



**Asia-Pacific
Economic Cooperation**

Advancing Free Trade
for Asia-Pacific **Prosperity**

Taking Forward the Lima Declaration on the Free Trade Area of the Asia-Pacific (FTAAP) – Study on Tariffs

APEC Policy Support Unit

November 2019

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Produced for:

Committee on Trade and Investment

Asia-Pacific Economic Cooperation

APEC#219-SE-01.12



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1. TABLE OF CONTENTS

1	UPDATE OF THE TARIFF ANALYSIS REPORTED IN THE COLLECTIVE STRATEGIC STUDY ON FTAAP.....	5
1.1	TARIFF LANDSCAPE IN THE APEC REGION	5
1.2	OPPORTUNITIES FOR FURTHER TARIFF LIBERALIZATION.....	9
1.3	OBSERVATIONS	13
2	POTENTIAL IMPACT FROM LOWERING TARIFFS THROUGH FTAAP PATHWAYS	14
2.1	INTRODUCTION	14
2.2	RATIONALE.....	14
2.3	MODELLING CONSTRAINTS	15
2.4	RESULTS	16
2.5	OBSERVATIONS	40
3	MARKET ACCESS COMMITMENTS WITHIN THE CPTPP	42
3.1	INTRODUCTION	42
3.2	RATIONALE.....	42
3.3	MARKET ACCESS COMMITMENTS.....	42
3.4	RELATIONSHIP BETWEEN LIBERALIZATION PERIODS AND BASE TARIFFS.....	56
3.5	OBSERVATIONS	57
4	FINAL REMARKS	58
5	REFERENCES	59
6	ANNEX.....	62

LIST OF FIGURES

Figure 1.1: Percentage of tariff lines with applied tariffs over 15%, by sector	6
Figure 1.2: Cumulative Number of RTA/FTAs Signed and Enforced by APEC Economies ...	9
Figure 1.3: APEC Economies' Share of Trade with RTA/FTA Partners (Exports).....	10
Figure 1.4: APEC Economies' Share of Trade with RTA/FTA Partners (Imports).....	10
Figure 1.5: Unemployment and trade openness for OECD economies	11
Figure 1.6: Share of intermediate and capital products in total trade (1995-2011)	11
Figure 1.7: Comparing the incidence of tariffs on the gross value and the domestic value added of exports	12
Figure 1.8: ITA participation index in GVCs as a percentage of gross exports	12
Figure 2.1: Impact of FTAAP on welfare of the APEC region	17
Figure 2.2: Impact of depth of FTAAP on the income of APEC economies (in USD billions)	19
Figure 2.3: Impact of depth of FTAAP on the income of APEC economies (as a proportion of GDP)	19
Figure 2.4: Impact of FTAAP on proportion of TOT and Capital Accumulation of APEC economies	20
Figure 2.5: Impact of FTAAP on exports of APEC economies	21
Figure 2.6: Impact of FTAAP on exports of the world.....	22
Figure 2.7: Impact of TPP on production volume of TPP Participants	24
Figure 2.8: Impact of TPP/CPTPP on import of APEC and TPP/CPTPP members	26
Figure 2.9: Impact of TPP on investment of the APEC region	27
Figure 2.10: Impact of TPP on income of APEC economies	28
Figure 2.11: Impact of TPP on welfare of APEC economies	29
Figure 2.12: Impact of TPP on inward and outward FDI stocks for APEC economies	30
Figure 2.13: Average labor income growth of ASEAN economies participating in TPP/CPTPP	31
Figure 2.14: Impact of TPP on income of ASEAN, Pacific Alliance and the EAEU	32
Figure 2.15: Impact of TPP on welfare of ASEAN, Pacific Alliance and the EAEU	33
Figure 2.16: Impact of TPP on inward and outward FDI stocks for ASEAN, Pacific Alliance and the EAEU	34
Figure 2.17: Impact of RCEP on income of APEC economies	36
Figure 2.18: Impact of depth of RCEP on income of APEC economies	37
Figure 2.19: Dynamic impact of RCEP on GDP growth.....	37
Figure 2.20: Impact of RCEP on the welfare attributed to terms of trade and Capital accumulation	38

Figure 2.21: Impact of RCEP on exports of the APEC region	39
Figure 2.22: Impact of RCEP on ASEAN GDP	39
Figure 3.1: Number of Tariff Lines for Agriculture and Non-Agriculture Products.....	43
Figure 3.2: Average base tariffs (%) for CPTPP member economies	44
Figure 3.3: Number of staging categories for all products	44
Figure 3.4: Number of staging categories for agriculture and non-agriculture products.....	45
Figure 3.5: Share of Duty-Free Tariff Lines by Each Year of CPTPP Agreement	46
Figure 3.6: Share of duty-free tariff lines at CPTPP date of entry into force	46
Figure 3.7: Share of Tariff Lines Fully Liberalized after 10 or More Years	52
Figure 3.8: Relationship between Average Base Tariff and Years to Full Liberalization.....	56
Figure 3.9: Relationship between Average Base Tariffs and Years to Full Liberalization	57

LIST OF TABLES

Table 1.1: Most favoured nation (MFN) rate trends in the APEC region, 2008-2017	5
Table 1.2: Average applied most-favoured nation (MFN) rates in APEC region, by product category.....	7
Table 1.3: Average percentage of duty-free tariff lines in the APEC region, by product category	8
Table 2.1: Impact of FTAAP pathways on APEC (in USD billion).....	17
Table 2.2: Impact of TPP & CPTPP on income of the APEC region (in USD billion)	24
Table 2.3: Impact of TPP & CPTPP on welfare of the APEC region (in USD billion)	25
Table 2.4: Impact of TPP & CPTPP on welfare of the TPP/CPTPP members	25
Table 2.5: Impact of TPP on income growth for selected APEC economies (% change).....	31
Table 2.6: Impact of RCEP on the APEC region's income (in USD billion).....	35
Table 3.1: HS Chapters with Full Immediate Liberalization under CPTPP vs. HS Chapters Duty-Free under WTO Bound Tariff Schedules.....	47
Table 3.2: List of HS Chapters with Full Immediate Liberalization Across All CPTPP Parties	48
Table 3.3: Percentage of Tariff Lines with Base Tariff = 0% vis-a-vis Percentage of Tariff Lines with Duty-Free Access on CPTPP's Date of Entry into Force	49
Table 3.4: Top 5 Chapters with Most Duty-free Tariff Lines at Date of Entry (% of Total Tariff Lines)	51
Table 3.5: Number of HS Chapters Containing Tariff Lines Fully Liberalized After 10 or More Years	53
Table 3.6: Top 5 HS Chapters with Most Tariff Lines Fully Liberalized Only After 10 or More Years (as % of share within each chapter).....	54
Table 3.7: Number of Tariff Lines Subject to Partial Liberalization.....	55
Table 3.8: Tariff Exclusions under CPTPP.....	55

EXECUTIVE SUMMARY

In 2016, Leaders endorsed the Lima Declaration on the Free Trade Area of the Asia Pacific (FTAAP), instructing officials to work on measures that affected both trade and investment towards achieving the Bogor Goals, and to advance the vision for the eventual realization of the FTAAP. As part of this effort, the APEC Committee on Trade and Investment (CTI) endorsed in 2017 the work program on tariffs spearheaded by Hong Kong, China and supported by the APEC Policy Support Unit (PSU), which included the preparation of a study on tariffs with the intention of: 1) updating the tariff analysis in the Collective Strategic Study on Issues Related to the Realization of the FTAAP; 2) conducting a literature review on previous studies analyzing the potential impact of lowering tariffs through an FTAAP; and 3) examining the tariff liberalization commitments at pathways to the FTAAP.

COMPONENT 1: UPDATE OF THE TARIFF ANALYSIS REPORTED IN THE COLLECTIVE STRATEGIC STUDY ON FTAAP

Average MFN tariffs in the APEC region have followed a downward trend, but continue to remain higher for agricultural products (11.4% in 2017) than non-agricultural ones (5.3% in 2017). The reduction in tariffs have slowed down in recent years, but average MFN tariffs for most product categories have continued falling every year.

In addition, the proportion of duty-free tariff lines has increased for most agricultural product categories, with large increases identified in cotton. Within the non-agricultural sector, the highest proportions of duty-free tariff lines were found in petroleum products, non-electrical and electrical machinery.

Among the products with the highest MFN average tariffs in the agriculture sector, they are found in beverages and tobacco, dairy products, and cereals and preparations. In non-agricultural sectors, labor-intensive products such as clothing and textiles, and those that are simultaneously intensive in capital and labor, such as transport equipment, are facing the highest average tariffs.

Tariffs could affect global value chains (GVCs). Almost 75% of the international trade is composed of both intermediate and capital goods and this proportion has been increasing over the years. In addition to increasing product costs, maintaining or increasing tariffs leads to negative protection of downstream industries, thereby further dampening the entire global value chain.

Despite the progress made, there is still room for APEC economies to participate more actively to reduce trade barriers. Some possible ways forward include participating actively through bilateral/regional free trade agreements (RTA/FTAs), as APEC economies' share of trade with RTA/FTA partners accounted for less than 50% of their total trade. Moreover, APEC economies could participate in multilateral or plurilateral agreements such as the Information Technology Agreement (ITA).

COMPONENT 2: POTENTIAL IMPACT FROM LOWERING TARIFFS THROUGH FTAAP PATHWAYS

A review of 17 studies using computable general equilibrium (CGE) models to examine the impact of reducing or eliminating tariffs through potential pathways of achieving FTAAP was undertaken in order to analyze the estimated impact for the APEC region and individual economies on GDP/production levels, welfare, trade flows and investment. These potential pathways included the Trans-Pacific Partnership (TPP), Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and the Regional Comprehensive Economic Partnership (RCEP).

If an FTAAP is implemented, previous studies indicate that income and welfare is expected to increase for the APEC region, its economies and relevant sub-regions. Most of the benefits captured by the region would be directed towards its developing economies and driven primarily by a capital accumulation effect. Many economies would face worsening terms of trade, as they may be losing the advantage of already having a preferential market access due to bilateral/regional RTA/FTAs already in place. However, this negative effect would be offset by a positive capital accumulation effect.

The TPP and the CPTPP pathway predicts income gains for the APEC region to be in the range of USD 97 billion and USD 438 billion. Similarly, the region is expected to benefit from a net FDI inflow as a result of factors such as increased GDP and reduced investment barriers within economies. In aggregate terms, a large proportion of gains would be channeled towards APEC developed economies, but gains for developing economies would be significant in relative terms. Whilst those APEC members being part of TPP/CPTPP would benefit from these pathways, those excluded from the TPP/CPTPP would lose out.

In the case of the RCEP pathway, gains received by APEC economies are largely positive for almost all of the region's economies with most benefits directed towards developing economies. Income gains under the RCEP would be in the range of USD 204 billion and USD 750 billion, larger than those under the TPP/CPTPP for the APEC region. At the individual level, similar to the case of TPP/CPTPP, almost all non-RCEP economies are predicted to lose out as opposed to those APEC economies within RCEP.

In general, under any pathway, while the benefits will be possible at the regional level, the impact for individual economies and sectors will differ depending on several factors. For example: membership in those pathways, economic structure, availability of factors of production, market size, development levels and network of RTA/FTA partners.

COMPONENT 3: MARKET ACCESS COMMITMENTS WITHIN THE CPTPP

The market access commitments agreed in CPTPP reflects a very complex negotiation process as a result of different development levels, production structures, strategic interests and sensitive matters of participating economies. The presence of high base tariffs in some sectors, as well as the number of staging categories for participating economies to phase out their respective tariffs, shows the willingness to look for creative solutions to strike a balance among participating economies in reaching an agreement.

The market access commitments agreed at CPTPP can be categorized into four approaches: 1) products are duty-free immediately after the CPTPP is put in force by a signatory party; 2)

products are subject to longer phase-out periods up to 21 years; 3) products subject to partial liberalization only; and 4) products excluded from the tariff liberalization process.

Substantial progress has been made in lifting tariffs on goods by all parties. Upon entry into force of the CPTPP, 86.1% of the total tariff lines from the 11 CPTPP parties are immediately duty-free, which shows a substantial effort to liberalize across all CPTPP parties, noting that 54.1% of all tariff lines had a base tariff equal to 0%. Whilst liberalization efforts under CPTPP have been uneven across sectors, seven CPTPP members are offering immediate duty-free entry in more than half of the sectors (i.e. a sector is offered duty-free when all tariff lines belonging to a specific Harmonized System (HS) chapter are offered duty-free). 10 HS chapters are offered duty-free by all members, with most of the products related to natural resources (e.g. oil, minerals), intermediate products (e.g. chemicals, steel) and capital goods (e.g. machinery, equipment).

Longer liberalization periods apply to sensitive products. 7 out of 11 CPTPP parties have tariff lines that will be fully liberalized only after 10 or more years. Such slow-paced liberalization is mostly prevalent in labor-intensive manufactures (e.g. textiles and apparel, footwear), agricultural products and manufactures important for rural communities (e.g. sugars, milling products, cotton, leather), products with negative externalities (e.g. tobacco, alcoholic beverages and arms) and strategic industries for some CPTPP parties (e.g. vehicles).

