

Who Benefits from RCEP? Application of Trade Policy Tools

*Francis Mark A. Quimba, Mark Anthony A. Barral,
and Abigail E. Andrada*



The PIDS Discussion Paper Series constitutes studies that are preliminary and subject to further revisions. They are being circulated in a limited number of copies only for purposes of soliciting comments and suggestions for further refinements. The studies under the Series are unedited and unreviewed. The views and opinions expressed are those of the author(s) and do not necessarily reflect those of the Institute. Not for quotation without permission from the author(s) and the Institute.

CONTACT US:

RESEARCH INFORMATION DEPARTMENT
Philippine Institute for Development Studies

18th Floor, Three Cyberpod Centris - North Tower
EDSA corner Quezon Avenue, Quezon City, Philippines

publications@pids.gov.ph
(+632) 8877-4000

<https://www.pids.gov.ph>

Who Benefits from RCEP? Application of Trade Policy Tools

Francis Mark A. Quimba
Mark Anthony A. Barral
Abigail E. Andrada

PHILIPPINE INSTITUTE FOR DEVELOPMENT STUDIES

December 2021

Abstract

The Regional Comprehensive Economic Partnership Agreement or RCEP gathers 10 ASEAN Countries and five partners, namely, the Republic of Korea, China, Japan, New Zealand and Australia. RCEP covers a market of 2.2 billion consumers and accounts for more than 30% of the global GDP. The agreement was signed last November 15, 2020 through a video conference with the abovementioned countries. RCEP is the largest free trade agreement and can be a catalyst for economic development for the Philippines. However, there are economic and political concerns being raised against RCEP. This paper contributes to the discussion on RCEP by providing a policy tool that calculates the impact of the trade agreement to exports and GDP. The calculations show that RCEP has positive impact on Philippine exports and GDP. Other top gainers would be Vietnam and Korea.

Keywords: regional integration, digital, sustainable development, trade

Table of Contents

1.	Introduction	1
2.	The RCEP debate	2
2.1	Harmonizing regional integration through the RCEP	3
2.2	RCEP's income effects.....	4
2.3	RCEP's effects on imports	5
2.4	Post-Covid pandemic recovery through RCEP	6
3.	Methodology	6
3.1	Gravity model	8
4.	Results and discussion	12
5.	Conclusion and Recommendations	24
6.	References	26

List of Figures

Figure 1.	RCEP to benefit Japan and Korea the most.....	3
Figure 2.	Gravity model of Physics and Trade.....	8
Figure 3.	Conditional General Equilibrium Effects	10
Figure 4.	General Equilibrium Effects	11
Figure 5.	Trade Openness (Total Trade) of RCEP economies, 2018.....	12
Figure 6.	Trade openness of selected ASEAN economies, 1990-2018.....	13
Figure 7.	Sectoral and geographical composition of Philippine exports, 2018	14
Figure 8.	Sectoral and geographical composition of Philippine imports, 2018	15
Figure 9.	Orientation of Philippines' exports, 2018	16
Figure 10.	Orientation of Philippines' exports, 2016	17
Figure 11.	Trade complementarity among RCEP economies.....	18
Figure 12.	Change in export (%) for RCEP economies	20
Figure 13.	Changes in exports (%) for non-RCEP economies	20
Figure 14.	Impact to GDP for RCEP economies.....	21
Figure 15.	Change in inward multilateral resistances	21
Figure 16.	Change in factory gate prices (%)	22
Figure 17.	Impact to real GDP of RCEP should India join the agreement.....	23
Figure 18.	Impact to real GDP of RCEP should the economy choose not to join the RCEP agreement.....	23
Figure 19.	Impact to Real GDP of the presence of bilateral FTA with the US under the No RCEP Scenario.....	24

List of Tables

Table 1.	Decomposition of exports growth of RCEP economies	18
Table 2.	Results of the gravity model.....	19

List of Appendices

Appendix 1.	General Equilibrium Results (Scenario 1).....	29
-------------	---	----

List of Acronyms

AMS – ASEAN Member States

ASEAN – Association of Southeast Asian Nations

CPTPP – Comprehensive and Progressive Agreement for Trans-Pacific Partnership

FTA – Free trade Agreement

GDP – gross domestic product

GVC – global value chain

IMR – inward multilateral resistances

IPR – intellectual property rights

NTB – non-tariff barriers

NTM – non-tariff measures

OMR – outward multilateral resistances

PRC – People's Republic of China

RCEP – Regional Comprehensive Economic Partnership

RTA – Regional trade Agreement

SL – Sensitive Lists

SME – Small and medium-sized enterprise

STRACAP – Standards, technical regulations and conformity assessment procedures

TRQ – Tariff-rate quota

WTO – World Trade Organization

Who Benefits from RCEP? Application of Trade Policy Tools

Francis Mark A. Quimba, Mark Anthony A. Barral and Abigail E. Andrada¹

1. Introduction

The Regional Comprehensive Economic Partnership or RCEP gathers 10 ASEAN Countries and five partners namely, the Republic of Korea, China, Japan, New Zealand and Australia. RCEP covers a market of 2.2 billion consumers and accounts for more than 30% of the global GDP and about 28 percent of global trade. The agreement was signed last November 15, 2020 through a video conference with the abovementioned countries. RCEP is the largest free trade agreement and can be a catalyst for economic development for the Philippines.

The RCEP agreement aims to further liberalize trade in goods and services while enhancing competition policy, IPRs, investment, technical cooperation, government procurement and others. Another objective of RCEP is to strengthen ASEAN Centrality and to come up with a regional balance of power, as economic activities have shifted towards Asia in the 21st century. Asia is now the center of production, research and development, and consumption. The RCEP region contains the main GVC Hubs of Japan, China and Korea.

In the light of COVID-19, the Heads of State/Government of the RCEP economies also view the signing of the Agreement as “a strong commitment to supporting economic recovery, inclusive development, job creation and strengthening regional supply chains as well as [our] support for an open, inclusive, rules-based trade and investment arrangement” as expressed in a Joint Leaders’ Statement during the 4th RCEP Summit (ASEAN 2020).

The text of the agreement can be divided into 4 parts:

- 1) Area for Goods - tackles tariffs, customs procedures, trade facilitation, standards, technical regulations and conformity assessment procedures (STRACAP), and trade remedies
- 2) Area for Services and Investments - covers financial services, telecommunications services, professional services, investments, movement of natural persons
- 3) Area for Sustainable Growth - talks about support for SMEs, economic and technical cooperation, and other emerging issues
- 4) Area for Business Environment - encompasses intellectual property, electronic commerce, competition, and government procurement.

Malvenda (2019) describes the agreement as forward-looking as “the agreement balances a mix of ‘WTO-plus’ commitments to lower at-the-border trade barriers and ‘WTO-extra’ provisions to address behind-the-border regulatory issues.” This can be seen in the areas of the text that aims to achieve a comprehensive economic partnership covering issues in Area for Business environment such as intellectual property, e-commerce, competition, etc.

The agreement’s entry into force is dependent on the ratification of the agreement by six ASEAN member States and three of the five FTA partners. Once that threshold is passed,

¹ Senior Research Fellow, Supervising Research Specialist, and Research Analyst II, respectively, Philippine Institute for Development Studies.

RCEP will take effect for those countries after 60 days. To date, RCEP has been ratified by all five of the ASEAN FTA partners (Australia, New Zealand, China, Japan and South Korea). As for the AMS, 6 member states (Brunei Darussalam, Cambodia, Laos, Singapore, Thailand and Vietnam) have ratified the agreement.

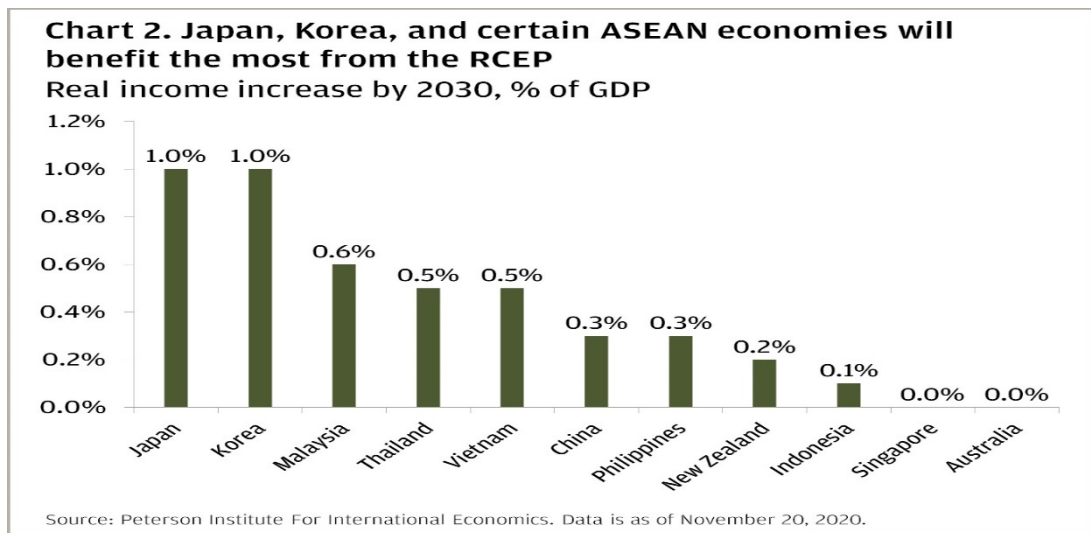
2. The RCEP debate

Various concerns have been raised against the RCEP. Originally, it has always been perceived as a China-led FTA that is “a significant geopolitical win for China” (Ward, 2020, para. 6). Although, the agreement shall boost regional trade and stimulate economic growth, it is also indicative of a pivot to a more China-centric or Sino-centric trade in the region (Wolf et al., 2020), which “could boost China’s influence – a prospect other members do not want” (Malvenda, 2019, para. 22). Hence, despite the signing of the RCEP, certain dips in ties with and resistance to PRC by other signatory economies hamper its ratification. For instance, according to Jaipragas (2020), domestic resistance in economies with unstable relationships with PRC is becoming a hurdle to the effectivity of the trade agreement. As explicated by Ward (2020), despite the RCEP’s reinforcement of economic interdependence among Asian economies, it will also bring the region closer into PRC’s scope. As such, PRC may exploit this opportunity to influence regulations and standards setting within the region like what it is doing to economies participating in its Belt and Road Initiative.

In a presentation, however, Asec. Gepty of the Department of Trade and Industry addressed this concern by saying that RCEP is an ASEAN-led FTA. It was ASEAN who spearheaded the RCEP, as well as, shepherded the negotiations to ensure its conclusion. One of the main purposes of the FTA is to strengthen ASEAN Centrality and to come up with a regional balance of power, as economic activities have shifted towards Asia in the 21st century. Thus, the center of production, research and development, and markets are happening in Asia. Given the strategic advantage of Southeast Asia, ASEAN should maintain this to ensure that the comparative advantage will remain in the region.

Other studies have raised the possibility that RCEP will only be beneficial to the more developed partners of ASEAN. The Peterson Institute for International Economics have estimated that Japan and Korea will have real income increase of 1% while the Philippines will only obtain 0.3% and Indonesia will obtain 0.1% (Figure 1).

Figure 1. RCEP to benefit Japan and Korea the most



RCEP is expected to increase global GDP by 0.2 percent and global trade by 1.9 percent with minimal trade diversion (Petri and Plummer 2018). For the Philippines, Cororaton (2016) has shown that RCEP may result in trade creation particularly in areas of construction, transport machinery and equipment, and services; GDP increase of up to 3.0 percent (USD 2.0 billion); and poverty decline from 24.9 percent to 23.3 percent.

2.1 Harmonizing regional integration through the RCEP

At the onset, rapid growth within East and Southeast Asian countries was primarily fueled by exports to the United State and other regions. Internal trade within the region remained secondary. However, with the growing global value chains and the increasing fragmentation of manufacturing in Asia, government began focusing on stimulating the free movement of goods, services, finance and investments (Ahn 2018).

