0.98			
Japan	0.97	0.96	0.95	1.00	0.97	0.96	0.99	0.99	0.96	0.97	0.99	0.96	0.99	0.96	0.99	0.97	0.98			
China	0.97	0.96	0.96	0.98	1.00	0.98	0.99	0.99	0.98	0.96	0.99	0.99	0.97	0.98	0.99	0.96	0.98			
South Korea	0.96	0.96	0.95	0.96	0.97	1.00	0.99	0.99	0.95	0.97	0.99	0.96	0.99	0.96	0.99	0.97	0.98			
USA	0.98	0.99	0.98	0.99	0.98	0.99	1.00	0.95	0.99	0.98	0.99	0.99	0.99	0.99	0.98	0.98	0.98			
EU	0.95	0.99	0.98	0.99	0.98	0.99	0.95	1.00	0.99	0.98	0.99	0.99	0.99	0.99	0.99	0.98	0.98			
Australia	0.96	0.96	0.95	0.96	0.97	0.95	0.99	0.99	1.00	0.98	0.99	0.96	0.99	0.96	0.99	0.97	0.98			
India	0.96	0.98	0.97	0.98	0.96	0.98	0.99	0.99	0.99	1.00	0.99	0.99	0.99	0.98	0.99	0.97	0.98			
Hong Kong	0.96	0.97	0.96	0.99	0.98	0.99	0.99	0.99	0.99	0.98	1.00	0.99	0.99	0.99	0.99	0.97	0.98			
Chile	0.96	0.96	0.95	0.96	0.98	0.96	0.99	0.99	0.96	0.98	0.99	1.00	0.99	0.96	0.99	0.98	0.98			
Turkey	0.96	0.99	0.98	0.99	0.97	0.99	0.99	0.99	0.99	0.98	0.99	0.99	1.00	0.99	0.99	0.98	0.98			
New Zealand	0.97	0.96	0.95	0.96	0.97	0.96	0.99	0.99	0.96	0.97	0.99	0.96	0.99	1.00	0.99	0.97	0.98			
EFTA	0.95	0.99	0.98	0.99	0.98	0.99	0.98	0.99	0.99	0.98	0.99	0.99	0.99	0.99	1.00	0.98	0.98			
Rest of AEC	0.93	0.93	0.93	0.98	0.96	0.98	0.99	0.99	0.98	0.97	0.98	0.99	0.99	0.98	0.99	0.93	0.98			
ROW	0.98	0.99	0.98	0.99	0.98	0.99	0.99	0.99	0.99	0.98	0.99	0.99	0.99	0.99	0.99	0.98	0.98			

Scenario 3B2

Export TAX (TX=1+tx)	d: destination																			
s: source	Indonesia	Singapore	Malaysia	Japan	China	South Korea	USA	EU	Australia	India	Hong Kong	Chile	Turkey	New Zealand	EFTA	Rest of AEC	ROW			
Indonesia	1.00	0.89	0.89	0.96	0.96	0.96	0.93	0.97	0.91	0.93	0.94	0.93	0.94	0.96	0.92	0.89	0.98			
Singapore	0.89	1.00	0.89	0.92	0.93	0.92	0.97	0.97	0.92	0.96	0.93	0.94	0.98	0.92	0.98	0.89	0.97			
Malaysia	0.89	0.89	1.00	0.92	0.93	0.92	0.97	0.97	0.92	0.96	0.93	0.94	0.98	0.92	0.98	0.89	0.97			
Japan	0.96	0.92	0.91	1.00	0.96	0.92	0.97	0.97	0.92	0.96	0.97	0.94	0.98	0.92	0.98	0.96	0.97			
China	0.96	0.93	0.93	0.96	1.00	0.96	0.97	0.97	0.96	0.94	0.98	0.97	0.96	0.96	0.98	0.94	0.97			
South Korea	0.93	0.92	0.91	0.92	0.96	1.00	0.97	0.97	0.92	0.96	0.97	0.94	0.98	0.92	0.98	0.96	0.97			
USA	0.97	0.97	0.96	0.97	0.97	0.97	1.00	0.91	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
EU	0.91	0.97	0.96	0.97	0.97	0.97	0.91	1.00	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97			
Australia	0.93	0.92	0.91	0.92	0.96	0.92	0.97	0.97	1.00	0.97	0.97	0.94	0.98	0.92	0.98	0.96	0.97			
India	0.93	0.93	0.93	0.94	0.96	0.94	0.97	0.97	0.96	1.00	0.98	0.98	0.98	0.96	0.98	0.96	0.97			
Hong Kong	0.93	0.93	0.93	0.98	0.97	0.96	0.98	0.97	0.98	0.98	1.00	0.98	0.98	0.98	0.98	0.96	0.98			
Chile	0.93	0.94	0.93	0.94	0.97	0.94	0.97	0.97	0.94	0.97	0.97	1.00	0.98	0.94	0.98	0.97	0.98			
Turkey	0.93	0.97	0.97	0.98	0.98	0.98	0.97	0.97	0.98	0.98	0.98	0.98	1.00	0.98	0.98	0.98	0.98			
New Zealand	0.96	0.92	0.91	0.92	0.96	0.92	0.97	0.97	0.92	0.96	0.97	0.94	0.98	1.00	0.98	0.96	0.97			
EFTA	0.91	0.97	0.97	0.98	0.97	0.98	0.97	0.97	0.98	0.98	0.98	0.98	0.98	0.98	1.00	0.98	0.98			
Rest of AEC	0.89	0.89	0.89	0.96	0.94	0.96	0.97	0.97	0.96	0.96	0.97	0.98	0.98	0.96	0.98	0.89	0.98			
ROW	0.98	0.97	0.97	0.98	0.97	0.98	0.97	0.97	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			