Overall, the majority of the products will be fully liberalized by year 11 for most members, even though a small number of tariff lines are excluded from the agreement or will eliminate tariffs in longer phase out periods. However, for some CPTPP parties, tariff liberalization is taking a slower pace than in other FTAs in force, as more than 10% of their tariff lines are liberalized in 10 years or beyond.

9 out of 11 CPTPP members adopt partial tariff liberalization measures, targeting mostly agriculture products including live animals, meat, dairy produce, cereals, cocoa, sugars, vegetables, fruits and nuts. These partial liberalization measures include keeping the non ad-valorem tariff component, reducing partially the ad-valorem tariff rate, maintaining tariff rate quotas and a price band system.

In addition, three CPTPP parties have excluded products from the tariff liberalization process, by keeping MFN rates to specific or all CPTPP parties. Such a scheme applies to a very limited number of tariff lines, affecting the most sensitive products from each member's trade perspective, such as sugar, cheese, milk, poultry, beans, wheat, rice, flour, and leather and articles thereof.

This study has found a positive relationship between base tariffs and the number of years to achieve full liberalization. On average, an increase of the base tariff by 10 percentage points (e.g. tariff increasing from 10% to 20%) will lead to an additional 1.8 years to full liberalization. Agricultural products tend to be more sensitive than non-agricultural products. An additional 10 percentage points in the base tariff will increase the time to liberalize by 2.06 years for agriculture products and 1.64 years for non-agriculture products.

Nonetheless, it is important to point out that the outcome obtained at the end of the CPTPP negotiations involved a series of commitments on market access for both goods and services, as well as obligations related to disciplines and rules. The final agreement was a result of a

balanced package, carefully negotiated through a process of exchange of concessions across different sectors and areas.

1 UPDATE OF THE TARIFF ANALYSIS REPORTED IN THE COLLECTIVE STRATEGIC STUDY ON FTAAP

1.1 TARIFF LANDSCAPE IN THE APEC REGION

Globally, tariff rates have remained relatively stable in recent years and this trend has been reflected within the APEC region as well (UNCTAD, 2017). Nonetheless, tariff peaks in APEC remain in specific agricultural sectors¹. In particular, high tariff on agricultural goods may impact low income households, which spend a larger proportion of their income on food (Nielson, 2017).

Average MFN tariffs in APEC have generally fallen, from 6.6% in 2008 to 5.3% in 2017 (Table 1.1). However, this reduction has slowed down in recent years, with tariffs falling 0.5% in the last eight years. Tariffs on agricultural goods remain higher than those on non-agricultural products, but both have seen reductions from 2008 to 2017. Over the last ten years, the percentage of zero-tariff product lines in APEC economies has risen by 4.5 percentage points.

Table 1.1: Most favoured nation (MFN) rate trends in the APEC region, 2008-2017

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
MFN applied tariff	6.6	6.2	5.8	5.7	5.7	5.8	5.6	5.5	5.5	5.3
MFN applied tariff-agriculture	13.1	12.0	11.8	12.2	12.0	12.2	11.9	11.8	11.7	11.4
MFN applied tariff-non-agriculture	5.7	5.3	4.9	4.7	4.7	4.7	4.6	4.5	4.5	4.4
Zero-tariff product lines (%)	43.4	43.1	45.5	45.3	45.4	45.5	45.4	46.9	46.9	47.9
Zero - Tariff Imports (%)	56.1	59.0	59.6	60.2	60.2	60.0	60.3	59.7	58.4	-

Source: APEC Policy Support Unit (2018)

Based on data from 2017, UNCTAD reported that tariff peaks mainly affected sectors such as food products, animal products, apparel and tanning products (Figure 1.1). While the average MFN tariff rates on animal products, and fruit vegetable and plants was slightly above 10% in APEC; dairy products and beverages and tobacco reported significantly high MFN tariff averages of 26.1% and 28.1% respectively in 2017 (Table 1.2).

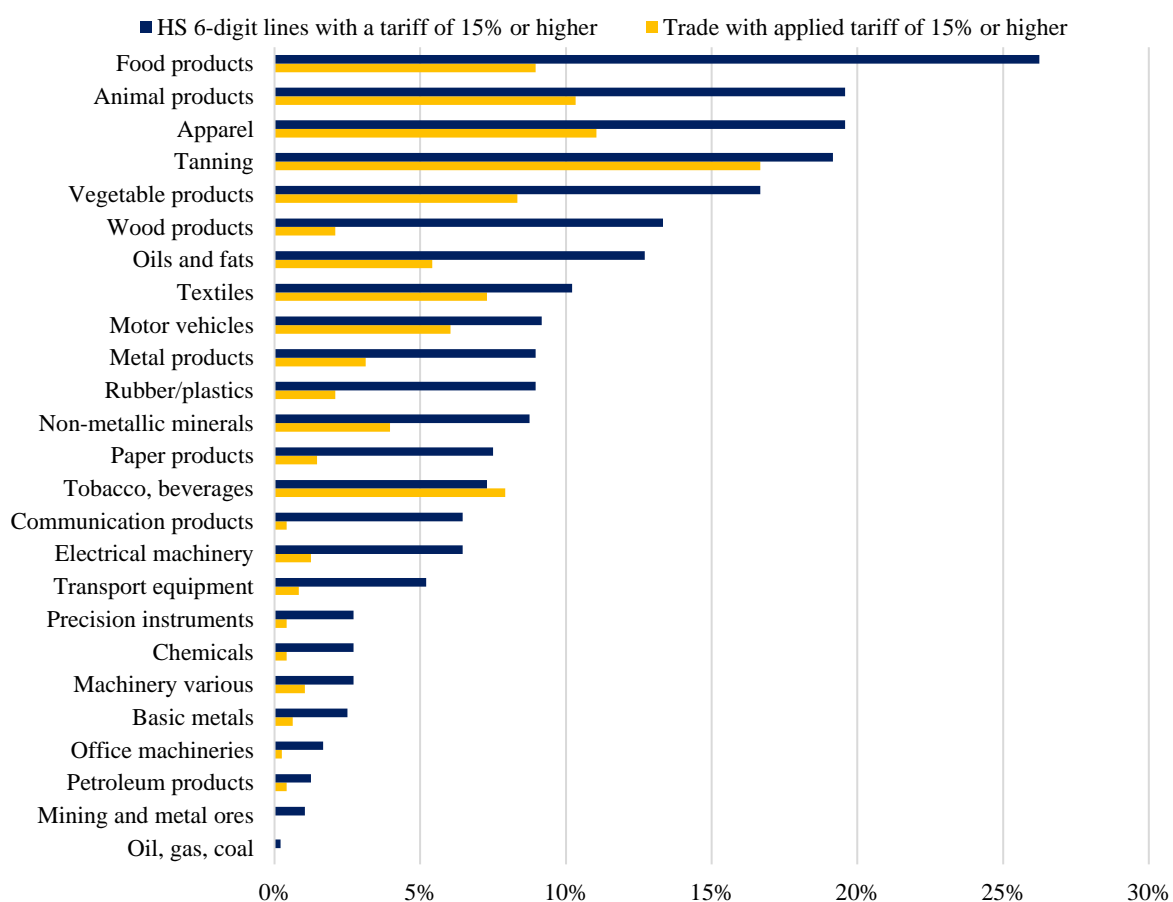
However, between 2013 and 2017, there were reductions in MFN rates for agricultural goods in APEC in all products except beverages and tobacco, which saw an increase in tariffs of 4.0 percentage points. Encouragingly, products with high tariffs such as dairy products and cereals and preparations recorded drops of 4.3 and 0.2 percentage points respectively. (Table 1.2).

Regarding non-agricultural products, MFN tariff rates were reduced between 2006 and 2017, although less drastically than those for agricultural goods due to already-low rates in non-agricultural tariffs (Table 1.2). Similar to global tariff peaks, non-agricultural products, in particular those intensive in the use of labour, such as clothing, reported relatively high tariffs

¹ Such as dairy products, beverages and tobacco, and cereals.

in APEC. Between 2013 and 2017, tariffs on clothing, and fish and fish products saw considerable reduction amongst non-agricultural products by 1.5 and 1.4 percentage points respectively. Conversely, tariffs on transport equipment saw an increase of 0.4 percentage points from 2013 to 2017 (Table 1.2).

Figure 1.1: Percentage of tariff lines with applied tariffs over 15%, by sector



Source: UNCTAD (United Nations Conference on Trade and Development). (2018). Key Statistics and Trends in Trade Policy 2018.

Table 1.2: Average applied most-favoured nation (MFN) rates in APEC region, by product category

PRODUCT CATEGORIES	AVERAGE MFN RATES				
	2006	2009	2013	2016	2017
Agricultural					
Beverages and tobacco	32.2	25.7	24.1	20.4	28.1
Dairy products	31.9	23.8	30.4	26.7	26.1
Cereals and preparations	20.5	18.3	19.3	19.3	19.1
Coffee, tea	14.0	13.3	13.4	12.7	11.7
Fruit, vegetables, plants	12.8	12.3	12.9	11.4	11.1
Sugars and confectionery	15.3	13.5	13.8	12.0	10.8
Animal products	12.0	11.7	11.8	11.0	10.7
Oilseeds, fats and oils	8.4	7.5	8.4	8.1	7.2
Other agricultural products	5.2	4.5	5.0	4.5	4.4
Cotton	3.3	2.4	2.5	2.2	2.4
Non-agricultural					
Clothing	16.0	14.1	12.8	11.3	11.3
Transport equipment	8.2	7.3	6.7	6.7	7.1
Textiles	8.5	7.1	6.5	6.3	6.3
Fish and fish products	9.1	7.8	7.5	6.2	6.1
Leather, footwear, etc.	8.4	7.2	6.6	6.3	6.0
Manufactures, n.e.s.	5.8	5.4	4.7	4.6	4.3
Wood, paper, etc.	5.8	5.1	4.5	3.8	3.7
Minerals and metals	4.8	4.3	3.9	3.7	3.6
Electrical machinery	5.5	4.7	3.8	3.9	3.5
Chemicals	3.8	3.2	3.0	2.8	2.7
Non-electrical machinery	3.8	3.1	2.8	2.8	2.7
Petroleum	3.7	2.6	2.2	2.6	2.3

Sources: WTO World Tariff Profiles for 2007, 2010, 2014, 2017 and 2018.

The percentage of duty-free tariff lines for agricultural products rose for most products between 2006 and 2017, with a relatively large increase for products such as cotton and coffee and tea (Table 1.3). On the other hand, beverages and tobacco saw a reduction in duty-free tariff lines, from 23.3% in 2006 to 17.2% in 2017, which is unsurprising given its high MFN average tariffs. In terms of non-agricultural products, electrical machinery, and petroleum saw the largest overall increase in duty-free tariff lines between 2006 and 2017 by 13.5 and 10.3 percentage points respectively (Table 1.3). However, duty-free tariff lines in petroleum dropped from 60.6% in 2013, to 58.8% in 2017. Clothing remained as the non-agricultural sector with the lowest percentage of duty-free tariff lines in 2017 (20.9%).

Table 1.3: Average percentage of duty-free tariff lines in the APEC region, by product category