The signing of the RCEP signaled the commitment of its member countries towards trade reforms and deeper integration in the Asia and Pacific region. RCEP focuses on harmonizing regional trade barriers and procedures. Under the RCEP, Mohamad and Cheng (2020) notes that further collaboration on the eradication of non-tariff barriers (NTBs) and non-tariff measures (NTMs) for essential and non-essential goods is envisioned.

Multilateral trading systems can better liberalize and facilitate trade as compared to bilateral systems, as it provides a wide rules-based approach rather than preferential trading concessions. The RCEP can serve as a platform for regional integration through trade liberalization. With the addition of more countries, RCEP could level the playing field and serve as a cornerstone for the development of a multilateral trading system through which developing economies may gather comparative advantage in the global economy (Lee and Lee 2017).

As RCEP harmonizes policies and standards governing trade and investment, it can deepen regional economic integration and thus, can be regarded as a component of a policy framework

for expanding regional production networks and the supply chain. Simulations based on computerized general equilibrium modeling demonstrate that region-wide FTAs such as the RCEP could generate more economic benefits than bilateral FTAs.

Propper & Catarivas (2020) states that the new agreement also bridges existing FTAs among its members; consolidates distinct agreements into a “single basket” to aid exporters; unifies source rules among member countries; and expands preceding agreements signed under the World Trade Organization.

A more open and dynamic external environment can assist RCEP members as they transition economically. Countries may benefit from the existence of dominant members who are committed to pursuing reforms and liberalizing their economies as it would allow for the easier implementation of domestic reforms. Pangetsu and Armstrong (2018) note that as RCEP is inclusive towards less-developed countries, significant potential gains may be gleaned from assisting such countries to achieve trade openness and development. RCEP shows higher economic benefits compared to the CPTPP as member countries prior to trade liberalization generally have high tariff barriers.

Alongside the economic impact of the RCEP, there are political, diplomatic and security implications for member countries and regional affairs (Jaehyon 2021). With threats from the US-China strategic competition, RCEP is a platform by which countries in the region can alleviate the negative impacts brought by the crisis. Chinese trade and investment shall expand to neighboring countries through the RCEP as it makes facilitating partnerships easier in particular the transfer of industrial production from China to surrounding countries. However, countries have felt that, despite major difficulties in other relations with China, there is a strong need to promote economic ties to help domestic enterprises in a period of economic crisis.

2.2 RCEP's income effects

Estimated economic gains for the international economy by Petri and Plummer (2020) using a general equilibrium model showed that the combination of the CPTPP and RCEP could increase real income by \$147 billion and \$186 billion, respectively, by 2030. Petri and Plummer also estimated that for RCEP members, there is a potential increase in real income by \$174 billion by 2030, which translates to 0.4% of the aggregate GDP of its members.

Kang et al. (2020) show that forecasts using traditional economic modelling show that China, Japan, and the Republic of Korea will gain the most from RCEP. Potential gains in real income are estimated at \$85 billion for PRC, \$48 billion for Japan, and \$23 billion for the Republic of Korea. Due to their economic size, large gains are imminent for these economies as they already possess comparative advantage in the industrial production's higher-end, value-added segment. The economies of Indonesia, Malaysia, Thailand and Vietnam are also expected to gain from RCEP. With more opportunities for foreign investment, larger regional trade, and robust regional value-chain linkages, other economies may also reap benefits from the RCEP. However, given ASEAN's notable economic integration and the free trade agreements between ASEAN and non-ASEAN countries that precede the RCEP, marginal gains from RCEP would be limited.

Estimations by Kumagai and Hayakawa (2021) using the IDE-GSM, an IDE computable general equilibrium model based on spatial economics, re-affirm the study conducted by Petri and Plummer that the plus three economies would benefit significantly from RCEP. The results

show that the economic impacts of RCEP as a percentage of GDP, would favor Japan the most (0.66%), South Korea (0.24%), and China (0.13%) as no trade agreements among them preceded the RCEP. However, as the estimations deal with tariff reduction only, the simulations may overestimate the impacts of RCEP. The simulations also showed that considerable benefits for India could be reaped should it accede to the FTA. Finally, the results show that majority of advantages from RCEP are diminished, had China not participated.

In the case of the Philippines, Cororaton et. al. (2021) notes that potential gains can be gleaned from higher exports, lower consumer prices, higher factor prices and factor incomes for households. Using a global computable general equilibrium model, the simulation analysis showed that the greatest positive effects to welfare (Equivalent Variation), in monetary terms, would be to South Korea, China and Japan. For the Philippines an increase in welfare of about US\$ 155 million in 2021 to US\$ 281 by 2024 is expected. In terms of increase in welfare as a proportion of GDP, Viet Nam and Malaysia could gain significantly from the FTA, while, China, New Zealand, and Japan would gain the least. Benefits to the Philippine GDP is within mid-range, increasing its value by 0.41% in 2021 to 0.66% by 2024. The RCEP can also lead to higher real factor prices in the Philippines, thereby increasing the income of households. The decline in consumer prices increases from -0.46% in 2021 to -0.79% in 2024.

2.3 RCEP's effects on imports

A Sensitive Lists (SL) Analysis conducted by Banga, et. al (2021) showed that developed countries had better protection for its pre-RCEP imports under its SLs and TRQs than ASEAN countries. Japan and New Zealand were able to protect 21% and 28% of its pre-RCEP imports respectively, while ASEAN on average protected only 19%. In terms of the number of tariff lines protected, Japan (1324) had the highest protection, followed by Republic of Korea (912).

Imports from China of nearly all ASEAN countries will increase, with the exception of Lao PDR and Vietnam. Despite the imposition of SLs and TRQs, ASEAN member states will potentially see a rise in imports amounting to US\$ 7.8 billion post-RCEP. Among ASEAN members, Malaysia will potentially have the largest increase in imports (US\$ 3.7 billion yearly), followed by Cambodia (US\$ 2.3 billion) and Thailand (US\$ 876 million). Non-ASEAN countries are also expected to see a rise in imports particularly for China (US\$ 11.4 billion), Republic of Korea (US\$ 6.3 billion) and Japan (US\$ 2.2 billion).

In the SMART simulations of RCEP by Banga et. al., results showed that Brunei, Cambodia and Indonesia will increase its importation of textiles and clothing, while Malaysia, Myanmar, and Vietnam will likely increase their importation of vehicles. On the other hand, Cambodia, Lao PDR, Philippines, Malaysia, and Vietnam are bound to increase its imports of electrical machinery and appliances. For Thailand, however, imports for agricultural products will likely increase.

The Philippines would experience a decline in its importation of products from ASEAN countries but would see a rise in imports from China and Republic of Korea. From Republic of Korea, the Philippines would import arms and ammunition, electrical machinery and equipment, plastics and articles thereof. On the contrary, the Philippines would source from China products such as plastics, rubber and articles thereof, apparel and clothing and other produced textiles, footwear, glass and glassware, machinery and mechanical appliances, electrical machinery and equipment.

2.4 Post-Covid pandemic recovery through RCEP

As the Covid-19 pandemic forced countries to close their borders and restrict physical economic activities, the flow of international trade was significantly hampered. Albeit temporary, countries have implemented restrictive trade measures to curb the spread of the virus. However, with the uncertainty of the Covid-19 pandemic, governments have not determined termination dates for the implementation of such measures (Mohamad and Cheng 2020). With the disruption of regional supply chains and the regional trade order crisis, countries have felt the need to collaborate towards the development of an institutional framework to promote trade and recover economically. The RCEP is considered as a platform for regional countries to alleviate the negative effects of the pandemic and recover from the crisis. RCEP is crucial in building resilience across the region post-pandemic as it ensures an inclusive and sustainable economic recovery process. Thangavelu and Narjoko (2021) affirms that the agreement is necessary to boost international trade and investment; and to foster open regionalism despite the pandemic, as more inward-looking policies are being adopted in East Asia. Following the post-pandemic recovery, RCEP could likely serve as a domestic and regional platform for the structural transformation of GVCs. The RCEP can also serve as a potential framework to manage structural transformation of services and trade; and the movement of people in the post-pandemic GVC activities.

Given these concerns, it is important for the Philippines to come up with studies that would provide guidance to policymakers on the impact of RCEP to the economy. This study aims to inform the discussions on ratification of/ concurrence to the RCEP agreement by assessing Philippine trade performance and participation as well as analyzing different scenarios related to RCEP. This study is expected to provide evidence to the Senate on issues related to RCEP and raise awareness to the mega-trade deals being discussed, as well as, provide an analysis of the impact of accession to the agreement by utilizing analytical tools of trade data. These tools can be used in the assessment of other trade agreements and mega-trade deals in the future.

3. Methodology

This study will look at various indicators that could be used to characterize Philippine trade and provide a background on its performance over time. Such measures can also identify the strengths of Philippine trade which, can serve as the foundation for the use of regional trade agreements.

1. Trade openness – measures the Philippines' ability to integrate itself into world trading patterns. It also measures an indicator of policy performance inasmuch as its results from policy choices.

Trade openness is calculated as follows: for any country i , Openness (O_i) is measured as the sum of exports (X_i) and imports (M_i) expressed as a ratio of GDP (equation 1). Higher values of O indicate a more open country.

$$O_i = \frac{(X_i + M_i)}{GDP_i} \quad (1)$$

2. Orientation of trade – Composition of trade can be viewed in terms of sector or geography. Analyzing the sectoral composition of trade of the Philippines can provide insight on how trade contributes to economic growth, as well as, the constraints imposed on certain sectors or commodities.
3. Trade complementarity - measures the extent to which two countries are “natural trading partners” in the sense that what one country exports [imports] overlaps with what the other country imports [exports] (Michaely 1996). Trade complementarity C between countries i and j , approximates the suitability of j 's export supply (import demand) to i 's import demand (export supply) by calculating the degree by which country i 's total imports [exports] match country j 's total exports [imports].

Equation 2 provides the formula for the calculation of a trade complementarity index between two countries i and j . Formally, let m_k^i be sector k 's share in i 's total imports from the world and x_k^j its share in j 's total exports to the world. The import TCI between i and j is then given by,

$$C^{ij} = 100[1 - \frac{\sum_{k=1}^m |m_k^i - x_k^j|}{2}] \quad (2)$$

With perfect correlation between sectoral shares, the index is one hundred; with perfect negative correlation, it is zero.

4. Decomposition of exports growth - Trade patterns constantly change and are not given conclusively. A critical area of policy development is concerned with the expansion of export opportunities and increased accessibility to new markets in order to stimulate reciprocal trade liberalization.

With regard to products or destinations, expansion of exports can be classified at the *intensive margin* (increase in the value of existing exports to the same destinations), *extensive margin* (new products, new destinations) or the *sustainability margin* (longer extension of export spells).

A useful decomposition is as follows. Let K_0 be the set of products exported by the home country in a year taken as the base year, and K_1 be the same set for the year taken as the terminal one. The monetary value of base-year exports is given by (Bacchetta et al. 2012, p.21-22):

$$X_0 = \sum_{K_0} X_{K_0} \quad (3)$$

and that of terminal exports by:

$$X_1 = \sum_{K_1} X_{K_1} \quad (4)$$

The variation in total export value between the two years can be decomposed into:

$$\Delta X = X_1 - X_0 = \sum_{K_0 \cap K_1} \Delta X + \sum_{K_1/K_0} X_K - \sum_{K_0/K_1} X_K \quad (5)$$

where the first term is export variation at the intensive margin (due to exporting more of existing products), the second is the new-product margin (due to exporting more new products) and the third is the “product death margin” (due to fewer failures). Other complex decompositions can be developed, in the same manner, through the combination of destinations and products.