Appendix 12. Trade Conversion of All Scenarios

Scenario	Increase in total trade value of Indonesia (US$)	Degree of sea-borne trade of Indonesia*	Change of sea-borne trade value (US$)	Indonesia's weighted average unit price per ton (US$/ton)**	Trade change (tons)	Change in tonnage per cargo type			Containerized Cargo	
						Degree of Containerization**	Containerized Cargo (tons)	Bulk Cargo (tons)	Average tonnage per TEU**	TEU
Scenario 1A1	2,249,015,437	99.91%	2,246,991,323	12,383	181,458	65%	118,455.44	63,002.31	2.57	46,091.61
Scenario 1A2	4,391,522,675	99.91%	4,387,570,305	12,383	354,322	65%	231,301.11	123,020.97	2.57	90,000.43
Scenario 1A3	112,137,561	99.91%	112,036,637	12,383	9,048	65%	5,906.28	3,141.34	2.57	2,298.16
Scenario 1A4	5,442,509,119	99.91%	5,437,610,861	12,383	439,119	65%	286,656.47	152,462.55	2.57	111,539.48
Scenario 1A5	304,986,145	99.91%	304,711,658	12,383	24,607	65%	16,063.59	8,543.66	2.57	6,250.43
Scenario 1A6	10,410,484,251	99.91%	10,401,114,815	12,383	839,951	65%	548,319.28	291,631.85	2.57	213,353.81
Scenario 1A7	654,553,972	99.91%	653,964,873	12,383	52,812	65%	34,475.30	18,336.21	2.57	13,414.51
Scenario 1A8	1,153,288,283	99.91%	1,152,250,324	12,383	93,051	65%	60,743.59	32,307.39	2.57	23,635.64
Scenario 1A9	20,542,422,643	99.91%	20,523,934,462	12,383	1,657,428	65%	1,081,967.57	575,460.71	2.57	420,999.06
Scenario 1A10	24,629,052,910	99.91%	24,606,886,763	12,383	1,987,151	65%	1,297,210.03	689,940.64	2.57	504,750.98
Scenario 1B1	38,455,385,565	99.91%	38,420,775,718	12,383	3,102,703	65%	2,025,441.74	1,077,261.62	2.57	788,109.63
Scenario 1B2	59,744,151,250	99.91%	59,690,381,514	12,383	4,820,349	65%	3,146,719.13	1,673,629.85	2.57	1,224,404.33
Scenario 2B1	36,310,268,688	99.91%	36,277,589,447	12,383	2,929,628	65%	1,912,458.62	1,017,169.85	2.57	744,147.32
Scenario 2B2	55,148,237,304	99.91%	55,098,603,891	12,383	4,449,536	65%	2,904,652.76	1,544,883.21	2.57	1,130,215.08
Scenario 3B1	43,278,141,642	99.91%	43,239,191,315	12,383	3,491,819	65%	2,279,455.87	1,212,362.86	2.57	886,947.81
Scenario 3B2	62,566,210,830	99.91%	62,509,901,240	12,383	5,048,042	65%	3,295,356.76	1,752,685.01	2.57	1,282,239.99