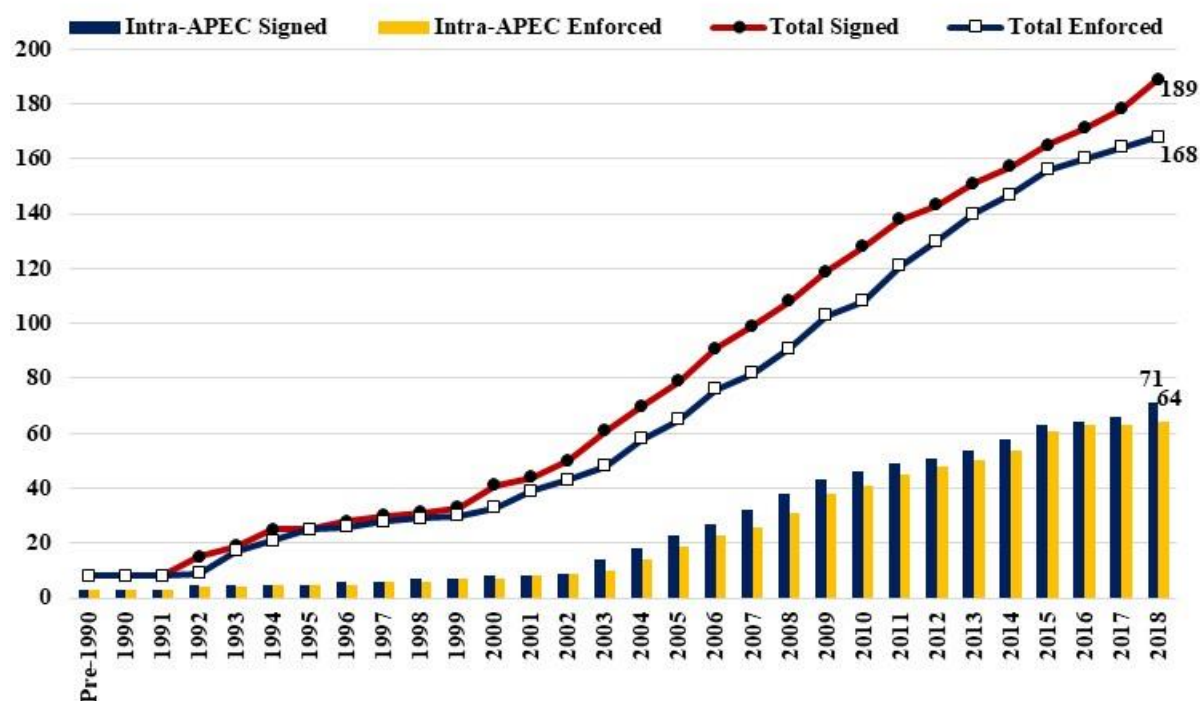
PRODUCT CATEGORIES	AVERAGE % OF DUTY-FREE TARIFF LINES				
	2006	2009	2013	2016	2017
Agriculture					
Cotton	61.7	66.5	69.9	73.4	72.9
Other agricultural products	49.1	52.6	50.2	55.9	56.7
Oilseeds, fats & oils	41.6	44.2	42.0	44.7	45.4
Animal products	39.2	39.7	37.3	39.5	39.8
Coffee, tea	28.7	32.1	31.0	35.2	37.2
Cereals & preparations	30.2	33.4	33.2	36.1	36.8
Fruit, vegetables, plants	31.8	33.2	30.2	35.1	35.9
Sugars and confectionery	29.7	30.8	30.7	32.1	32.4
Dairy products	28.7	33.0	32.6	30.3	30.1
Beverages & tobacco	23.3	26.0	22.4	27.0	17.2
Non-agricultural					
Petroleum	48.5	53.6	60.6	58.0	58.8
Non-electrical machinery	48.6	56.3	56.2	56.3	58.4
Electrical machinery	41.4	46.9	52.1	50.0	54.9
Wood, paper, etc.	46.8	49.7	50.9	53.9	54.1
Chemicals	44.0	48.6	50.0	51.5	52.1
Minerals & metals	44.4	48.8	51.0	51.9	52.0
Manufactures, n.e.s.	42.8	44.3	46.0	46.1	48.3
Fish & fish products	36.6	41.7	39.1	45.9	45.8
Transport equipment	39.3	45.2	45.7	46.1	45.8
Leather, footwear, etc.	30.0	33.3	36.5	37.2	38.1
Textiles	26.9	27.7	26.5	28.6	28.8
Clothing	15.9	16.0	16.1	20.9	20.9

Sources: WTO World Tariff Profiles for 2007, 2010, 2014, 2017 and 2018

1.2 OPPORTUNITIES FOR FURTHER TARIFF LIBERALIZATION

The number of FTAs signed by APEC economies reached 189 in 2018, of which 37.6% were with other APEC economies. 168 FTAs are currently in force, where 38.1% of them are intra-APEC (Figure 1.2). Whilst unilateral tariff liberalization has continued marginally in recent years, APEC economies in general have been actively pursuing trade agreements in order to reduce tariffs in a negotiated manner. Figure 1.2 shows that the upward trend in implementing FTAs remains despite the slowdown of unilateral MFN tariff liberalization.

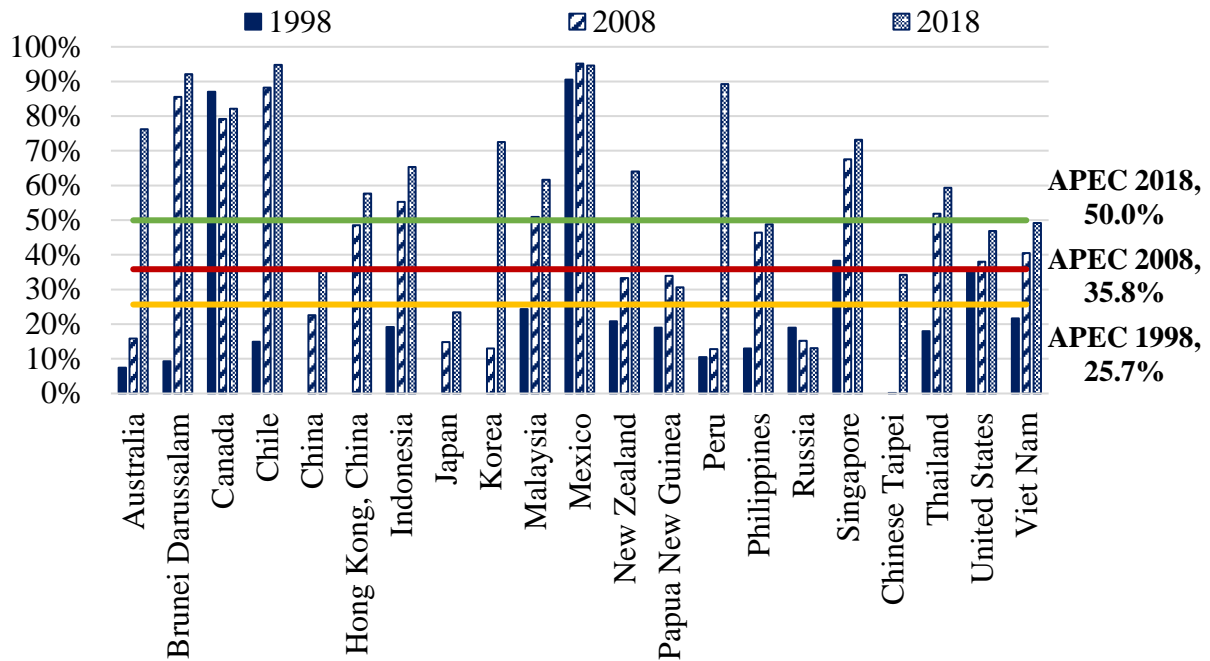
Figure 1.2: Cumulative Number of RTA/FTAs Signed and Enforced by APEC Economies



Source: APEC Secretariat, Policy Support Unit Calculations

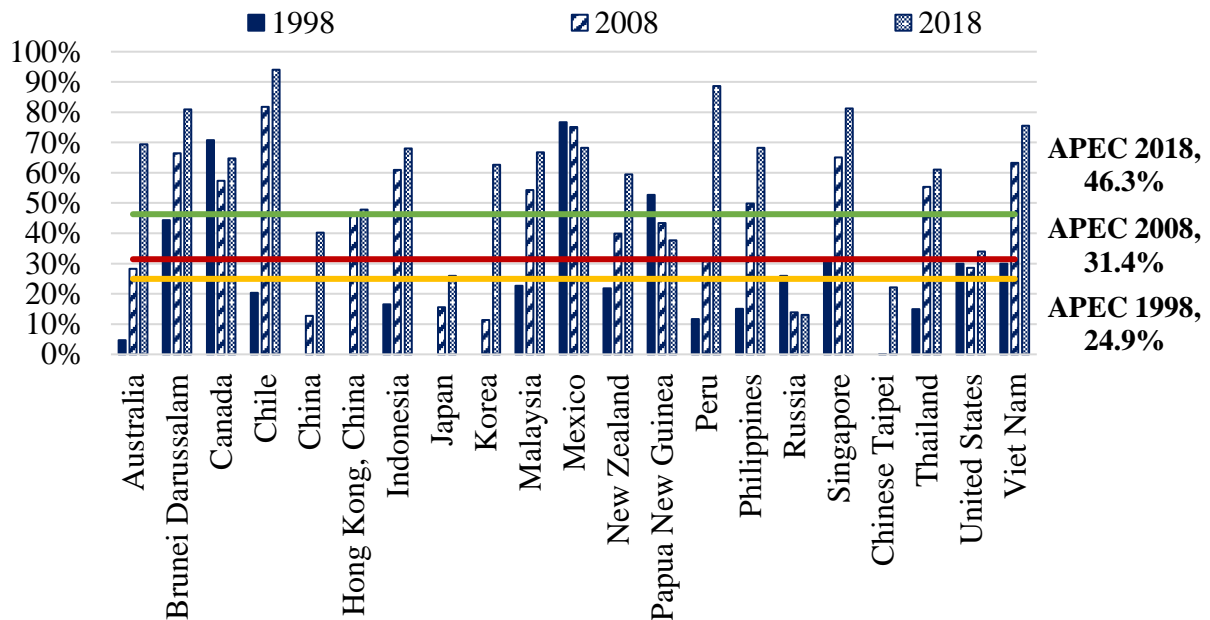
Nonetheless, there are still opportunities for APEC economies to further liberalize their tariff regimes. The share of trade between RTA/FTA partners amongst APEC economies averages at nearly half in 2018: 50.0% for exports and 46.3% for imports (Figure 1.3 and Figure 1.4). While this is a marked increase from slightly over 20% in 1998, there is still room for reducing tariffs through this avenue, and therefore increasing trade with RTA/FTA partners.

Figure 1.3: APEC Economies' Share of Trade with RTA/FTA Partners (Exports)



Source: APEC Secretariat, Policy Support Unit Calculations using data from International Monetary Fund – Direction of Trade Statistics; Chinese Taipei’s Ministry of Finance – Trade Statistics Database

Figure 1.4: APEC Economies' Share of Trade with RTA/FTA Partners (Imports)



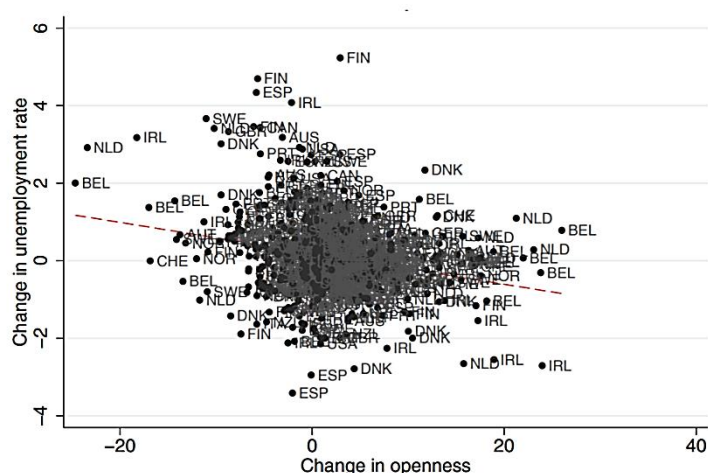
Source: APEC Secretariat, Policy Support Unit Calculations using data from International Monetary Fund – Direction of Trade Statistics; Chinese Taipei’s Ministry of Finance – Trade Statistics Database

In addition to liberalizing free trade, tariff reductions may also benefit the labor market. Indeed, a recent study by the OECD concluded that raising import tariffs might cause SMEs that are unable to cope with higher costs to close down, and lead to larger firms outsourcing their

production (Nielson, 2017). In fact, jobs maintained behind tariff barriers might eventually lead firms to change the nature of jobs for highly-skilled ones and increased use of automation in richer economies instead, due to those higher costs firms are facing.

Further research has also found that while trade openness and tariff reductions can initially cause an increase in unemployment, unemployment levels may eventually decrease below the initial level (WTO, 2017). The benefits of tariff reduction on jobs range from a 0.35 percent point decrease in unemployment for a 1 percent point reduction in tariffs (Dutt, Mitra & Ranjan, 2009), to a 0.4 percentage point decrease in aggregate unemployment from a 10 percentage point increase in trade openness (Figure 1.5).

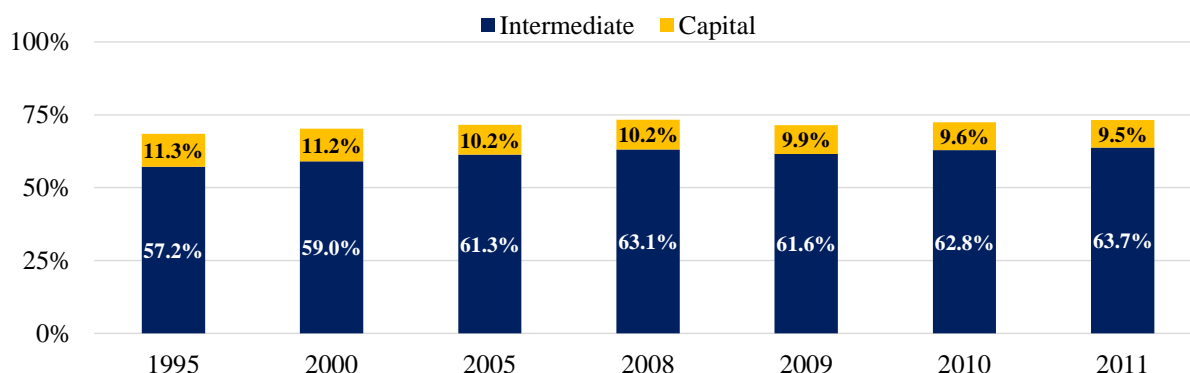
Figure 1.5: Unemployment and trade openness for OECD economies



Source: Felbermayr, G., Prat, J., & Schmerer, H. J. (2011)

Global value chains continue to play an important role in international trade: intermediate goods are imported then re-exported downstream before being processed and reaching the consumer. In 2011, almost 75% of total trade consists of intermediate and capital products that contribute to the production process (Figure 1.6).