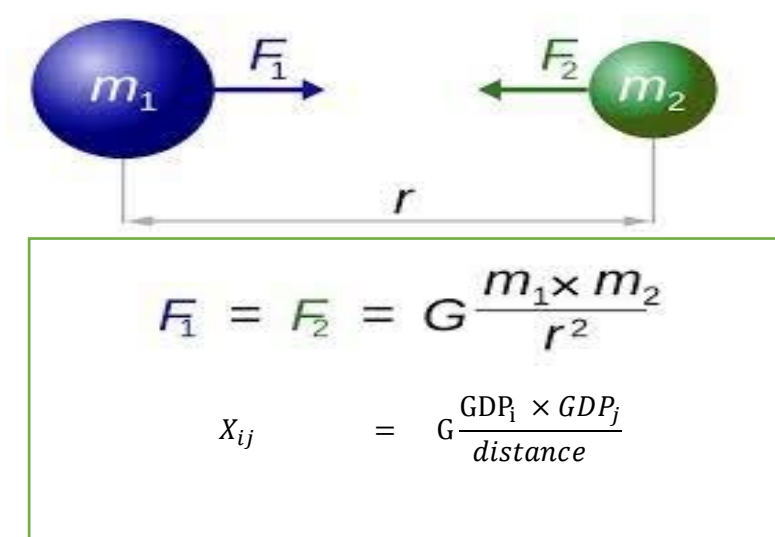
Notably, new-product margin contributions to export growth is relatively small because technically, products materialize in the extensive margin only during its first year of export; thereafter, it is in the intensive margin. Thus, unless firms export on a large scale initially, which is unlikely, it is often the case that the contribution of the extensive margin to overall export growth is limited. .

Another reason for the low contribution of new-product margin to export growth is that new exports fail shortly after its launch which is around 2 years for developing countries. Increasing exports sustainability, which entails an understanding of the reasons for low survival rates, is an underexplored area of trade support (Bacchetta et. al., 2012).

3.1 Gravity model

For the analysis of mega-trade deals, specifically for RCEP, this study will use the structural gravity model (Anderson et al. 2011; Yotov et al. 2016).

Figure 2. Gravity model of Physics and Trade



The name “gravity” comes from Newton’s law of gravity which, can also be used to estimate the flow of goods (i.e. exports or imports) between two economies. That is, exports are directly proportional to the exporting and importing countries’ economic “mass” (GDP), and is inversely proportional to the distance between them. As such, gravity denotes that larger country pairs are expected to trade more, while countries that are further apart are likely to trade less possibly due to higher transport costs. This intuitive relationship is one of the characteristics that makes the gravity model the workhorse of international trade policy analysis (Yotov et al. 2016).

Following Larch and Yotov (2016) and Yotov et al. (2016), this research estimates the general equilibrium effects of the formation of RCEP to the Philippines by expanding the gravity model analysis to allow for changes in the trade cost and the size of the economy. The analysis uses STATA and follows the procedure outlined by Larch and Yotov to obtain the general equilibrium effects of the mega-trade deals. The procedure begins by estimating the baseline gravity model utilizing a panel data with intervals, exporter-time fixed effects, importer-time

fixed effects and pair fixed effects. Equation 6 is estimated using pseudo-poisson maximum likelihood (PPML):

$$X_{ijt} = \exp(T_{ijt} \beta + \pi_{it} + \chi_{jt}) + \mu_{ij} \epsilon_{ijt} \quad (6)$$

where X_{ijt} indicates exports from country i to country j ; GDP is each country's gross domestic product; τ_{ij} represents trade costs between the two countries; distance is the geographical distance between them as an observable proxy for trade costs; and ϵ_{ijt} is a random error term. The c term is a regression constant, and the b terms are coefficients to be estimated.

The general equilibrium effects are then calculated using the results of the gravity estimation. The general equilibrium effects of trade policy using gravity model is a CES-Armington gravity model derived by Larch and Yotov (2016). The system of equations is presented below:

$$\text{Direct (PE):} \quad X_{ij} = \frac{Y_i E_j}{Y} \left(\frac{t_{ij}}{\pi_i p_j} \right)^{1-\sigma} \quad (7)$$

Conditional General

$$\text{Equilibrium effects:} \quad \pi_i^{1-\sigma} = \sum_j \left(\frac{t_{ij}}{p_j} \right)^{1-\sigma} \frac{E_j}{Y} \quad (8)$$

$$p_j^{1-\sigma} = \sum_i \left(\frac{t_{ij}}{\pi_i} \right)^{1-\sigma} \frac{Y_i}{Y} \quad (9)$$

$$\text{Full endowment GE:} \quad p_i = \left(\frac{Y_i}{Y} \right)^{\frac{1}{1-\sigma}} \frac{1}{\beta_i \pi_i} \quad (10)$$

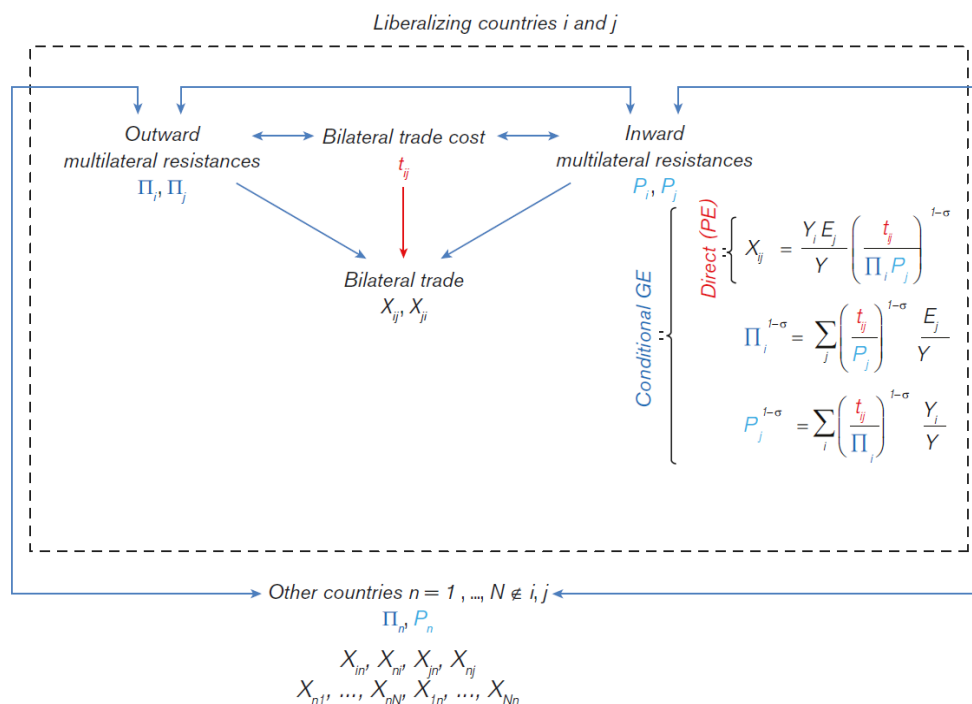
$$E_i = \phi_i Y_i = \phi_i p_i Q_i \quad (11)$$

Equation 1-1 is the theoretical gravity equation that relates bilateral trade flow positively to the size of the economies. It includes a vector of all possible bilateral and unilateral trade policy covariates. After the estimation of the baseline gravity model, a counterfactual experiment is defined by modifying this vector to obtain a vector of trade policy covariates. For this paper, the counterfactual RTA border for RCEP is set to be equal to 0 for all trade among RCEP economies (See Table 2).

As mentioned in the earlier paragraphs, Equation 6 closely resembles the gravity equation in Physics. This captures the direct effect of a decrease in bilateral trade costs -- formation of an RTA between countries i and j . It is said to be the strongest effect of trade liberalization on bilateral trade between the two liberalizing economies. The creation of trade among countries that formed the RTA is driven by changes in the bilateral trade cost, holding national output and expenditure, world output and multilateral trade resistances unchanged.

The model first considers the Conditional General Equilibrium Effects. This is calculated by incorporating the changes to Equation 8 and Equation 9. Figure 3 presents a diagram of the interaction of the three equations.

Figure 3. Conditional General Equilibrium Effects



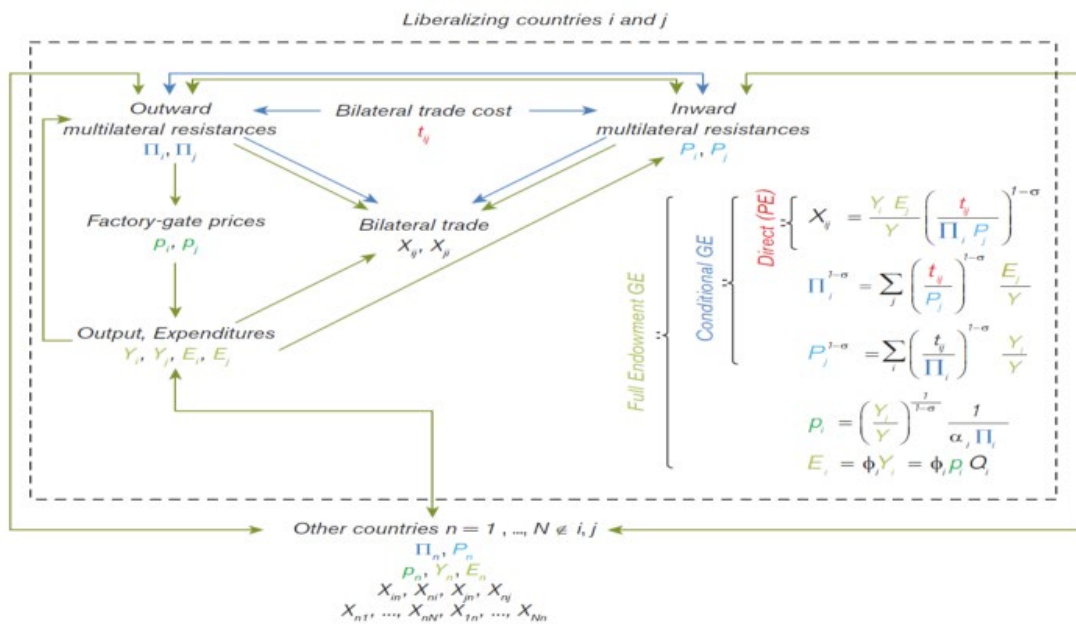
Source: Yotov et al., 2016

Conditional General Equilibrium was utilized as multilateral resistance terms were changed but output and expenditure are assumed to remain constant. First order general equilibrium effects materialize through two channels: inward multilateral resistances (IMR) and the outward multilateral resistances (OMR). The OMR (Equation 8) for a given country captures the incidence of trade costs on the producers in the country as if, instead of shipping separately to each partner, they just shipped to a single unified world market. The IMR (Equation 9) for a given country captures the incidence of trade costs on the consumers in the country as if, instead of buying separately from each trading partner, they just bought from a single unified world market.

When t_{ij} decreases because of the trade liberalization between the RTA forming countries, P_j (inward multilateral resistance) will decrease for all liberalizing countries. Similarly, outward multilateral resistance Π_i will decrease as a result of the bilateral trade liberalization. A fall in inward multilateral resistance will cause country j to import less from all non-RTA source countries including j because it becomes more remote from these countries. Similarly, country i will export less to every other country and more to RTA -member countries.

For the non-RTA member countries, there will be an increase in exports and imports between non-member countries. This arises because at constant output levels, once non-member countries import and exports are diverted from the liberalizing members, they will be redirected to other non-member countries and domestic sales.

Figure 4. General Equilibrium Effects



Source: Yotov et al., 2016

The full endowment general equilibrium effect endogenizes total output Y_i and expenditure E_i by allowing factory gate prices to adjust relative to changes in bilateral trade cost t_{ij} and associated ripple effects (Π_i and P_j) (Figure 4). Therefore, the RTA will have an impact on output, bilateral trade and in trade costs.

Effect on output

Lower t_{ij} translates to higher factory-gate prices, and consequently results in higher output values Y_i and E_i . Output values and expenditures are positively affected, as producers in the liberalizing member countries increase their prices to incorporate the beneficial changes in their outward multilateral resistances. On the contrary, non-member countries will experience greater outward resistance—forcing them to lower their factory-gate prices.

Effect of output on bilateral trade

The increase in nominal income, due to the cost reduction in bilateral trade, shall create additional direct effects on trade. Following growth in nominal income, exports and imports of RTA member states will increase, considering all factors held constant. On the other hand, trade in non-member countries will typically decrease as a result of the reduction in the value of output.

Impact on multilateral resistances

In addition to the direct impact on trade, the changes in inward and outward multilateral resistances will have indirect effects on trade. As a result of its expansion, more weight will be designated to liberalizing economies in the creation of multilateral trade resistances. Through this channel, the impact of trade liberalization among member states is therefore magnified on all countries.

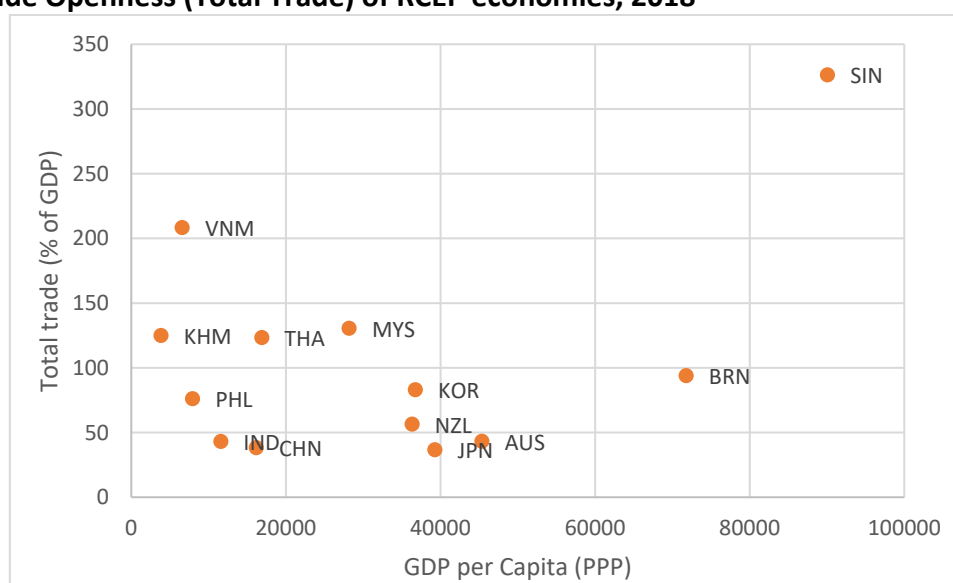
To implement and calculate these indicators, this study obtained data from the World Integrated Trade Solutions of the World Bank (<https://wits.worldbank.org/default.aspx>) which reports the

bilateral trade data of countries. For Intra-national trade flows, the Centre d'Etudes Prospectives et d'Informations Internationales's (CEPII) Trade, Production and Bilateral Protection (TradeProd) database provides data for over 150 countries for the period 1980-2006 expressed in ISIC Re. 2 at the 3-digits level. Gravity modeling variables such as common language, contiguity and presence of a bilateral agreement were obtained from CEPII's gravity database (http://www.cepii.fr/cepii/en/bdd_modele/presentation.asp?id=8).

4. Results and discussion

Figure 5 shows a scatterplot of trade openness of the RCEP economies. It shows there are four clusters of economies with different characteristics. The first group includes the High per capita economies like Brunei and Singapore. The second group is composed of the would be the ASEAN partner countries which have relatively similar GDP per Capita but trade openness is below 100 percent of GDP namely South Korea, New Zealand, Australia and Japan. The third group are ASEAN economies with trade openness above 100 percent but GDP per capita less than PPP 30000/person which includes Vietnam, Cambodia, Malaysia and Thailand. Finally, economies with Trade Openness below 100 percent such as Philippines, Indonesia and China comprise the last group.

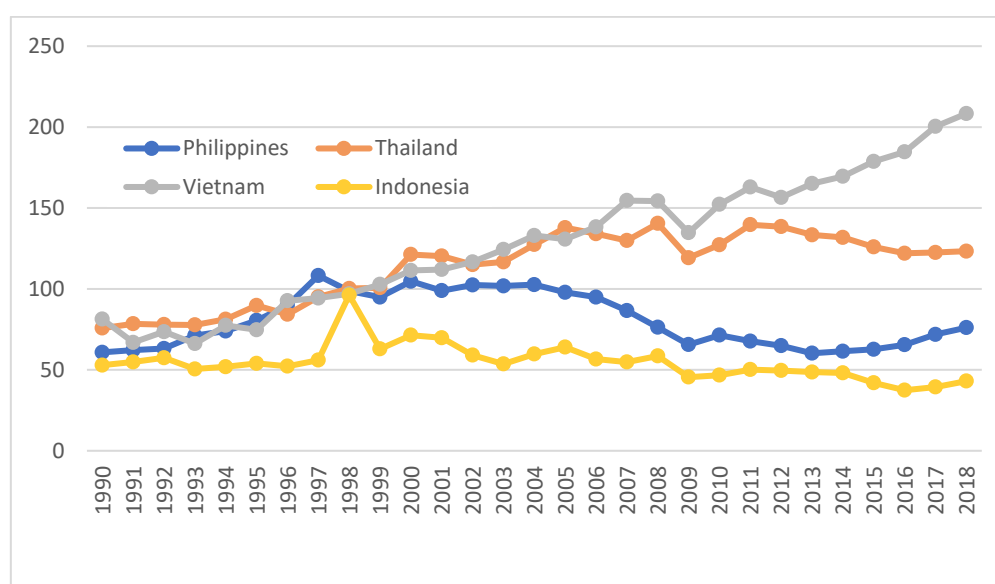
Figure 5. Trade Openness (Total Trade) of RCEP economies, 2018



Source of basic data: WITS

Observing the Philippines' trade openness across time shows that the country has not particularly increased its openness to trade since the Asian Financial Crisis of 1997/1998 (Figure 6). It is worth noting that the Philippines, Thailand and Vietnam have relatively similar Trade Openness numbers in 1993-1998. From 1998, Vietnam's trade openness has sharply increased, Thailand's has increased slowly but remained below 150 percent. The Philippines' trade openness has stagnated at about 100 percent but has since steadily declined. Meanwhile, Indonesia's trade openness has stagnated since 1999.

Figure 6. Trade openness of selected ASEAN economies, 1990-2018



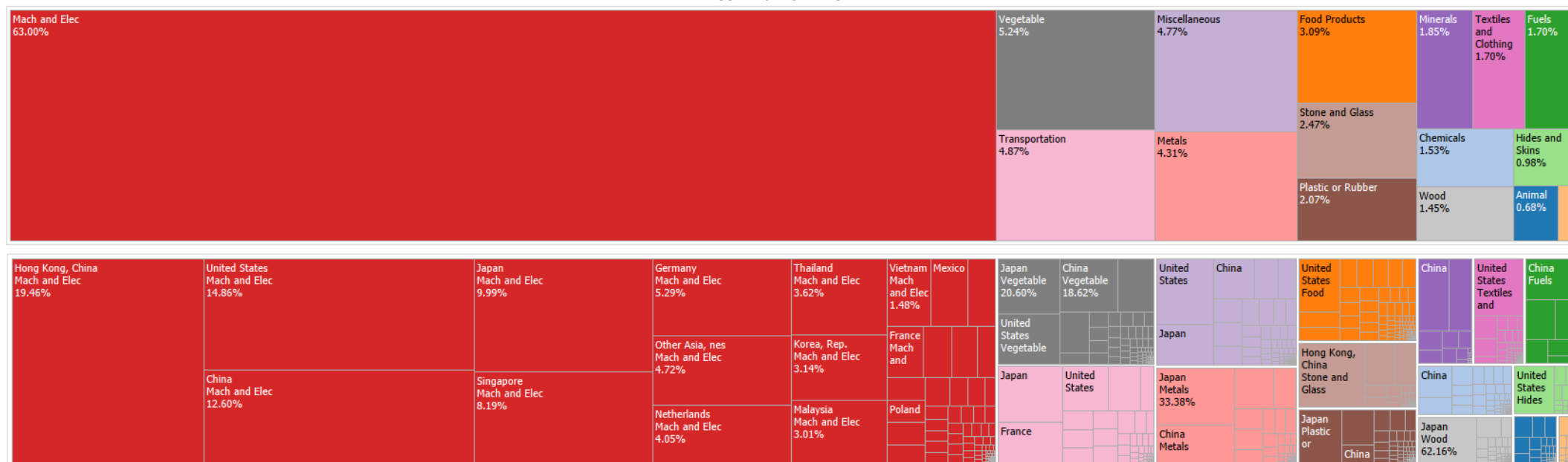
Source: WITS

In terms of sectoral and geographical orientation of trade, Figure 7 shows that Philippines' major exports from Machineries and electrical equipment (63 percent) are mostly exported to RCEP economies (China, Japan, Singapore, Thailand, South Korea, Malaysia, Vietnam). Notably, key export markets for Machineries and Electronic equipment: Hong Kong, China and the United States are not among the RCEP economies. Albeit marginal, Vegetables (plant products) are the second most exported products of the country with a share of 5.24 percent. The key destinations of vegetables are Japan, China and the United States. Other primary exports of the Philippines are Transport (4.87 percent), Miscellaneous (4.77 percent) and Metals (4.31) which constitute the Top 5 exports of the Philippines.

As for imports, Figure 8 shows the key imports of the Philippines. Machine and electronics have the largest share of Philippine Imports. The country imports most of these from China, South Korea and Japan. Other ASEAN economies like Singapore, Thailand and Vietnam are also key sources of imports in this sector. Fuels are the second largest sector of Philippine imports with a total share of 12.07 percent. The main sources of fuel imports are RCEP partner economies like China, Republic of Korea and Indonesia, as well as, Middle-east countries like Saudi Arabia, Kuwait and United Arab Emirates. Transportation has the third largest share at 10.50 percent and the main source of imports are RCEP partner economies of Thailand, Japan, Indonesia and China. Interestingly, other European countries such as Ireland and France have become major sources of imports for transportation as well. Metals share to total imports is roughly 8.30 percent. China accounts for 42 percent of Philippine metals imports while Japan is a distant second at 12.42 percent.

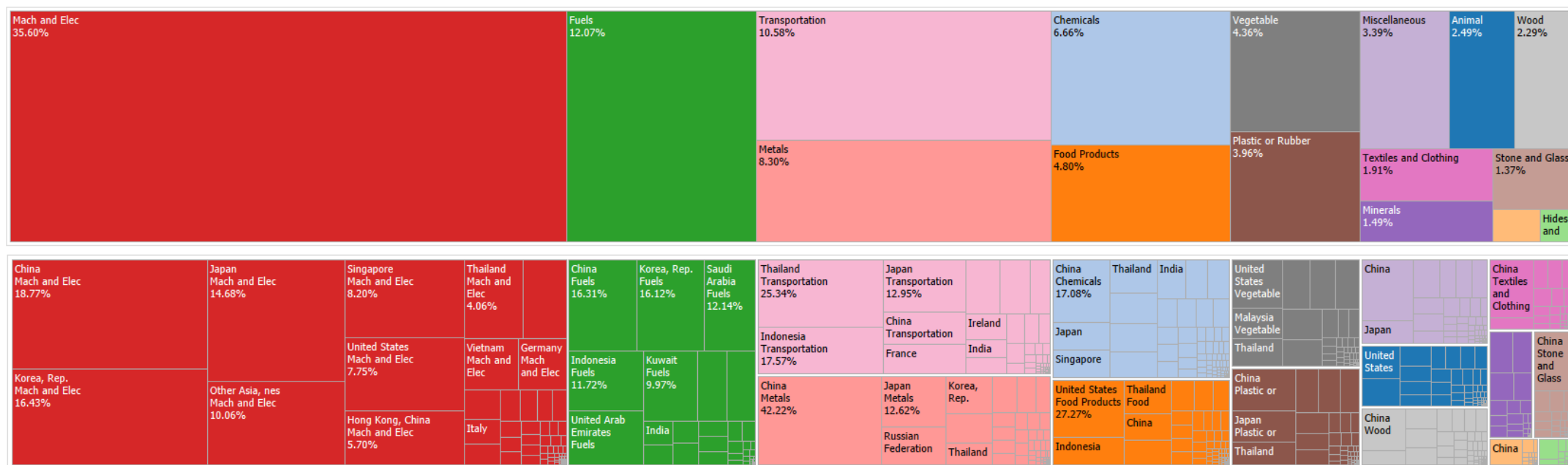
Among all the sector groups that the Philippines imports, the top sources of imports are often from RCEP member economies except for three sectors where the top source is the United States of America. The USA supplies a large share of Philippine imports on Food products, Vegetable products and Animal products. The United States accounts for 27.2 percent of Philippine imports of processed food products. Other key import sources include Indonesia, Thailand, and China. Meanwhile, Vegetable imports are mostly from the US, Malaysia and Thailand.