Figure 1.6: Share of intermediate and capital products in total trade (1995-2011)

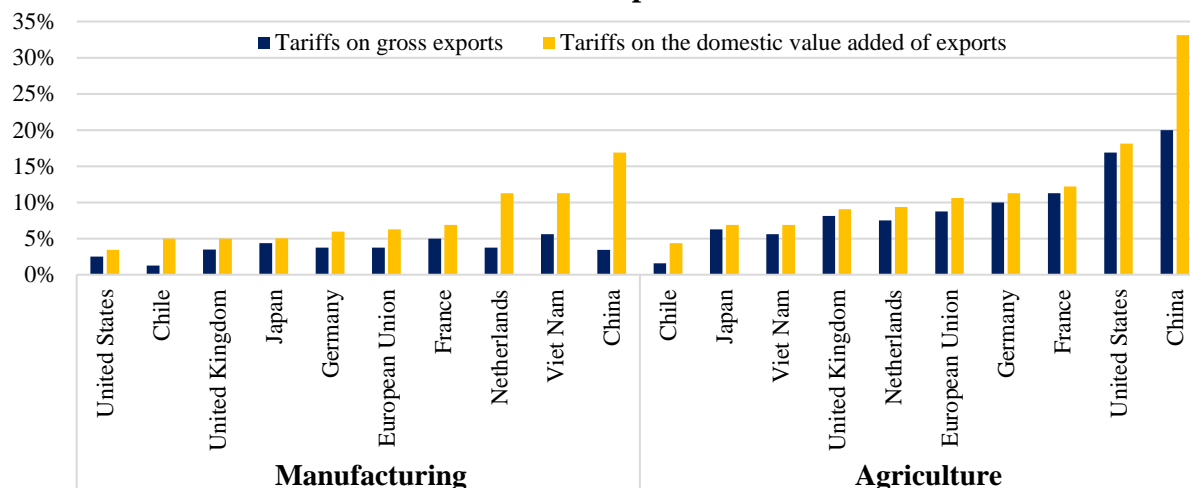


Source: OECD (2015). Trade Policy Implications of Global Value Chains.

As a result, even low levels of tariffs can cumulate each time an intermediate good crosses a border, and significantly increase the cost of production. As production costs of inputs rise due to tariffs, downstream industries experience negative protection instead and there is a dampening effect on all stages of the value chain (ICTSD, 2016). In selected economies,

research has found that the domestic value added in manufacturing and agricultural exports face higher effective tariffs than nominal rates (Figure 1.7). In essence, tariffs negatively impact the suppliers of the domestic value added content of traded goods.

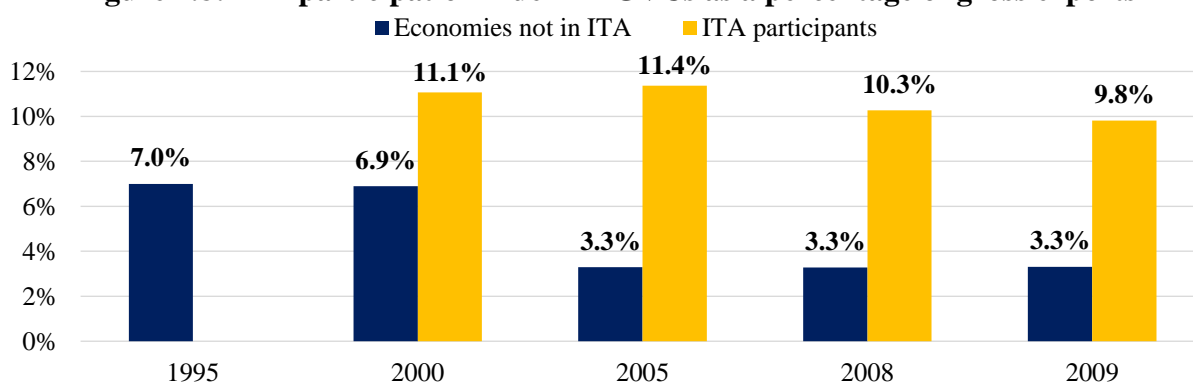
Figure 1.7: Comparing the incidence of tariffs on the gross value and the domestic value added of exports



Source: ICTSD. (2016). Trade Policies and Sustainable Development in the Context of Global Value Chains.

Additionally, the OECD found that Information Technology Agreement (ITA) participants have higher participation index in GVCs, compared to non- participants (Figure 1.8). Prior to the implementation of ITA, participation index averaged at about 7%. This went up to about 11% amongst ITA participants after implementation. ITA participants are committed to completely eliminating tariffs on IT products covered by the Agreement. There are currently 82 WTO members participating in the ITA, accounting for approximately 97% of world trade in information technology product (World Trade Organization, n.d.). A significant percentage of listed HS lines under the ITA are intermediate inputs, in particular those under the “radio, television and communication equipment” industry.

Figure 1.8: ITA participation index² in GVCs as a percentage of gross exports



Source: Miroudot, S., D. Rouzet and F. Spinelli (2013). Trade Policy Implications of Global Value Chains: Case Studies.

² Participation rate is calculated as a percentage of gross exports and measures both the use of foreign inputs in exports (backward participation) and the use of domestic intermediate inputs by other economies for their exports (forward participation).

1.3 OBSERVATIONS

APEC economies have reported progress in reducing tariff barriers, but there are still certain gaps that should be kept in mind when discussing further steps towards the FTAAP. As pointed in Figure 1.1 (Percentage of tariff lines with applied tariffs over 15%, by sector) and Table 1.2 (Average applied MFN rates in APEC region by product category), it is noted that there is room for improvement in the APEC region in addressing the areas identified in this report.

While it is positive that many APEC economies have increased their percentage of trade under the coverage of trade agreements, there is still room for improvement. As mentioned by previous studies, tariff reduction could benefit the labor market and lead economies to greater participation in global value chains.

2 POTENTIAL IMPACT FROM LOWERING TARIFFS THROUGH FTAAP PATHWAYS

2.1 INTRODUCTION

The Lima Declaration on the FTAAP endorsed by Leaders in 2016 instructed officials to both work on measures affecting trade and investment, as well as build consensus and capacity in several areas, including tariffs. In continuation of these efforts, CTI endorsed in 2017 the work program on tariffs spearheaded by Hong Kong, China and supported by PSU. This study is a component of the program and aims to provide a better understanding on the impact of lowering tariffs across some key integration initiatives that have been identified as pathways towards achieving FTAAP.

The report provides a literature review of previous studies that have examined the possible impact of reducing or eliminating import tariffs across the APEC region through possible pathways such as TPP, CPTPP and RCEP. Due to the comprehensive nature of these studies, no new simulations on trade liberalization were conducted. This literature review consolidates estimated impacts for: (1) the region and its participants; (2) individual economies in the region; and (3) regional groupings consisting of APEC economies.

Some key findings from the report are that all agreements bring gains across the region's income, welfare, trade and investment. However, the largest gain was found with the implementation of an entire FTAAP. At the individual level, gains concerning these pathways tend to be more subdued as compared to regional gains. In some cases, economies could be affected negatively by certain circumstances. For example, some economies will catch up in terms of preferential access in the same market, as those already enjoying market access at preferential rates from existing RTA/FTAs may experience a fall in exports. The reason is that other economies will start obtaining preferential treatment as well, since they will start gaining preferential market access through these pathways. Furthermore, the distribution of gains differs across agreements. For instance, in terms of absolute gains, the TPP is estimated to channel benefits towards APEC's developed economies whereas within the RCEP, benefits are primarily captured by developing ones. In relative terms, benefits in most agreements tend to be greater for developing economies, as these initiatives include some of the largest trading partners for most developing economies with whom they may not have had prior trade agreements with.

2.2 RATIONALE

There are significant levels of untapped benefits within the APEC region. For instance, in 2018, the APEC region was covered by 189 signed RTA/FTAs out of which 168 have been enforced. While this may seem extensive, only 64.3% of intra-APEC trade flows have been covered by these agreements³. Furthermore, while there have been several trade agreements in place, depth in terms of liberalization and rules differ significantly.

³ APEC Policy Support Unit Calculations (June 2019).

The FTAAP has long been the goal of APEC for economic integration of the region, and potential pathways have been identified for reaching this goal. This report attempts to shed light on the matter through the consolidation of 17 studies that have analyzed the impact of possible pathways by using computable general equilibrium (CGE) modelling. The estimated results are summarized for the areas of GDP or production level, welfare, trade flows and investment. Results related to the possible impact of these pathways on the labor market are available for some scenarios and have been summarized in this report as well. Additionally, this report evaluates the impact on sub-groups/sub-regions close to APEC. There is significant value in consolidating these studies as results are often very diverse and a side-by-side comparison allows for a better understanding of the impacts.

2.3 MODELLING CONSTRAINTS

2.3.1 OVERVIEW

CGE models are based on general equilibrium principles that quantify the impact of a shock on markets. Most models use the Global Trade Analysis Project (GTAP) program for the simulations which undertakes a multi-sectoral and multi-regional approach allowing interactions between the different markets in the system. While most CGE models are static, some studies evaluated in this report provide dynamic results investigating the impact of these agreements over time (e.g. medium run, long run). Shocks implemented by modelers attempt to replicate the actual policy change (e.g. tariff liberalization schedules) as close as possible but should agreements not be available, assumptions are made.

2.3.2 ISSUES

Data Issues

It is important for models to make use of timely and accurate data for these predictions. However, GTAP datasets that are often backdated are commonly used within CGE studies. For instance, the most recent GTAP 9 dataset used by several studies in this report, only provides data up to the year 2011, as the data volumes and information details needed to run these models makes it difficult to update datasets very frequently. This leads to several issues specifically: (1) lack of updated data on macroeconomic variables (2) recent trade data are not necessarily considered.

In response, studies have adapted the GTAP database by including information from recent trade agreements and projecting macroeconomic data to more recent years. While this may increase the precision of estimates, these projections are still made on assumptions which may or may not be realistic.

Sector Aggregation Issues

As mentioned by Jackson (2016), the large number of economies and sectors studies to be evaluated often requires aggregation to be carried out in order to make simulations more manageable to conduct. However, aggregating the different regions and sectors tends to mask the effects of individual components by smoothening peaks and improving troughs. For instance, if ASEAN is evaluated as a region, the negative results of individual economies within the grouping may not be apparent.

2.3.3 CAVEATS

Ambitious Liberalization Schedules

As texts and schedules of agreements are not always made publicly available, studies often make assumptions on the liberalization carried out within each agreement. Ambitious assumptions on the depth of liberalization result in overestimation. This is seen particularly within RCEP and FTAAP where actual liberalization schedules are either yet to be made known, discussed or negotiated by economies. In response, this report highlights studies that estimate different liberalization scenarios to show the impact on economies.

Degree of Trade Liberalization

Apart from tariff, other components within trade agreements tend to be difficult to quantify (e.g. non-tariff barriers or the liberalization of non *ad-valorem* tariff duties). Despite these issues, several studies have attempted to include these aspects, but are often based on approximations and varied assumptions. As a result, this literature review shows a range of magnitudes that have been estimated by different studies for similar integration initiatives.

2.4 RESULTS

2.4.1 IMPACT OF TRADE LIBERALIZATION THROUGH FTAAP

Several studies have examined the possible economic impact of trade liberalization through FTAAP. While some studies investigate the impact of achieving FTAAP immediately, others consider the impact through the implementation of other building blocks as intermediate steps. In general, the simulations show mostly positive results, but the magnitude of benefits are often diverse.

Aggregate effect on APEC

GDP or Production level

In absolute terms, Kawasaki (2014)⁴ predicts these gains to range between USD 809.8 billion and USD 1,504.2 billion depending on the extent of liberalization. Benefits from more extensive liberalization are expected to be channeled towards APEC's developing economies (USD 947.8 billion).

Welfare⁵

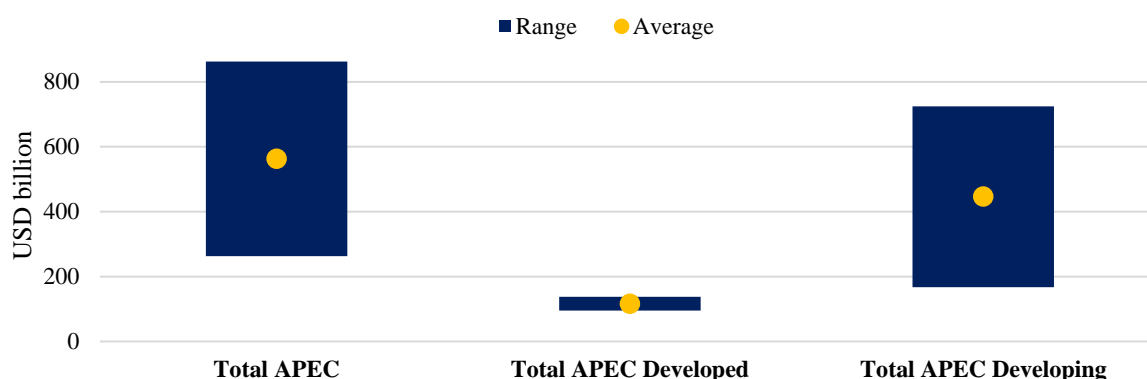
Welfare gains directed to the region have had various magnitudes estimated (Figure 2.1). For instance, although Petri, Plummer & Zhai (2011)⁶ approximate regional welfare gain to reach USD 862.6 billion, a much lower estimate of USD 262.6 billion was calculated by Gilbert, Furusawa & Scollay (2016)⁷. On average, the study estimates FTAAP to increase gains in APEC by least 1.3% within each economy. Much of this welfare gain has been captured by APEC's developing economies (USD 167.7 billion to USD 724.8 billion).

⁴ Values are in 2010 USD billion. Data for Papua New Guinea was not available.

⁵ Studies evaluated measure the change in welfare in terms of equivalent variation. Equivalent variation refers to the income required, at constant prices, to match the change in welfare.

⁶ Values are in 2007 USD billion. Data for Papua New Guinea was not available.

⁷ Values are in 2011 USD billion. Data for Papua New Guinea was not available.

Figure 2.1: Impact of FTAAP on welfare of the APEC region

Source: Petri, P., Plummer, M. & Zhai, F. (2011); Gilbert, J., Furusawa, T., & Scollay, R. (2016); and APEC Secretariat, Policy Support Unit calculations

Note: Data for Papua New Guinea was not available.

Additionally, on disaggregating these welfare gains into its components, Gilbert, Furusawa & Scollay (2016) find regional welfare to be predominantly driven by capital accumulation effects⁸ totaling USD 145.1 billion. This pattern is found to be true for both developing and developed economies in the region.

When analyzing the estimated impact of FTAAP through pathways such as the TPP/CPTPP or RCEP, the TPP track may produce regional benefits reaching USD 1,024.3 billion. The RCEP pathway with gains ranging from USD 55.2 billion to USD 901.3 billion to the APEC region is the next best choice for FTAAP to be implemented through (Lee & Itakura, 2017). Furthermore, when pathways are compared across time, Lee & Itakura (2017)⁹ find a large proportion of the benefits to be realized in the long run. For instance, gains from the CPTPP increases significantly from the USD 9.4 billion predicted in the short run to USD 591.2 billion in the long run.

Table 2.1: Impact of FTAAP pathways on APEC (in USD billion)¹⁰

	Petri, Plummer & Zhai (2011)	Lee & Itakura (2017)
TPP Track	1024.3	25.0 - 655.9
CPTPP Track	-	9.4 - 591.2
RCEP Track	-	55.2 - 901.3
East Asian FTA (EAFTA) Track¹¹	724.2	-

Source: Petri, P., Plummer, M. & Zhai, F. (2011); Lee, H., & Itakura, K. (2017); and APEC Secretariat, Policy Support Unit calculations

Note: Data for Hong Kong, China and Papua New Guinea was not available in Lee, H., & Itakura, K. (2017). Data for Papua New Guinea was not available in Petri, P., Plummer, M. & Zhai, F. (2011).

⁸ Apart from capital accumulation, other forms of economic welfare include allocative efficiency, terms of trade (TOT) and change in equity (Lee & Itakura, 2017).

⁹ Values are in 2011 USD billion.

¹⁰ TPP economies include Australia; Brunei Darussalam; Canada; Chile; Japan; Malaysia; Mexico; New Zealand; Peru; Singapore; United States; and Viet Nam.

CPTPP economies include Australia; Brunei Darussalam; Canada; Chile; Japan; Malaysia; Mexico; New Zealand; Peru; Singapore; and Viet Nam.

¹¹ EAFTA economies include Brunei Darussalam; Cambodia; China; Indonesia; Japan; Korea; Laos; Malaysia; Myanmar; Philippines; Singapore; Thailand; and Viet Nam.

In general, the range of results estimated across pathways are wide. While some variation can be explained by the different baseline years and data used for each simulation, other possible explanations could include the extent of liberalization considered where deeper liberalization assumptions tend to lead to larger benefits.

Trade

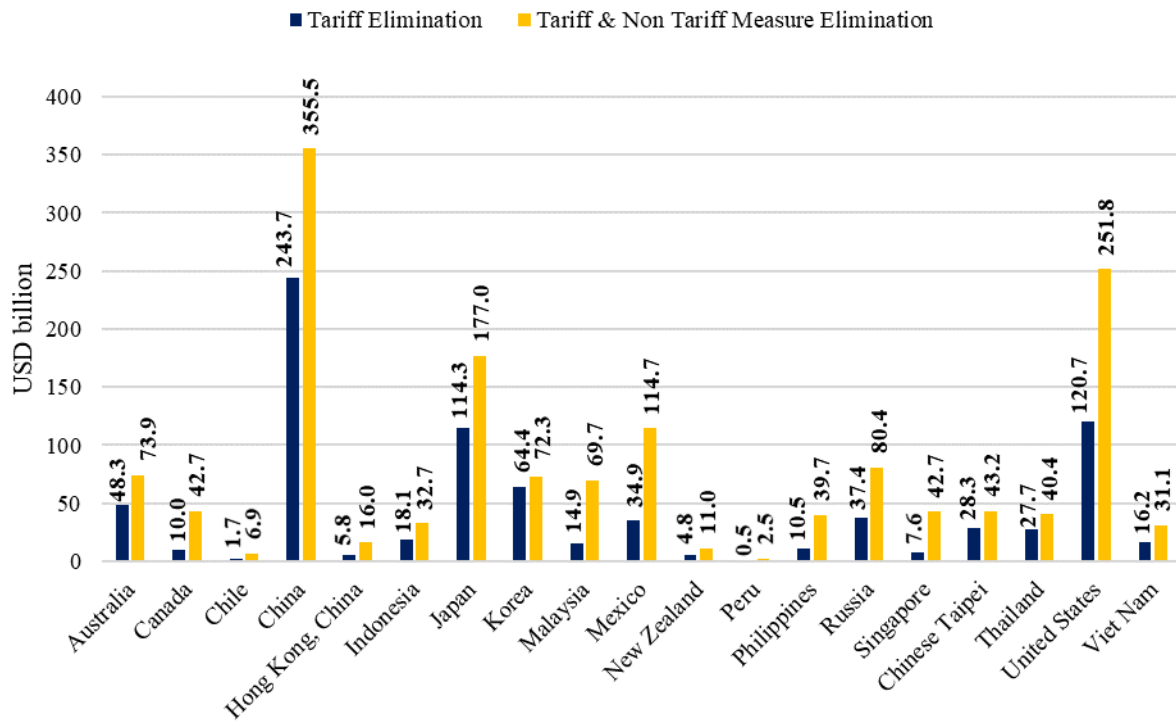
There is significant room for FTAAP to contribute towards increasing trade as only 48.1% of intra-APEC trade pairings were covered by RTA/FTAs in 2017 (APEC Policy Support Unit, 2018). Should additional liberalization be carried out through FTAAP, Petri, Plummer & Zhai (2011) estimate an increase in exports by USD 2,207.1 billion. All APEC economies, but one, boast positive export gains with approximately half of the region's trade expanding by at least USD 41.6 billion. Additionally, most of the export benefits (76.1%) from liberalization have been captured by developing APEC economies. None of the reviewed papers analyzed FTAAP's impact on APEC's imports.

Effect on individual APEC economies

GDP or Production Level

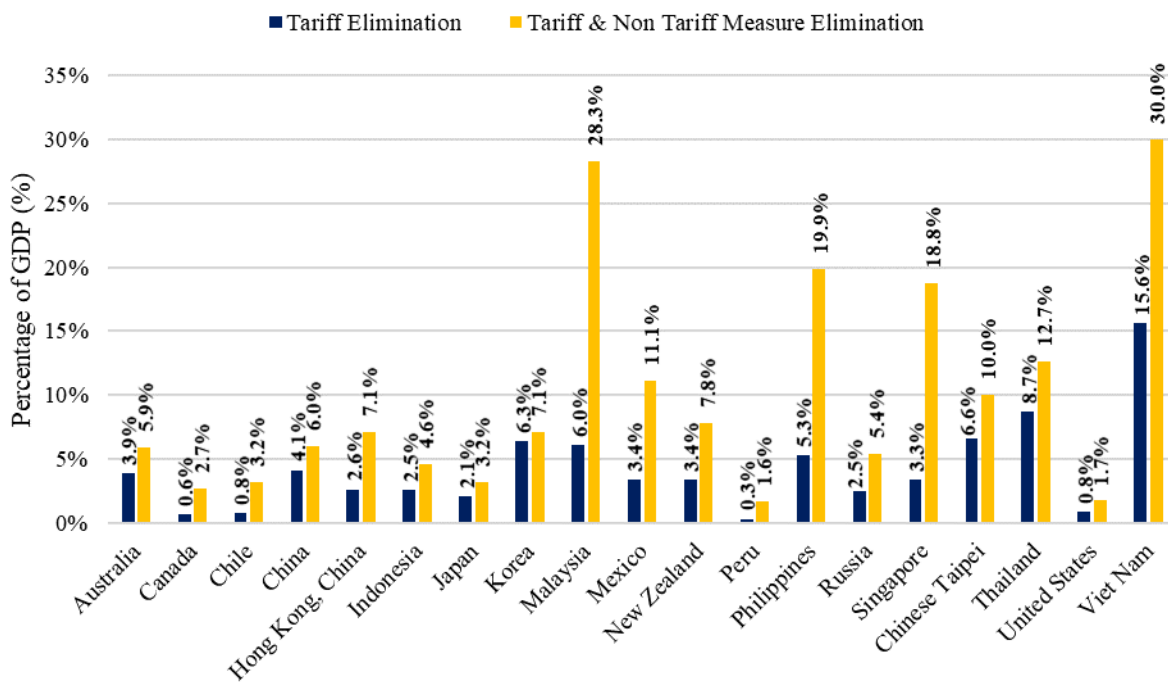
At the economy level, Kawasaki (2014) estimates gains to range from USD 0.5 billion to USD 355.5 billion. Additionally, the study finds gains to be amplified with the removal of non-tariff barriers (Figure 2.2) which the study finds to have larger macroeconomic effects than tariff removal. For instance, while APEC economies could achieve positive income gains with just the removal of tariffs, additional liberalization of non-tariff barriers within FTAAP is expected to increase regional benefits by a further USD 694.4 billion. In absolute terms, United States, China and Mexico are estimated to experience the largest change in gains from further liberalization efforts. However, in relative terms as a proportion of GDP, Viet Nam, Malaysia and the Philippines are expected to benefit the most (Figure 2.3).

Figure 2.2: Impact of depth of FTAAP on the income of APEC economies (in USD billions)



Source: Kawasaki, K. (2014) and APEC Secretariat, Policy Support Unit calculations
 Note: Data for Brunei Darussalam and Papua New Guinea was not available.

Figure 2.3: Impact of depth of FTAAP on the income of APEC economies (as a proportion of GDP)



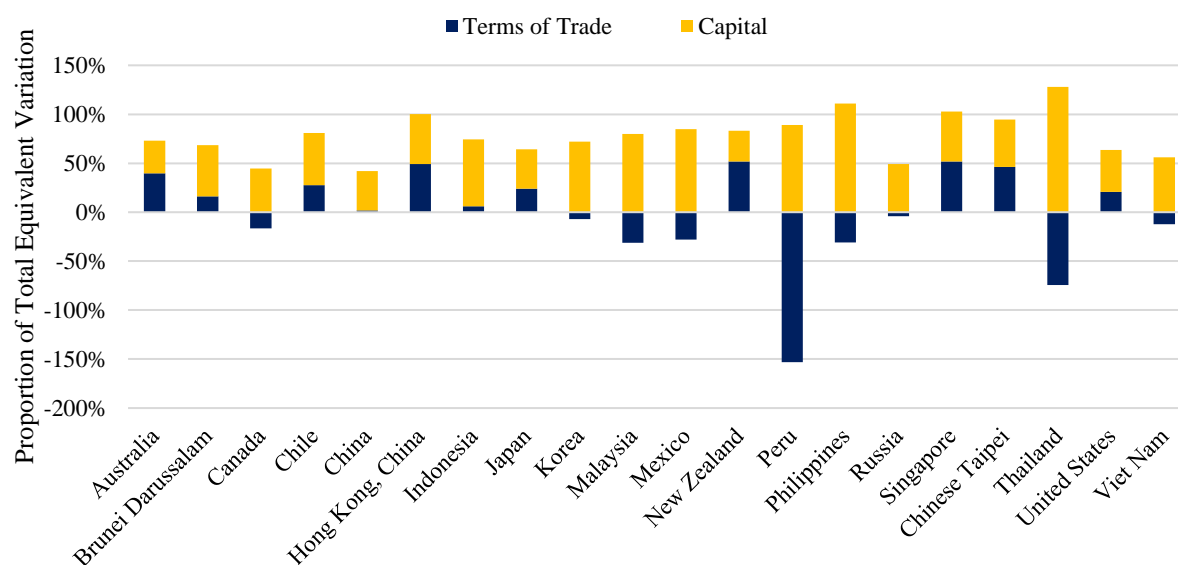
Source: Kawasaki, K. (2014) and APEC Secretariat, Policy Support Unit calculations
 Note: Data for Brunei Darussalam and Papua New Guinea was not available.