Figure 7. Sectoral and geographical composition of Philippine exports, 2018



Source of basic data: WITS

Figure 8. Sectoral and geographical composition of Philippine imports, 2018

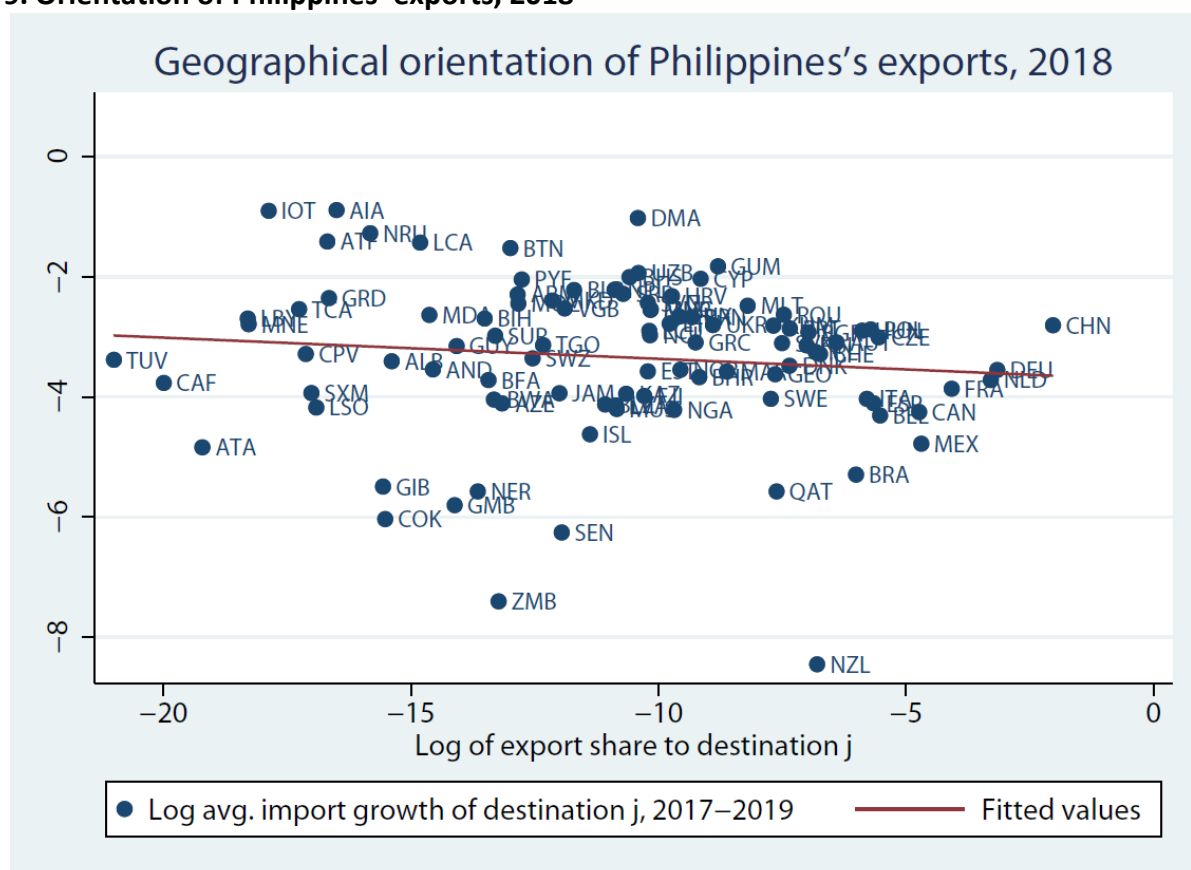


Source of basic data: WITS

In order to assess the extent to which a country's export orientation is favorable, this study explored whether the Philippines is exporting to partners and/or sectors that have experienced a faster import growth. This is presented in a scatterplot (Figure 9) with export shares on the horizontal axis and import growth rate at the vertical axis.

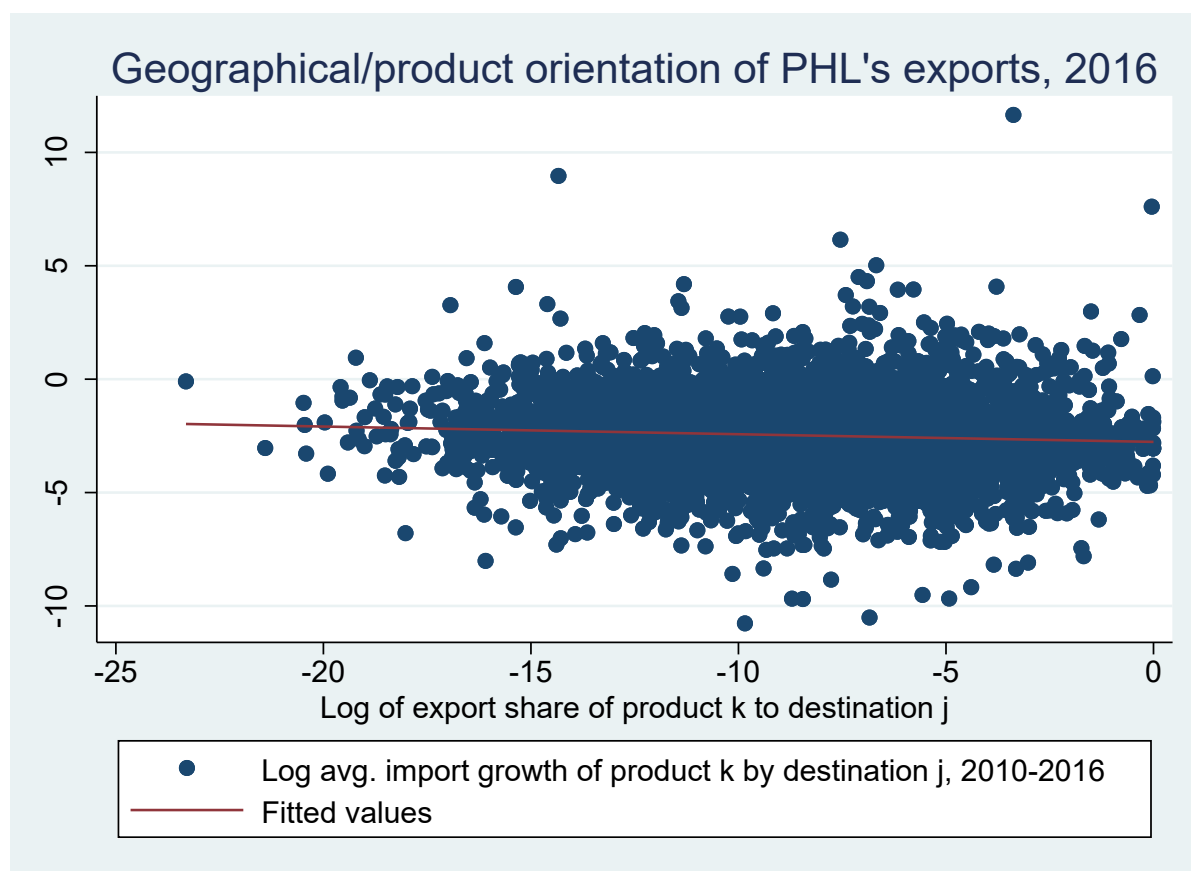
Figure 9 shows the geographical orientation of Philippine exports. The values in the vertical axis show the average growth rate of total imports over the last 3 years for all of the Philippines' export destination countries. The horizontal axis shows their share in total exports of the Philippines in 2018. The downward sloping regression line reflects larger destinations have a slower import growth which implies that orientation is not favourable.

Figure 9. Orientation of Philippines' exports, 2018



Source: Author's calculations using WITS data

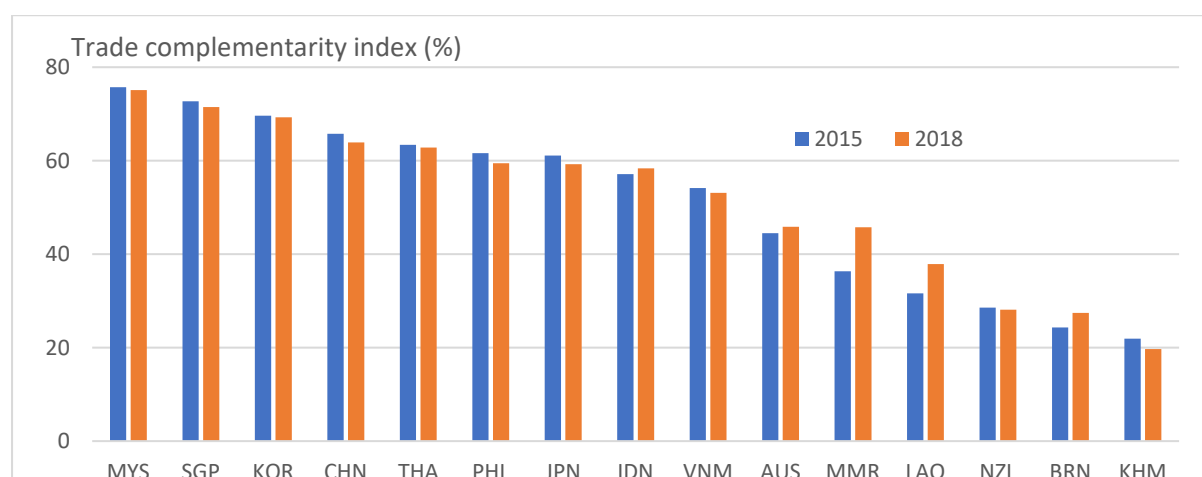
Figure 10. Orientation of Philippines' exports, 2016



Source: Author's calculations using WITS data

Figure 10 shows a similar scatter plot but was constructed combining sectoral and geographical dimension. Each point reflects the share of sector k to destination j in Philippine exports and the rate of growth of imports of product k to destination j. Like Figure 9, Figure 10 shows a negatively sloping regression line which indicates the Philippines is positioning on slow-growing products.

Figure 11. Trade complementarity among RCEP economies



Source of basic data: WITS

Meanwhile, Figure 11 shows that trade complementarity among the economies in RCEP remains high. However, for a number of ASEAN economies (Malaysia, Singapore, Thailand, Philippines, Vietnam and Cambodia), trade complementarity has been declining. Indonesia, Australia, Myanmar have increasing trade complementarity with the rest of the RCEP economies, which may indicate that these economies have the potential of benefiting more from RCEP agreement when it takes effect.

Table 1. Decomposition of exports growth of RCEP economies

Reporter	Intensive Margin	New-product margin	Product death margin
PHL	0.9640	0.1056	0.0697
MYS	0.9506	0.0732	0.0238
NZL	0.9862	0.0233	0.0095
VNM	0.9975	0.0037	0.0012
THA	0.9998	0.0018	0.0016
SGP	1.0010	0.0010	0.0020
KOR	1.0073	0.0010	0.0083
CHN	1.0001	0.0000	0.0001
JPN	1.0011	- 0.0018	- 0.0007
AUS	1.0003	- 0.0048	- 0.0044
IDN	1.0141	- 0.0285	- 0.0144

Source: Author's calculations

Following the decomposition presented by Equation 5, Table 1 shows export variation at the intensive margin (due to exporting more of existing products), the new-product margin (due to exporting more new products) and the “product death margin” (due to fewer failures). The results show that the Philippines leads the RCEP economies in terms of exporting at new

product margin but it also has a high rate of product deaths. This shows that the country is exploring new products to export which is a good indication of innovation of products. However, the country still needs support to sustain the exportation of these products to the Philippines' current markets.

The results of the gravity model are presented in Table 2. As expected, distance is negatively associated with exports while two countries being contiguous with each other is negatively associated with trade. Countries sharing a common language is positively associated with trade. The key variable of interest is trade border which takes on the value of 1 for countries that do not have a bilateral trade agreement while Border in RCEP is the absence of a trade agreement. Using exponential function to calculate the effect of the lack of trade agreement among RCEP economies, we find that trade could increase by as much as 52.4% on average if we remove the “border” among RCEP economies.

Table 2. Results of the gravity model

Trade	Coef.	Std. Err.	
Distance	- 1.79	0.04	***
Contiguous (1=yes)	- 1.09	0.07	***
Common language (1=yes)	0.19	0.10	*
Common colonizer (1=yes)	0.43	0.41	
Trade border (1=yes)	- 0.60	0.14	***
Border in RCEP (1=yes)	- 0.74	0.24	***
ASEAN+1 FTA		Yes	
Country		Yes	
Year		Yes	
R-squared		0.812	
No. of observations		5043	

Source: Author's calculations

Using the results of the gravity model with the Border in RCEP removed, the general equilibrium model for the impact of RCEP was generated (See Appendix 1 for the full results). Figures 12 and 13 shows the impact of RCEP on exports of the countries party to the agreement and non-RCEP countries, respectively. The full effect (allowing for the impact of changes on IMR, OMR and prices) on exports is highest for South Korea, Japan, Singapore and China. The full effect on exports for the Philippines is about 10.47 percent increase. Figure 13 reflects the impact on exports of non-RCEP economies. India will have the largest negative impact of about -1.25 percent. The USA will also be negatively affected with about -0.17 percent decrease.

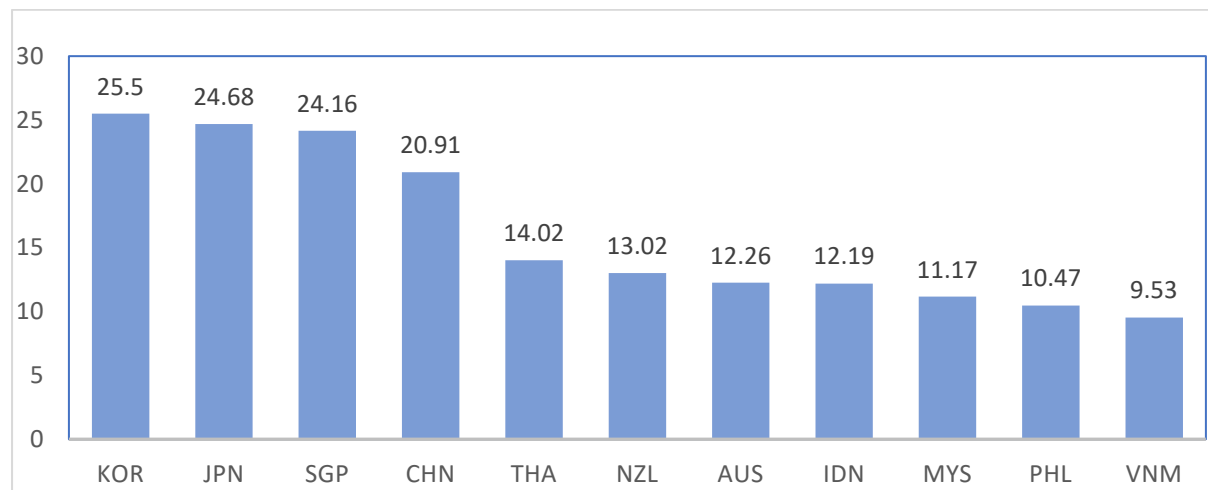
Figure 14 presents the impact to real GDP by the changes in IMR, OMR and prices. The Vietnam and the Philippines would be the top gainers of RCEP having the largest impact to real GDP registering a 2.14 and 2.04 percentage increase in real GDP.

Figure 17 and Figure 18 present two hypothetical scenarios. The first looks at the impact of India joining RCEP. According to the Joint Leaders' Statement on the Regional Comprehensive Economic Partnership (RCEP), the leaders would work together to keep the

agreement open and inclusive. In this regard, the Leader's recognize India's role in RCEP and reiterate that the RCEP remains open to India. As one of the 16 original participating countries, India's accession to the RCEP Agreement is welcomed.

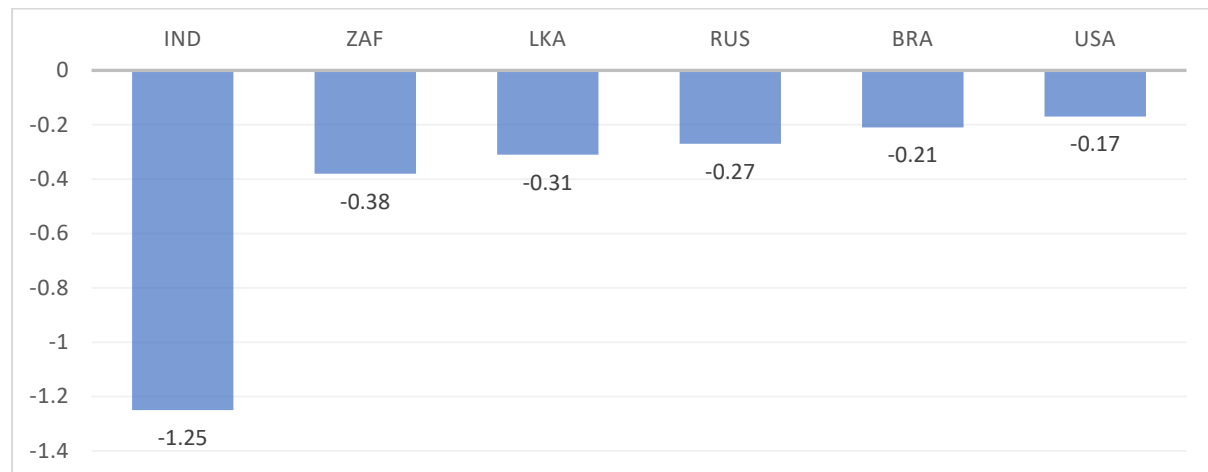
The second looks at the impact of a scenario in which a country fails to join RCEP while the rest of the countries continue to implement RCEP. This scenario is called the "status quo" because it maintains the status quo in terms of domestic regulations. It is important to note that economies will still be affected by RCEP even if they don't the agreement.

Figure 12. Change in export (%) for RCEP economies



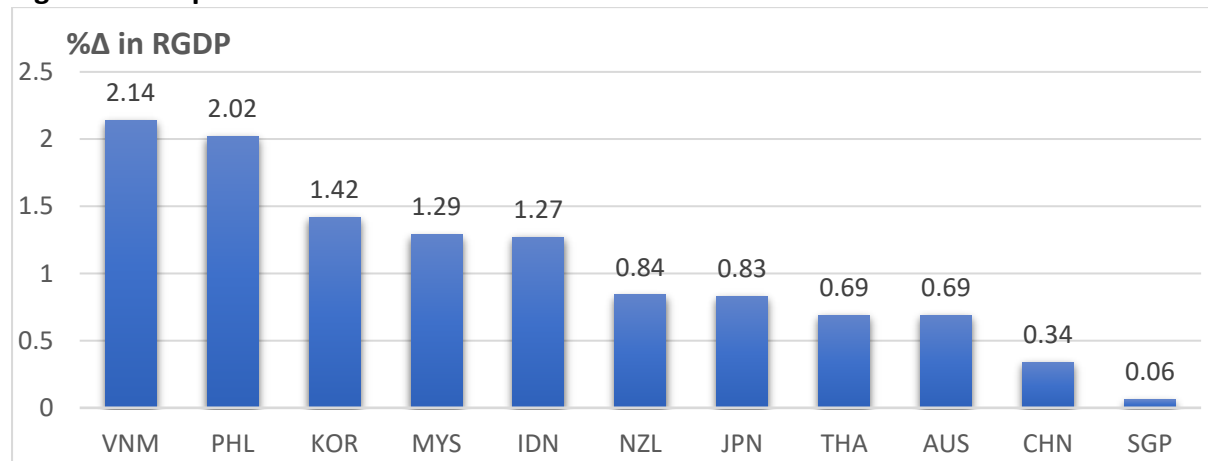
Source: Author's calculations

Figure 13. Changes in exports (%) for non-RCEP economies



Source: Author's calculations

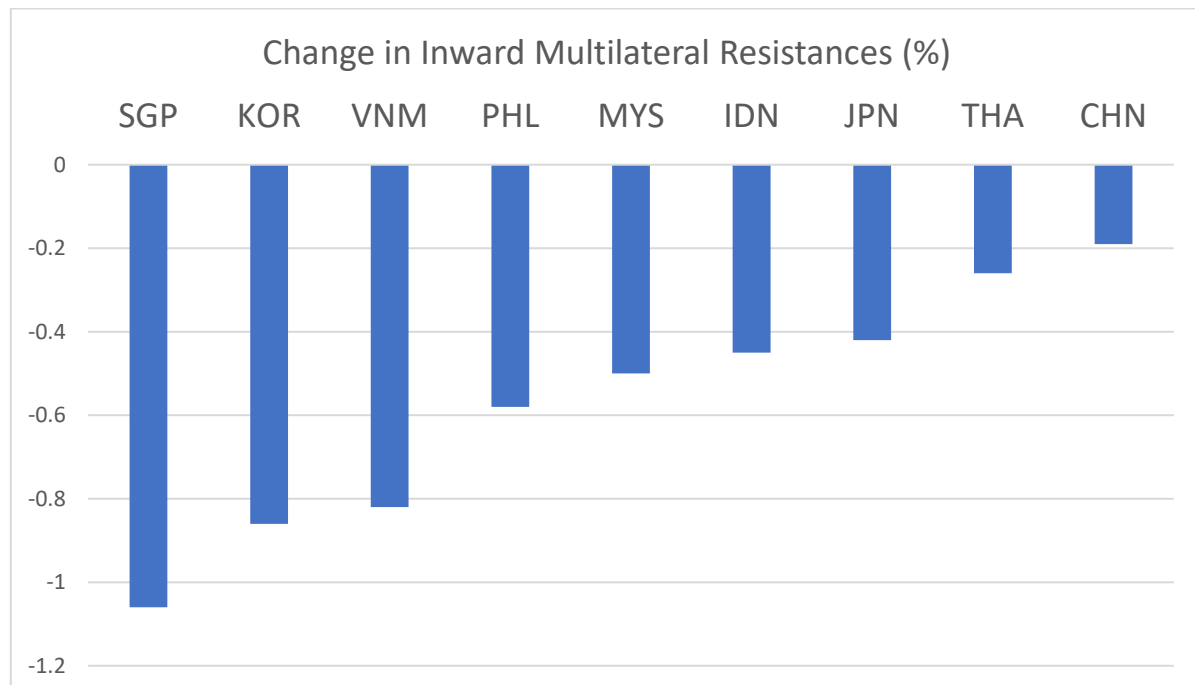
Figure 14. Impact to GDP for RCEP economies



Source: Author's calculations

To explain what is driving the results in the model, Figure 15 shows the change in the inward multilateral resistances due to the RCEP agreement. Singapore, South Korea, Vietnam and the Philippines have the largest impact in the reduction in inward multilateral resistances. The reduction in trade costs benefits the consumers in the country because cost of importation has declined. In a similar vein, the reduction in OMR is expected to benefit the producers of the country because of the reduction of exportation costs (See Appendix 1).