Welfare

FTAAP is predicted to increase benefits for all APEC economies with average gain estimated to range from USD 0.5 billion in Brunei Darussalam to USD 168.2 billion in China. In percentage of GDP terms, Gilbert, Furusawa, & Scollay (2016) estimate positive gains - ranging between 0.04 and 5.82% of GDP - for all APEC economies. Large deviations between studies exists particularly for economies such as China and Russia with differences between the lowest and highest welfare estimates found to be USD 263.8 billion and USD 134.9 billion respectively (Petri, Plummer & Zhai, 2011; Gilbert, Furusawa & Scollay, 2016).

Gilbert, Furusawa & Scollay (2016) further disaggregate these welfare gains into the terms of trade and capital accumulation effect. As illustrated in Figure 2.4, while most APEC economies boast an improvement in terms of trade, others have experienced significant contraction, especially within economies that have implemented bilateral liberalization commitments through RTA/FTAs previously put in force. Comparing the two effects, most economies experience a larger capital accumulation effect.

Figure 2.4: Impact of FTAAP on proportion of TOT and Capital Accumulation of APEC economies



Source: Gilbert, J., Furusawa, T., & Scollay, R. (2016) and APEC Secretariat, Policy Support Unit calculations
 Note: Data for Papua New Guinea was not available.

Trade

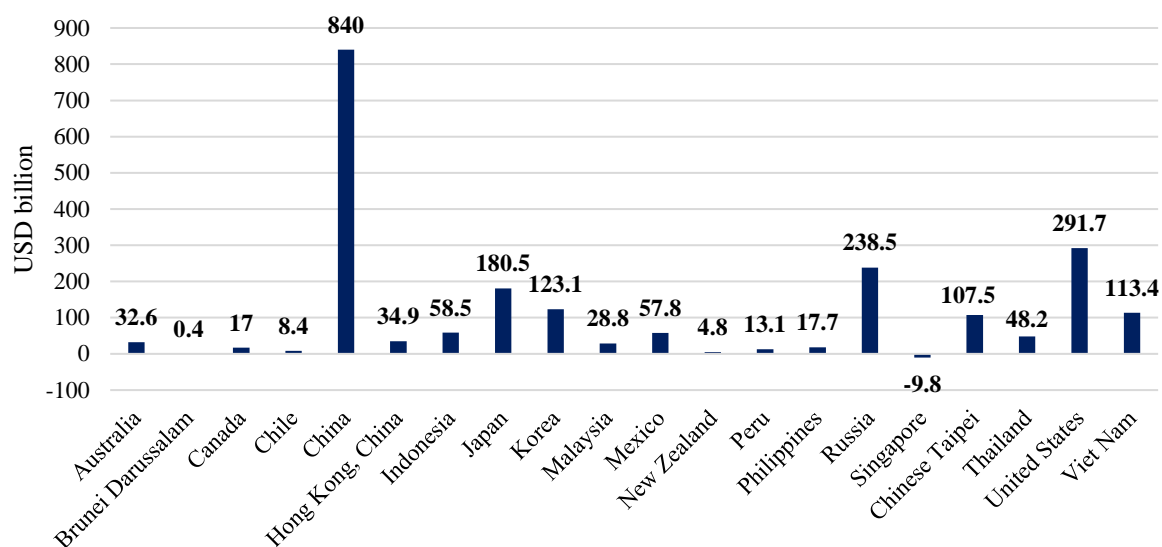
Petri, Plummer & Zhai (2011) provide export estimates when FTAAP is achieved through simultaneous implementation of both a TPP 13¹² scenario and enlargement of a hypothetical East Asia FTA track¹³. While both groupings are different from the TPP and RCEP known today, certain similarities in the composition of the TPP 13 and EAFTA scenarios could indicate that the impact of trade liberalization through these scenarios could have certain similarities to those under the TPP and RCEP liberalization scenarios.

¹² The TPP 13 scenario is described as the TPP original negotiating parties plus Korea.

¹³ The East Asian Free Trade Agreement scenario includes Brunei Darussalam; Cambodia; China; Indonesia; Japan; Korea; Laos; Malaysia; Myanmar; Philippines; Singapore; Thailand; and Viet Nam.

The study finds export changes ranging from USD -9.8 billion in Singapore to USD 840 billion in China (Figure 2.5). Small and open economies with low tariff barriers prior to a hypothetical liberalization through an eventual FTAAP are economies that are likely to experience limited export expansion. For instance, Singapore, a small and open economy with several trade agreements with key APEC partners, is predicted to experience export contraction. Some reasons for this can be attributed to the worsening terms of trade, as they are likely to lose preferential terms within other APEC markets due to the arrival of new competitors under similar conditions.

Figure 2.5: Impact of FTAAP on exports of APEC economies



Source: Petri, P., Plummer, M. & Zhai, F. (2011) and APEC Secretariat, Policy Support Unit calculations

Note: Data for Papua New Guinea was not available.

Effect on sub-regions/groups close to APEC

GDP or Production Level

Kawasaki (2014) estimates ASEAN's¹⁴ regional income to increase between USD 93.6 billion and USD 255.1 billion. The rise is expected to be larger for ASEAN members within FTAAP¹⁵, which is predicted to range from USD 95.0 billion to USD 256.3 billion. In comparison, the Pacific Alliance¹⁶ is estimated to experience lower income gains between USD 37.1 billion and USD 124.1 billion. While studies on FTAAP's impact on Eurasian Economic Union (EAEU)¹⁷ are limited, the FTAAP impact on this group can be approximated through evaluations of Russia as it is the largest member¹⁸. In absolute terms, this gain is estimated to range between USD 37.4 billion and USD 80.4 billion (Kawasaki, 2014).

¹⁴ ASEAN members include Brunei Darussalam; Cambodia; Indonesia; Laos; Malaysia; Myanmar; the Philippines; Singapore; Thailand; and Viet Nam.

¹⁵ ASEAN-FTAAP members include Brunei Darussalam; Indonesia; Malaysia; the Philippines; Singapore; Thailand; and Viet Nam.

¹⁶ The Pacific Alliance members include Chile; Colombia; Mexico; and Peru.

¹⁷ EAEU members include Armenia; Belarus; Kazakhstan; Kyrgyzstan; and Russia.

¹⁸ Based on data from the World Bank (World Development Indicators), Russia accounted for 86.4% of the EAEU's total GDP in 2017.

Additionally, it is found that several members of both ASEAN and the Pacific Alliance are able to attain a large proportion of these gains through unilateral liberalization. This signifies that domestic reforms triggered in preparation of any future FTAAP process will be important in increasing gains within regional groupings (Kawasaki, 2014).

Welfare

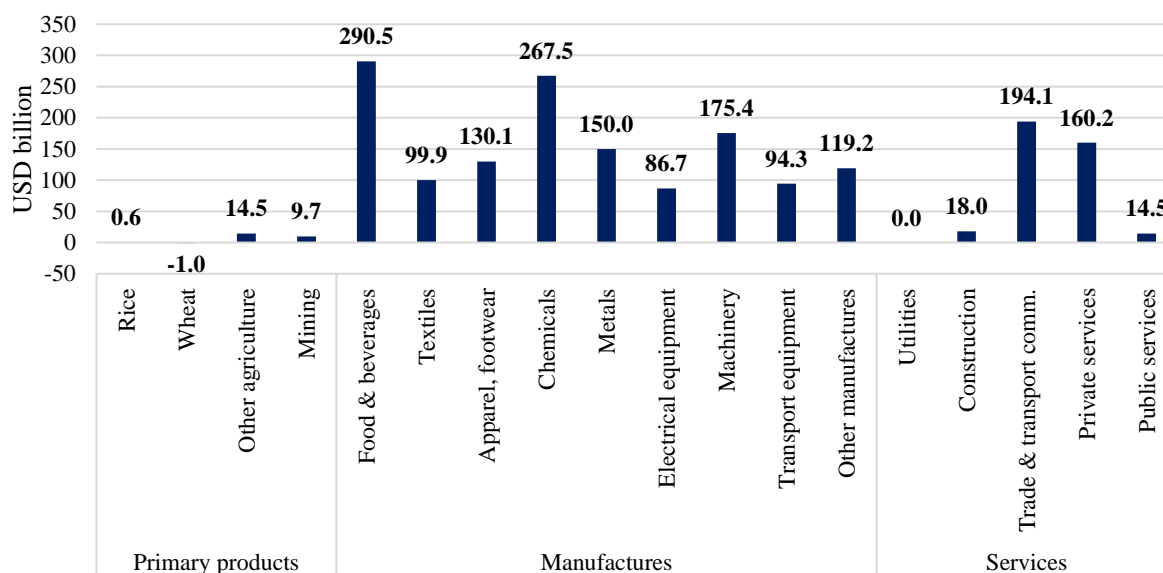
Estimated welfare gains are dispersed. On one hand, Petri, Plummer & Zhai (2011) expect ASEAN to increase welfare by USD 129.4 billion, while Pacific Alliance members increase theirs by USD 47.1 billion. Using Russia as a proxy, the EAEU’s welfare gain is estimated to be USD 152.5 billion. On the other hand, Gilbert, Furusawa & Scollay (2016) predict ASEAN, Pacific Alliance and EAEU will experience welfare gains of USD 27.8 billion, USD 8.3 billion and USD 17.6 billion respectively.

When these gains are disaggregated, the terms of trade components of all three groupings are expected to worsen, registering values between USD -4.7 billion and USD -0.7 billion. However, capital accumulation, constituting 49.3% to 82.0% of welfare gained by the groups, is estimated to increase and drive overall regional welfare gains (Gilbert, Furusawa & Scollay, 2016).

Trade

Petri, Plummer & Zhai (2011) estimate the rise in world trade (USD 1,824 billion) through FTAAP comparable to predicted benefits attained through multilateral liberalization from the Doha round¹⁹. The largest export expansion occurred within the food and beverage sector, while largest contraction was within the wheat sector (Figure 2.6). None of the reviewed papers analyzed FTAAP’s impact on the APEC region’s imports.

Figure 2.6: Impact of FTAAP on exports of the world



Source: Petri, P., Plummer, M. & Zhai, F. (2011) and APEC Secretariat, Policy Support Unit calculations

¹⁹ The world’s net welfare gain from the Doha Development Agenda is estimated to be between \$84 billion and \$574 billion (Fergusson, 2011).

Within regional groupings, achieving FTAAP through both TPP and EAFTA is estimated to increase ASEAN exports by USD 257.2 billion with individual economy gains ranging between USD -9.8 billion and USD 113.4 billion. The largest increase in exports would be displayed by Viet Nam with its exports contributing to 44.1% of the total regional change. For the case of the Pacific Alliance, FTAAP increased regional exports by USD 79.3 billion with Mexico driving most of the improvement (USD 57.8 billion). For the case of EAEU, the trade impact of FTAAP is not readily available. However, there have been studies evaluating the simultaneous implementation of both TPP and RCEP on EAEU and have found export growth of EAEU member economies to increase by an average of 0.1% (Alexander & Vladimir, 2017). Additionally, should Russia be used as a proxy for the EAEU's performance, it would fare well in accordance with Petri, Plummer & Zhai (2011), who estimate an increase in export of USD 238.5 billion. None of the reviewed papers analyzed FTAAP's impact on the region's imports.

2.4.2 IMPACT OF TRADE LIBERALIZATION THROUGH TPP/CPTPP

While the studies available on CPTPP are limited, those that have examined CPTPP reflect that the economic impact are likely to be smaller but still positive for most cases. For instance, while Dasgupta & Mukhopadhyay (2017) find the withdrawal of the United States to reduce regional output growth rates, changes are still expected to be positive for most APEC economies.

Aggregate effect on APEC

GDP or Production Level

The World Bank (2016) study finds the TPP to increase average member economy GDP by 0.4% to 10%. In absolute terms, Petri & Plummer (2016)²⁰ predict regional gains to be between USD 97 billion and USD 438 billion (Table 2.2). Also, the study finds improvements to be large and positive even under tests for robustness that estimate low and high²¹ TPP implementation scenarios (Petri & Plummer, 2016). On disaggregating the benefits from the TPP, Petri & Plummer (2016) find tariff elimination to account for only 12% of benefits channeled towards TPP members whereas liberalization of non-tariff barriers in goods accounts for 43% of estimated gains.

For the case of the CPTPP, absolute gains to the APEC region are predicted to be positive at USD 138 billion. Real GDP is estimated to increase by 0.075% for CPTPP participating economies (Ciuriak, Xiao & Dadkhah, 2017). The increase in income is generally smaller than those predicted under the TPP, but is likely a result of the agreement being smaller without the United States and many CPTPP members already having in place several free trade agreements with each other (Petri, Plummer, Urata & Zhai, 2017).

With relation to the distribution of these income gains, Table 2.2 shows approximately 60% to 80% of these gains channeled towards developed economies. This is largely consistent with expectations, as almost all of APEC's developed economies are part of the TPP or CPTPP, while only seven out of sixteen developing economies participate.

²⁰ Values are in 2015 USD billion. Data for Papua New Guinea was not available.

²¹ In comparison to the normal scenario, the low scenario has 20% lower growth rates, use of tariff preferences and reduction of non-tariff barriers. Whereas, in the high scenario, growth rates and use of tariff preferences are assumed to be 10% higher.

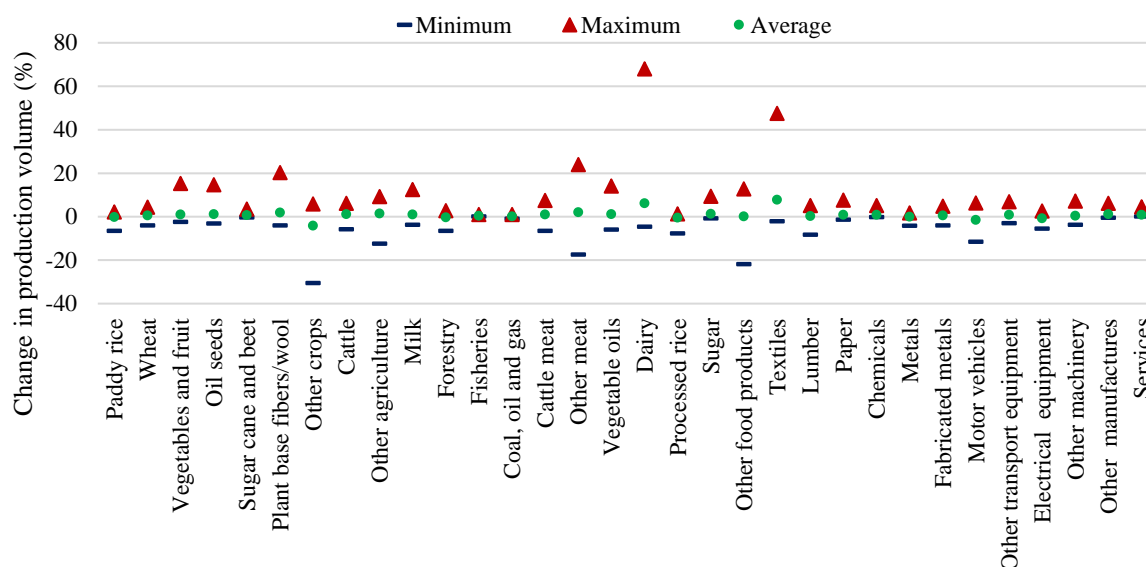
Table 2.2: Impact of TPP & CPTPP on income of the APEC region (in USD billion)

	TPP			CPTPP
	Short Run	Medium Run	Long Run	
APEC	97.0	278.0	438.0	138.0
APEC Developed	78.0	213.0	314.0	81.0
APEC Developing	19.0	65.0	124.0	57.0

Source: Petri, P., & Plummer, M. (2016); Petri, P., Plummer, M., Urata, S., & Zhai, F. (2017); and APEC Secretariat, Policy Support Unit calculations

Note: Data for Papua New Guinea was not available.

As a result of the TPP, World Bank (2016) estimates that skilled labor industries are likely to expand faster within advanced economies while the same trend is true for unskilled labor-intensive industries within developing ones. For instance, Figure 2.7 shows average output change within the textile industry to grow the most. It is largely driven by increases predicted in Viet Nam. On the other hand, the largest estimated contractions are found within sectors such as other crops, motor vehicles and other food products. Furthermore, Gilbert, Furusawa & Scollay (2016) observe structural changes in production to have occurred within smaller economies such as Brunei Darussalam and Viet Nam as compared to larger ones.

Figure 2.7: Impact of TPP on production volume of TPP Participants

Source: Gilbert, J., Furusawa, T., & Scollay, R. (2016) and APEC Secretariat, Policy Support Unit calculations

Welfare

Studies estimate TPP's welfare gain for the APEC region to range from USD 7.5 billion and USD 31.5 billion. For the CPTPP, Ciuriak, Xiao & Dadkhah (2017)²² calculate this gain to be approximately USD 10 billion.

As illustrated in Table 2.3, benefits ranging between USD 10.1 billion to USD 25 billion are directed towards APEC's developed economies with Gilbert, Furusawa & Scollay (2016) even

²² Values are in 2017 USD billion. Data for Australia; Hong Kong, China; Indonesia; Papua New Guinea; Philippines; Russia; and Thailand.

predicting negative effects in the medium run for developing ones. However, this effect on developing economies is reversed in the long run when tariff liberalization moves toward completion, with developing economies expected to gain USD 6.5 billion (Gilbert, Furusawa & Scollay, 2016). The increase in welfare gains are a result of the positive terms of trade effects registered.

Table 2.3: Impact of TPP & CPTPP on welfare of the APEC region (in USD billion)

	TPP			CPTPP
	Gilbert, Furusawa, & Scollay (2016) Medium Run	Gilbert, Furusawa & Scollay (2016) Long Run	Ciuriak, Xiao & Dadkhah (2017)	Ciuriak, Xiao & Dadkhah (2017)
APEC	7.5	31.5	25.7	10.0
APEC Developed	10.1	25.0	21.7	5.1
APEC Developing	-2.5	6.5	3.9	4.8

Source: Gilbert, J., Furusawa, T., & Scollay, R. (2016); Ciuriak, D., Xiao, J., & Dadkhah, A. (2017); and APEC Secretariat, Policy Support Unit calculations

Note: Data for Papua New Guinea was not available for both studies. Data for Brunei Darussalam; Hong Kong, China; Indonesia; Philippines; Russia; Papua New Guinea; and Thailand was not available in Ciuriak, D., Xiao, J., & Dadkhah, A. (2017).

For the case of APEC economies participating in TPP and CPTPP, Table 2.4 shows expected welfare gains to range from USD 0.5 billion to USD 38 billion. Sikdar & Mukhopadhyay (2017)²³ predict that welfare gains for participants are often higher in the medium run than in the long run, while Gilbert, Furusawa & Scollay (2016) find long run benefits of the TPP to be larger. The difference in predictions is likely to be due to differences in liberalization scenarios with Sikdar & Mukhopadhyay (2017) considering tariff liberalization and trade facilitation while Gilbert, Furusawa & Scollay (2016) considering liberalization of tariff and non-tariff barriers

Table 2.4: Impact of TPP & CPTPP on welfare of the TPP/CPTPP members (in USD billion)

	TPP					CPTPP		
	Ciuriak, Xiao & Dadkhah (2017)	Gilbert, Furusawa & Scollay (2016)		Sikdar & Mukhopadhyay (2017)		Ciuriak, Xiao & Dadkhah (2017)	Sikdar & Mukhopadhyay (2017)	
		Medium Run	Long Run	Medium Run	Long Run		Medium Run	Long Run
APEC Member	34.8	14.6	38.0	19.7	0.5	13.5	15.3	0.8

Source: Gilbert, J., Furusawa, T., & Scollay, R. (2016); Ciuriak, D., Xiao, J., & Dadkhah, A. (2017); Sikdar, C., & Mukhopadhyay, K. (2017); and APEC Secretariat, Policy Support Unit calculations

Note: Data for Brunei Darussalam was not available in Ciuriak, D., Xiao, J., & Dadkhah, A. (2017).

Trade

Petri, Plummer, Urata & Zhai (2017) estimate regional export gains through the TPP and CPTPP to be USD 1,022 billion and USD 275 billion, respectively. While Ciuriak, Xiao &

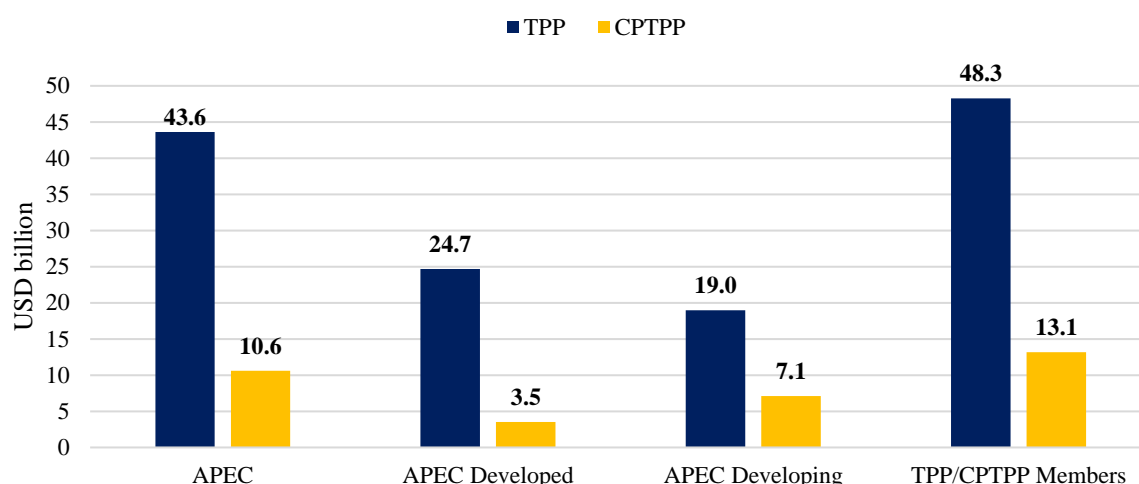
²³ Values are in 2017 USD billion.

Dadkhah (2017) predict a value of USD 40.2 billion for the TPP and USD 10.2 billion for the CPTPP. The TPP expects approximately between 55% and 71% of regional gains to be channeled towards developed economies, with the proportion falling slightly under CPTPP to between 33% and 56%.

Additionally, Ciuriak, Xiao & Dadkhah (2017) predict the intra TPP-export of automotive products (USD 3.6 billion) in the case of goods, and business services (USD 576 million) in the case of services to grow the most. As noted under the section on GDP, Viet Nam’s textile outputs are expected to grow significantly under the TPP, leading to an increase in exports as well. However, with the CPTPP, these export gains are expected to fall as a result of reduced access to the United States market.

For the case of imports, regional gains from the TPP and CPTPP are estimated to be USD 43.6 billion and USD 10.6 billion, respectively (Figure 2.8). Approximately 33% to 57% of the regional increase in imports has been channeled towards APEC’s developed economies. TPP and CPTPP members register the largest increase in imports of USD 48.3 billion and USD 13.1 billion, respectively.

Figure 2.8: Impact of TPP/CPTPP on import of APEC and TPP/CPTPP members



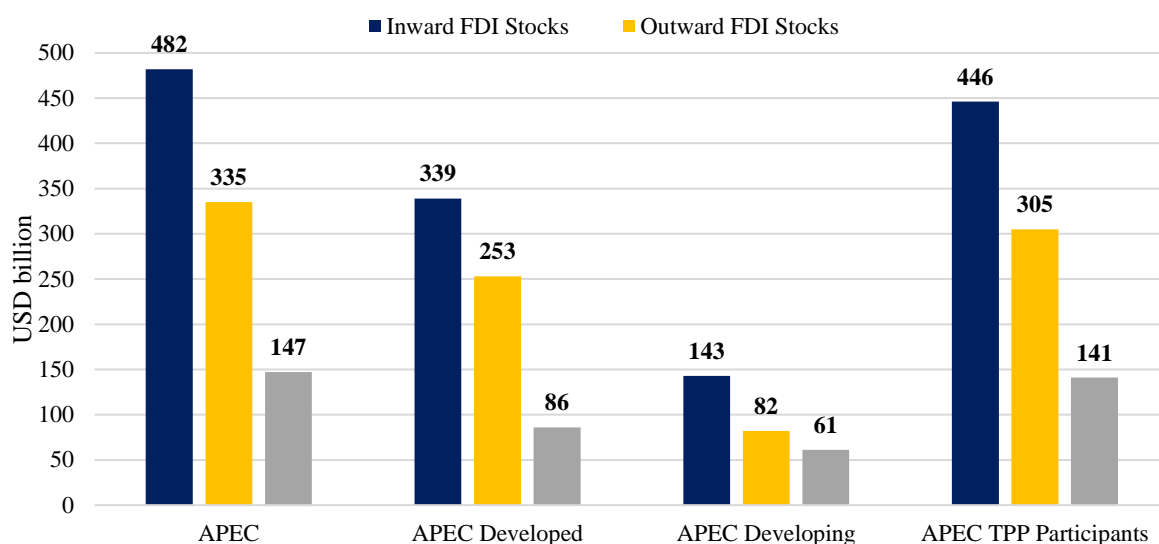
Source: Ciuriak, D., Xiao, J., & Dadkhah, A. (2017)

Note: Data for Brunei Darussalam; Hong Kong, China; Indonesia; Philippines; Russia; Papua New Guinea; and Thailand was not available

Investment

As shown in Figure 2.9, Petri & Plummer (2016) predict the TPP to increase APEC’s inward and outward FDI stocks by USD 482 billion and USD 335 billion respectively. Net investment for the region is positive, out of which approximately 59% of the increase is channeled towards APEC’s developed region. Some reasons suggested for the increase of FDI include growth in GDP and reduced investment barriers across economies (Petri & Plummer, 2016).

With regards to TPP participants, inward and outward FDI would increase by USD 446 billion and USD 305 billion, respectively. A large proportion of the benefits are directed towards APEC economies that are part of TPP, as only 4.1% of the increase of APEC’s net FDI stocks would be channeled towards APEC economies not participating in TPP.

Figure 2.9: Impact of TPP on investment of the APEC region

Source: Petri, P., & Plummer, M. (2016)

Note: Data for Papua New Guinea was not available.