Figure 15. Change in inward multilateral resistances

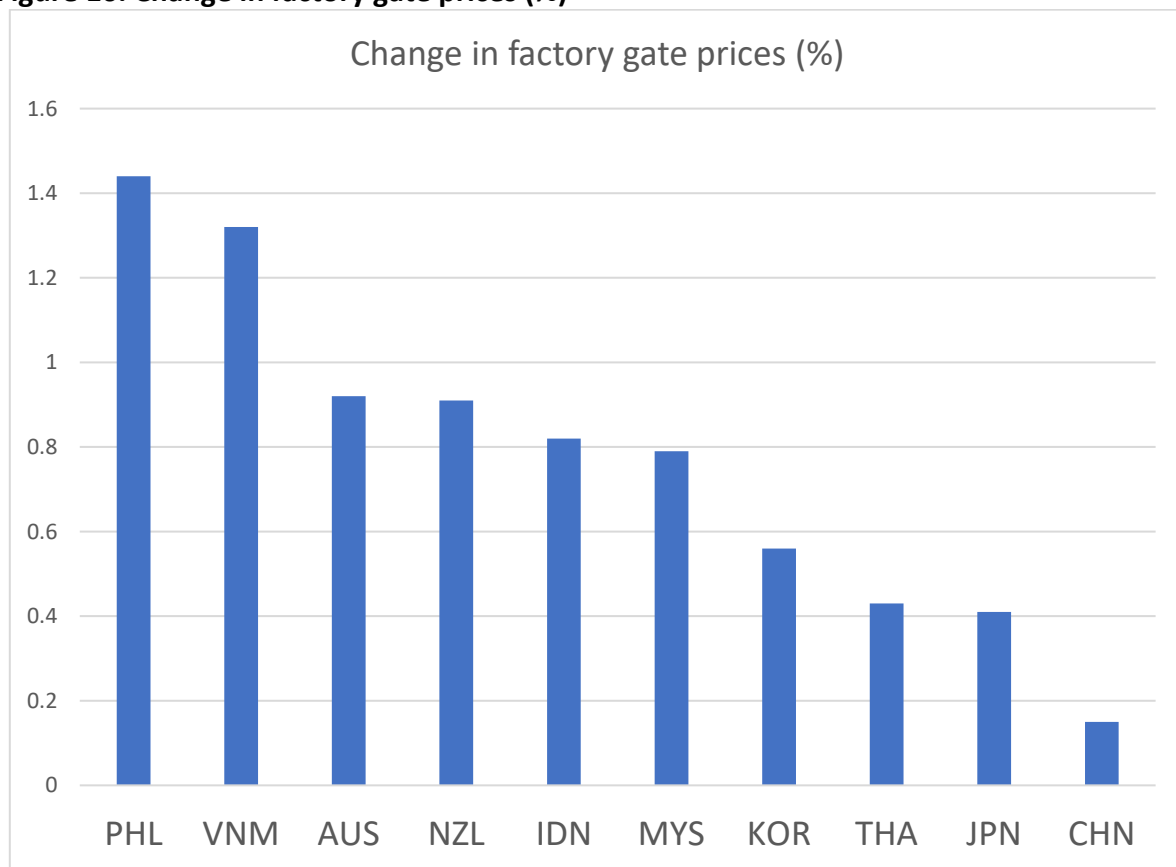


Source: Author's calculations

A full general equilibrium gravity model allows for the change in factory gate prices after the domestic firms have internalized the reduction in trade costs (Figure 16). This would allow domestic firms to raise their prices which in turn would reflect as higher income. Philippines and Vietnam register the largest increase in factory gate prices that would have a substantial

impact in the size of the economy. The results show (Appendix 1) that Singapore's factory gate prices would decline by 1 percent but this is offset by the more substantial decline in trade costs as captured by the IMR which declined by 1.06.

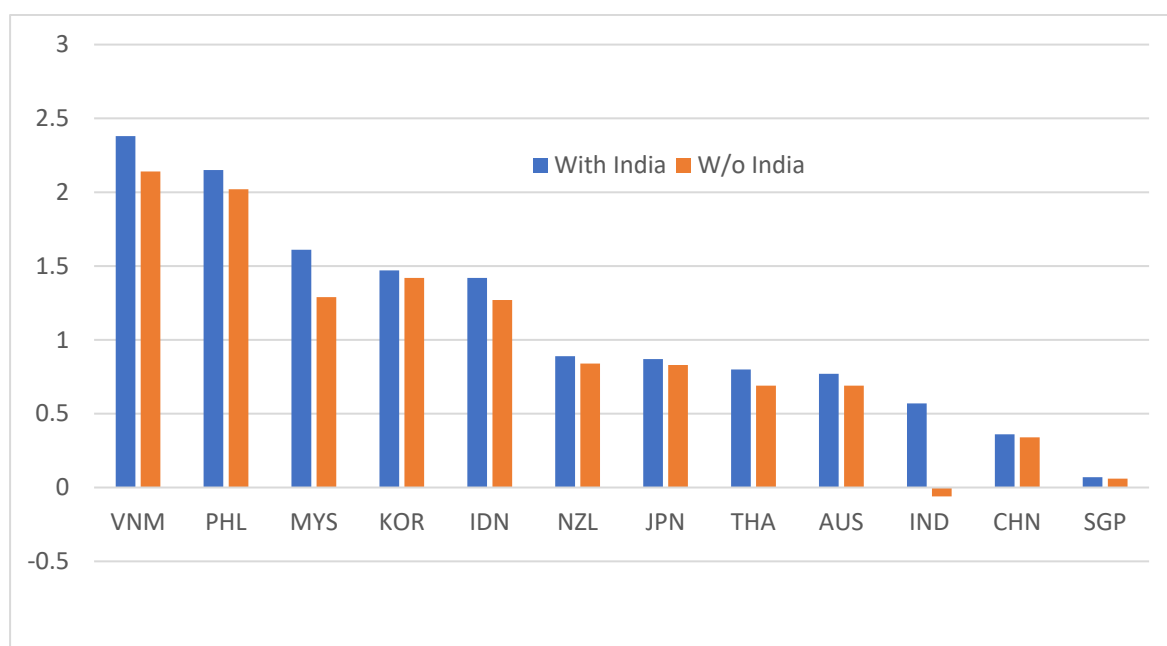
Figure 16. Change in factory gate prices (%)



Source: Author's calculations

Investigating the hypothetical scenario of India joining the agreement, it shows that Philippines and Vietnam would remain as the top gainers in the agreement, with the impact to GDP increasing further. Malaysia is seen to benefit the most with India joining the agreement, surpassing South Korea in the rankings. Figure 17 also shows that the impact to India seems marginal with only about 0.5 percent increase to real GDP.

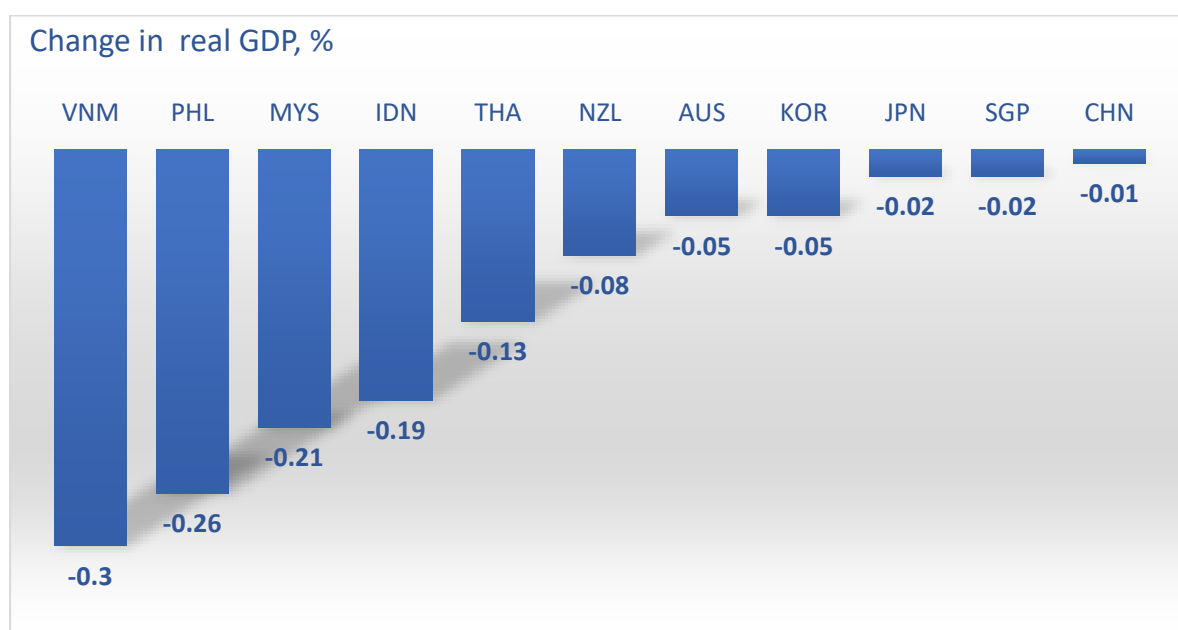
Figure 17. Impact to real GDP of RCEP should India join the agreement



Source: Author's calculations

Another hypothetical scenario that this study investigated is the impact of an economy opting out of RCEP while the rest of the RCEP economies implement the agreement. Figure 18 shows the results of this scenario. The ASEAN5 would have the largest decline in GDP should this scenario happen. Vietnam and the Philippines would have the largest decline in real GDP of about 0.3 and 0.26 percent, respectively.

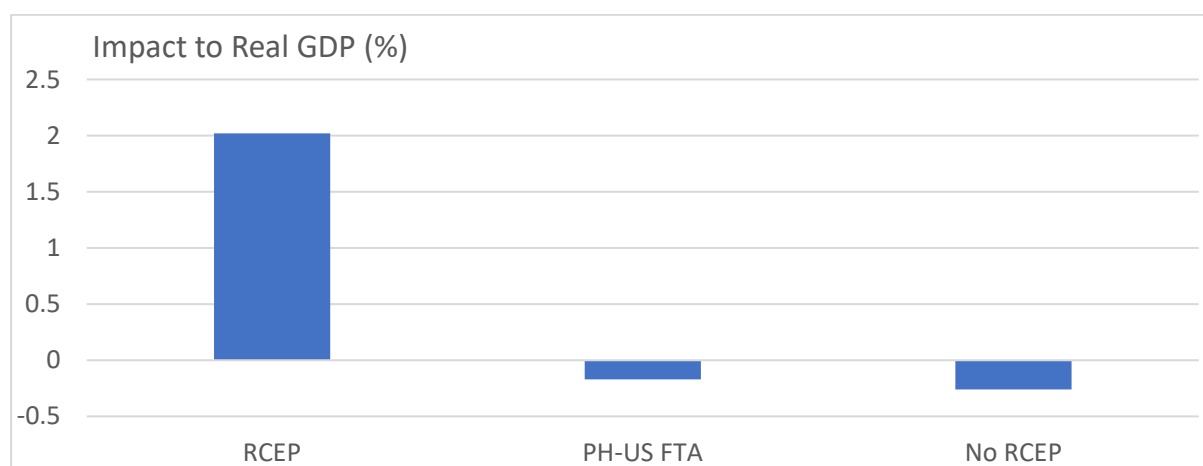
Figure 18. Impact to real GDP of RCEP should the economy choose not to join the RCEP agreement



Source: Author's calculations

Finally, the general equilibrium gravity model was used to investigate the impact of pursuing a bilateral FTA with the United States as a means of compensating for foregoing participation in RCEP. The results show that while the presence of a bilateral FTA with the US can reduce the negative impact of not participating in RCEP, it will still result to a slight decline in Real GDP (Figure 19).

Figure 19. Impact to Real GDP of the presence of bilateral FTA with the US under the No RCEP Scenario



Source: Author's calculations

5. Conclusion and Recommendations

Indicators of trade performance show that there is room for improvement in the Philippines' trade openness, sectoral orientation and complementarity. Philippine trade openness has not followed a growth path similar to its neighbors in the region (i.e. Thailand and Vietnam). Patterns of concentration can be seen in the country's export as bulk of which is machinery and electronic equipment. The destination is also concentrated among the traditional partners in the region and the USA.

Using a general equilibrium gravity model, this study finds that exports will increase for the East Asian partners of ASEAN namely South Korea, Japan and China, as well as Singapore. Due to the decline in inward multilateral resistances and increase in factory gate prices, the Philippines and Vietnam have the highest improvements in real GDP.

The gravity model was also used to investigate the results of two different scenarios for the Philippines: India joining RCEP and the impact of maintaining the status quo. It was also shown that forming bilateral FTA with a key trading partner will not compensate for missing out on RCEP. It is important, however, to mention the limitations of the gravity model. The gravity model only incorporates goods trade and the flow of services has not been incorporated. The gravity model is also looking at the aggregate trade flow (exports) instead of a sectoral analysis which may result in some overstated effects.

Based on these results, this study recommends the following:

1. Hasten the conversations and debate on RCEP. Not implementing the agreement will have a cost to the country. Baseline results of the general equilibrium gravity model show that countries outside of the agreement would be negatively affected when RCEP comes into force.
2. The success of any trade agreement depends on utilization. The reduction in trade costs need to be internalized by the Philippine businesses which, can be done by increasing the awareness and utilization of Philippine trade agreements.
3. Innovation is important. Support for private sector innovation and exploration of new products and new markets should be optimized. Sectoral and geographical orientation of Philippine trade shows there is a concentration of Philippine exports and there is a need to improve the variation of Philippine exports.

6. References

- Ahn, C. Y. (2018). Is There a Future for Economic Integration in East and Southeast Asia? East-West Center. <http://www.jstor.org/stable/resrep24988>
- Anderson, J. (2011). "The Gravity Model," *Annual Review of Economics*, Annual Reviews, vol. 3(1), pages 133-160, 09.
- Association of Southeast Asian Nations (ASEAN) (2020). Joint Leaders' Statement on the Regional Comprehensive Economic Partnership (RCEP). Association of Southeast Asian Nations. <https://rcepsec.org/wp-content/uploads/2020/11/RCEP-Summit-4-Joint-Leaders-Statement-Min-Dec-on-India-2.pdf>
- Bacchetta, M., Beverelli, C., Cadot, O., Fugazza, M., Grether, J. M., Helble, M., ... & Piermartini, R. (2012). A practical guide to trade policy analysis. Geneva, CH: World Trade Organization.
- Banga, R., Gallagher, K., & Sharma, P. (2021). RCEP: Goods Market Access Implications for ASEAN (Working Paper No. 045; GEGI Working Papers). Global Economic Governance Initiative. https://www.bu.edu/gdp/files/2021/03/GEGI_WP_045_FIN.pdf
- Cororaton, C. 2016. Potential effects of the Regional Comprehensive Economic Partnership on the Philippine economy. *Discussion Paper Series, Philippine Institute for Development Studies (PIDS)*. <https://dirp4.pids.gov.ph/websitcms/CDN/PUBLICATIONS/pidsdps1630.pdf> (accessed November 2018)
- Cororaton, C., Inocencio, A., & Tiongco, M. (2021). Potential Benefits of RCEP on the Philippines: Accelerating Recovery Through Trade and Other Economic Opportunities (Policy Brief Volume XII, No. 6; Studies on Current Economic and Business Issues). Angelo King Institute for Economic and Business Studies (DLSU-AKI). https://www.dlsu-aki.com/uploads/1/0/2/2/102266760/aki_policy_brief_volume_xii_no_6_february_2021.pdf
- Deloitte. (2021, January 8). The Regional Comprehensive Economic Partnership (RCEP): 15 Asia-Pacific nations strike one of the world's largest trade deals. <https://www2.deloitte.com/content/dam/Deloitte/sg/Documents/tax/global-trade-advisory-newsflash-rcep-country-updates.pdf>
- Gutierrez, E., & Macadato, M. (2021). Ratifying the Regional Comprehensive Economic Partnership (RCEP): What's in Store for the Philippines (Policy Brief No. 2021-04; CPBRD Policy Briefs). Congressional Policy and Budget Research Department. https://cpbrd.congress.gov.ph/images/PDF%20Attachments/CPBRD%20Policy%20Brief/PB2021-04_Ratifying_the_Regional_comprehensive_Economic_Partnership.pdf
- Jaipragas, B. (2020). The RCEP has been signed, at last – but resistance to China could yet prove a hurdle before it takes effect. *This Week in Asia/ Economics*. South China Morning Post. <https://www.scmp.com/week-asia/economics/article/3110082/rcep-has-been-signed-last-resistance-china-could-yet-prove>

- Jaehyon, L. (2021). Diplomatic and Security Implications of the Regional Comprehensive Economic Partnership (RCEP). Asan Institute for Policy Studies. <http://www.jstor.org/stable/resrep29687>
- Ji, X., Rana, P. B., Chia, W.-M., & Li, C. T. (2018). TRADE POLICY OPTIONS FOR ASEAN COUNTRIES AND THEIR REGIONAL DIALOGUE PARTNERS: “PREFERENCE ORDERING” USING CGE ANALYSIS. S. Rajaratnam School of International Studies. <http://www.jstor.org/stable/resrep19930>
- Kang, J. W., Crivelli, P., & Tayag, M. C. (2020). Regional comprehensive economic partnership: Overview and economic impact (Brunei Darussalam, Cambodia, China, People’s Republic of, Indonesia, Japan, Korea, Republic of, Lao People’s Democratic Republic, Malaysia, Myanmar, Philippines, Singapore, Thailand, Viet Nam). Asian Development Bank. <https://doi.org/10.22617/BRF200422-2>
- Kumagai, S., & Hayakawa, K. (2021). Economic Impacts of the Regional Comprehensive Economic Partnership: Analysis Using IDE-GSM (Policy Brief No. 147; IDE Policy Brief). Institute of Developing Economies. <https://www.ide.go.jp/Japanese/Publish/Reports/AjikenPolicyBrief/147.html>
- Lee, C., & Lee, S.-H. (2017). Table of Contents. In THE TRUMP ERA AND THE TRADE ARCHITECTURE IN THE ASIA PACIFIC (pp. 5–5). S. Rajaratnam School of International Studies. <http://www.jstor.org/stable/resrep05943.2>
- Malvenda, M. (2019). The RCEP: Impacting ASEAN’s Supply Chains and Business Environment. <https://www.aseanbriefing.com/news/rcep-impacting-aseans-supply-chains-business-environment/>
- Minghui, S. (2018). Evaluation of regional economic integration in East Asia. In S. ARMSTRONG & T. WESTLAND (Eds.), Asian Economic Integration in an Era of Global Uncertainty (pp. 259–292). ANU Press. <http://www.jstor.org/stable/j.ctt20krz01.17>
- Michael, M. (1996), “Trade preferential agreements in Latin America: an ex ante assessment”, Policy Research Working Paper 1583, Washington D.C.: The World Bank
- Mohamad, J., & Cheng, C. (2020). The Regional Comprehensive Economic Partnership (RCEP): What this means for ASEAN and Malaysia. Institute of Strategic and International Studies. <http://www.jstor.org/stable/resrep29704>
- Pangestu, M., & Armstrong, S. (2018). Asian economic integration: The state of play. In S. ARMSTRONG & T. WESTLAND (Eds.), Asian Economic Integration in an Era of Global Uncertainty (pp. 15–62). ANU Press. <http://www.jstor.org/stable/j.ctt20krz01.9>
- Petri and Plummer (2018) *The case for RCEP as Asia’s next trade agreement*. Brookings. <https://www.brookings.edu/blog/order-from-chaos/2018/11/06/the-case-for-rcep-as-asias-next-trade-agreement/>

- Petri, P.A., & Plummer, M. (2020, November 16). RCEP: A new trade agreement that will shape global economics and politics. *Brookings*. <https://www.brookings.edu/blog/order-from-chaos/2020/11/16/rcep-a-new-trade-agreement-that-will-shape-global-economics-and-politics/>.
- Propper, E. (2021). A New Chinese Cash Flow: Enhancing Partnerships prior to the Biden Era? Institute for National Security Studies. <http://www.jstor.org/stable/resrep27784>
- Propper, E., & Catarivas, D. (2020). New Trade Agreement in Asia: China Is in, the United States is Out. Institute for National Security Studies. <http://www.jstor.org/stable/resrep27778>
- Scollay, R. 10 Oct 2013. APEC's regional economic integration agenda and the evolution of economic integration in the Asia-Pacific region. KIEP Research Paper Series. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2319745 (accessed November 2018)
- Thangavelu, S., Urata, S., & Narjoko, D. (2021). Impacts of the RCEP on ASEAN and ASEAN Least Developed Countries in the Post-pandemic Recovery (Policy Brief No. 2021–01). Economic Research Institute for ASEAN and East Asia. <http://www.eria.org/publications/impacts-of-the-rcep-on-asean-and-asean-least-developed-countries-in-the-post-pandemic-recovery/>
- Ward, R. (2020, November 25). RCEP trade deal: a geopolitical win for China. International Institute for Strategic Studies. <https://www.iiss.org/blogs/analysis/2020/11/rcep-trade-deal>.
- Wolf, A., Wang, J., & Tang, Y. (2020, November 23). Who will benefit the most from the RCEP? *J.P. Morgan*. <https://privatebank.jpmorgan.com/gl/en/insights/investing/who-will-benefit-the-most-from-RCEP>.
- Yotov, Y. V., Piermartini, R., Monteiro, J. A., & Larch, M. (2016). *An advanced guide to trade policy analysis: The structural gravity model*. Geneva: World Trade Organization.

Appendix 1. General Equilibrium Results (Scenario 1)

country	tot exp full ch	p full ch	imr full ch	rGDP full ch	imr full	omr full ch
KOR	25.82	0.50	-0.82	1.32	0.86	-0.58
JPN	24.65	0.37	-0.39	0.76	0.54	-0.43
SGP	23.88	-1.00	-1.06	0.06	2.23	1.18
CHN	20.43	0.19	-0.19	0.37	0.39	-0.22
THA	13.17	0.44	-0.32	0.76	0.42	-0.52
NZL	13.01	0.87	0.10	0.76	0.13	-1.00
AUS	12.28	0.90	0.25	0.65	0.11	-1.04
IDN	10.99	0.79	-0.48	1.26	0.14	-0.91
MYS	10.21	0.80	-0.56	1.35	0.19	-0.92
PHL	9.14	1.32	-0.63	1.95	0.22	-1.52
VNM	8.58	1.17	-0.73	1.90	0.17	-1.35
BEL	-0.03	-0.00	-0.00	-0.00	1.78	0.00
DNK	-0.03	-0.00	-0.00	-0.00	0.81	0.00
GBR	-0.03	-0.00	-0.00	-0.00	1.08	0.00
HUN	-0.03	-0.00	-0.00	-0.00	0.75	0.00
NLD	-0.03	-0.00	-0.00	-0.00	1.94	0.00
SVN	-0.03	-0.00	-0.00	-0.00	0.80	0.00
AUT	-0.04	-0.00	-0.00	-0.00	0.79	0.00
CYP	-0.04	-0.01	-0.01	-0.00	0.53	0.01
CHE	-0.04	-0.00	-0.00	-0.00	1.13	0.00
POL	-0.04	-0.00	-0.00	-0.00	0.62	0.00
SWE	-0.04	-0.00	0.00	-0.00	0.52	0.01
BGR	-0.04	-0.01	0.00	-0.01	0.37	0.01
FRA	-0.05	-0.00	-0.00	-0.00	0.67	0.00
ITA	-0.05	-0.00	-0.00	-0.00	0.62	0.00
PRT	-0.05	-0.00	-0.00	-0.00	0.41	0.01
NOR	-0.05	-0.01	0.00	-0.01	0.40	0.01
ESP	-0.06	-0.00	-0.00	-0.00	0.44	0.00
GRC	-0.06	-0.01	-0.00	-0.00	0.51	0.01
ZZZ	-0.06	-0.00	0.00	-0.00	1.00	0.00
FIN	-0.09	-0.01	-0.00	-0.01	0.44	0.01
CAN	-0.10	-0.02	-0.01	-0.01	0.22	0.02
TUR	-0.10	-0.01	-0.00	-0.01	0.34	0.01
CHL	-0.14	0.00	0.01	-0.01	0.13	-0.00
MEX	-0.15	-0.01	-0.01	-0.00	0.27	0.01
USA	-0.22	-0.01	-0.01	-0.00	0.38	0.02
BRA	-0.24	0.00	0.01	-0.00	0.16	-0.00
RUS	-0.28	-0.02	0.01	-0.02	0.14	0.02
LKA	-0.34	-0.02	0.03	-0.05	0.24	0.02
ZAF	-0.39	0.00	0.01	-0.01	0.16	-0.00
IND	-1.16	-0.02	0.04	-0.06	0.20	0.03