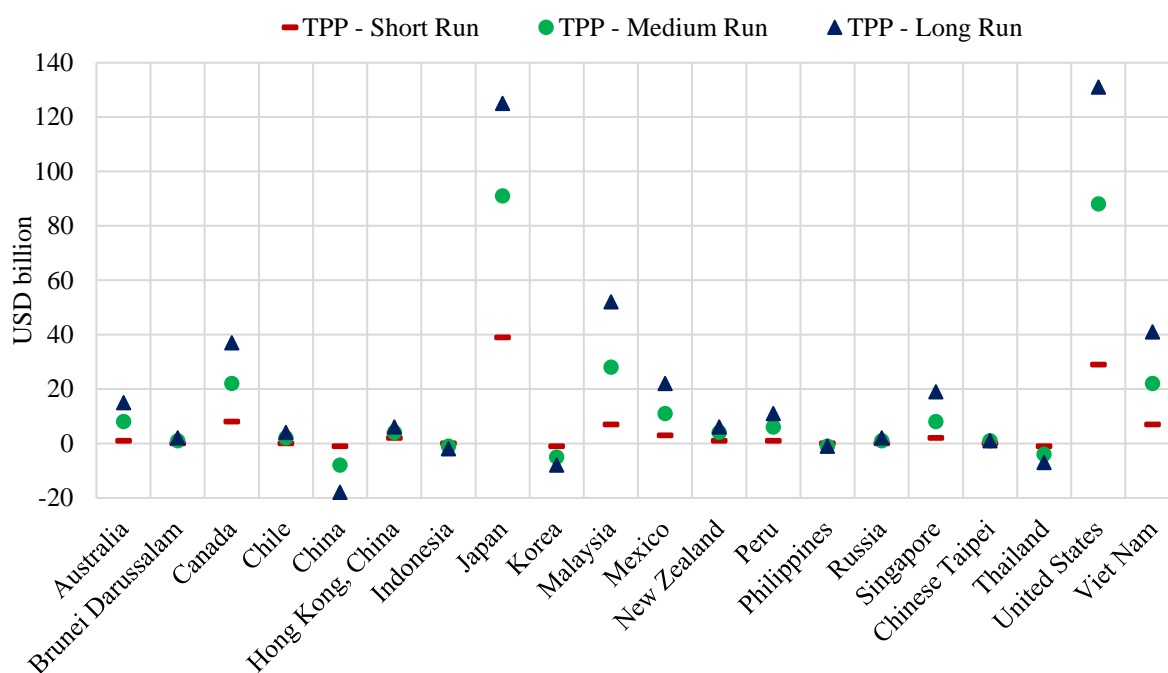
Effect on individual APEC economies

GDP or Production Level

At the individual economy level, Petri & Plummer (2016)²⁴ predict income changes from the TPP to range from USD -18 billion to USD 131 billion. For the CPTPP, the range is estimated to be between USD -10 billion and USD 46 billion. Apart from the large spread identified, the distribution is uneven with developed economies boasting higher returns – in absolute terms – over developing ones under both scenarios.

As illustrated in Figure 2.10, TPP's effects are dependent on the time period evaluated. In the short run, absolute income gains to TPP members tend to be minimal with liberalization effects becoming more obvious over time. However, this trend is reversed for non-TPP APEC members where income gains fall. Hong Kong, China and Russia are exceptions with slight positive gains registered in the short, medium and long run, due to assumptions by Petri and Plummer (2016) that TPP provisions would liberalize some trade with non-members. All in all, in the long run, the United States would produce the largest income gain followed by Japan and Malaysia under TPP. Petri & Plummer (2016) estimate that Japan's estimated benefits are largely a result of its improved market access and liberalization of auto imports in other TPP counterparts.

²⁴ Values are in 2015 USD billion.

Figure 2.10: Impact of TPP on income of APEC economies

Source: Petri, P., & Plummer, M. (2016) and APEC Secretariat, Policy Support Unit calculations

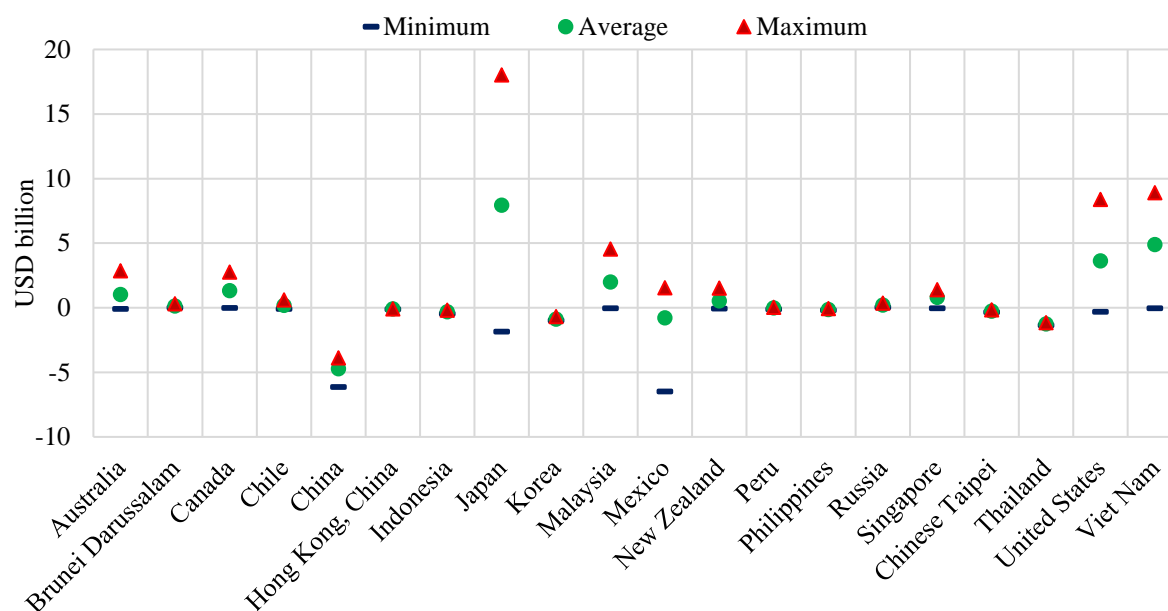
Note: Data for Papua New Guinea was not available.

Welfare

Based on Ciuriak, Xiao & Dadkhah (2017), welfare changes for the APEC region resulting from the TPP would extend from a low of USD -6.2 billion to a high of USD 10.1 billion. A slightly rosier outcome is predicted by Gilbert, Furusawa & Scollay (2016) who estimates regional welfare changes from the TPP to be between USD -4.1 billion and USD 18.0 billion. In absolute terms, these welfare gains are dependent on the size of economies, as the study estimates larger economies to gain the most. Additionally, the study finds long run welfare gains to be higher than those in the medium run for more than half of the region.

As shown in Figure 2.11, TPP participants generally benefit from positive welfare gains through TPP, while others experience a decline in welfare or remain largely unaffected. For instance, on average, Japan is the largest benefactor followed by Viet Nam and the United States, all of whom are members of the TPP. On the other hand, economies such as China are negatively affected. Rahman & Ara (2015) predict similar outcomes with China expected to experience the largest welfare loss of USD 2.1 billion. Notwithstanding the similarities, these authors estimate higher welfare gains for Australia than for the United States, with Sikdar & Mukhopadhyay (2017) predicting benefits to rise even in the long run.

Although in absolute terms, economies such as Japan would benefit with the largest welfare gains, the pattern differs in terms of GDP with small economies such as Viet Nam emerging as the largest benefactors (Gilbert, Furusawa & Scollay, 2016).

Figure 2.11: Impact of TPP on welfare of APEC economies

Source: Gilbert, J., Furusawa, T., & Scollay, R. (2016); Ciuriak, D., Xiao, J., & Dadkhah, A. (2017); Sikdar, C., & Mukhopadhyay, K. (2017); and APEC Secretariat, Policy Support Unit calculations

Note: Data for Papua New Guinea was not available.

For the case of the CPTPP, Ciuriak, Xiao & Dadkhah (2017) and Sikdar & Mukhopadhyay (2017) estimate changes to be between USD -2.0 billion and USD 4.0 billion. Unlike the TPP, benefits channeled to CPTPP participants are mostly expected to fall over time (Sikdar & Mukhopadhyay, 2017).

Trade

Studies by Ciuriak, Xiao & Dadkhah (2017) and Petri, Plummer, Urata, & Zhai (2017) estimate the impact on exports for each economy to be significantly different. But the relative outcomes predicted by each study are similar. For instance, both studies predict the TPP to boast the largest export increases in Japan, the United States and Viet Nam. It is also predicted that China will be most affected by the TPP, with Rahman & Ara (2015) expecting Chinese exports to fall by 0.12%. Much of this has been attributed to the trade diversion effects from its trade relations with TPP/CPTPP members (Sikdar & Mukhopadhyay, 2017).

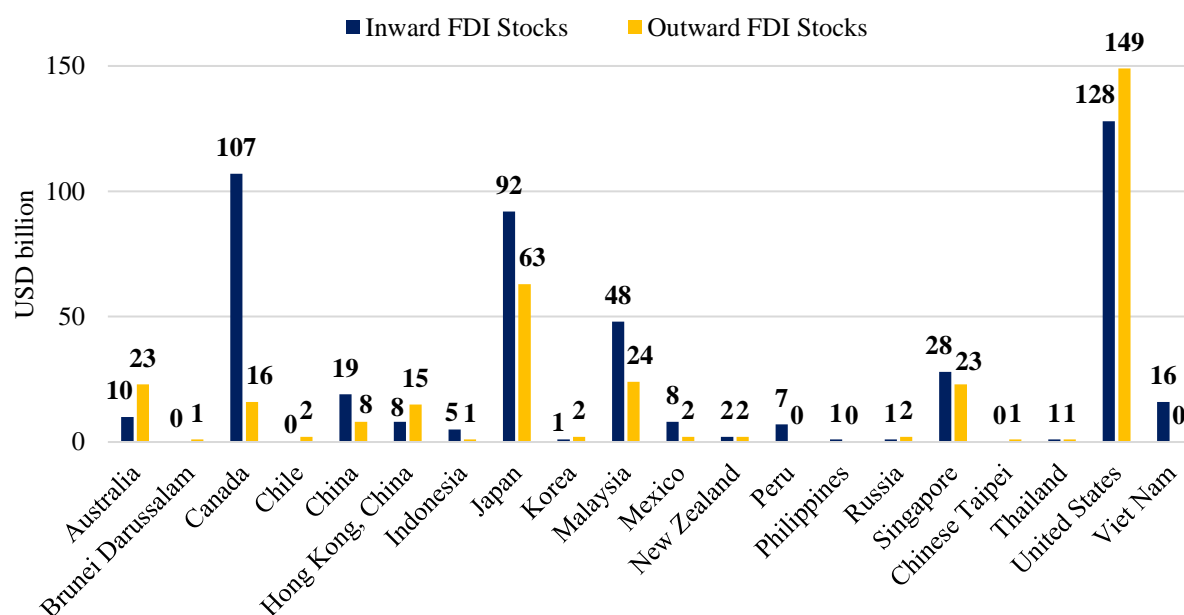
For the case of the CPTPP, export changes are expected to range from USD -10 billion to USD 97 billion. Furthermore, the agreement is seen to improve outcomes for Canada, Chile, Mexico and Peru as it prevents erosion of their preferential market access in the United States. Instead, it allows these economies to gain market shares within Asian markets in which they have limited shares in. Singapore encounters similar effects with the CPTPP, as its preferential market access to the United States is protected from other competitors such as most other Asian economies (Ciuriak, Xiao & Dadkhah, 2017).

At the individual economy level, import gains from the TPP ranged from USD - 3.1 billion to USD 15.7 billion while CPTPP registered a narrower range between USD -1.8 billion and USD 3.2 billion. While Viet Nam is estimated to feature the largest increase in imports, the estimated increase through the TPP is almost five times larger than that under the CPTPP (Ciuriak, Xiao, & Dadkhah, 2017).

Investment

At the economy level, Figure 2.12 illustrates changes in inward FDI stocks exceeding outward FDI stocks for many economies when the TPP is implemented. The largest benefactors from the increase in inward FDI stocks are the United States, Canada and Japan. As a whole, estimated net stocks range from USD -21 billion to USD 91 billion, with ten economies registering higher increases in inward than outward FDI stocks.

Figure 2.12: Impact of TPP on inward and outward FDI stocks for APEC economies



Source: Petri, P., & Plummer, M. (2016)

Note: Data for Papua New Guinea was not available.

Labor Market

Mukhopadhyay & Thomassin (2018) analyzed the possible impact of TPP and CPTPP on Canada's employment levels. Based on the different tariff liberalization scenarios presented in this study, it is possible to conclude that the impact on employment under TPP will be slightly larger greater than under CPTPP. TPP would create 36,400 new jobs in Canada, while CPTPP would create 32,970 new jobs. Jobs for skilled and unskilled workers will increase, with a small advantage for skilled workers.

However, Mukhopadhyay & Thomassin (2018) find job creation in Canada to be more significant when tariff liberalization by TPP/CPTPP participants are accompanied by technological upgrades. In this case, 957,940 new jobs would be created with TPP and 510,210 new jobs with CPTPP. Likewise, under this scenario, more new jobs would be located within sectors where skilled labor is needed.

Dasgupta & Mukhopadhyay (2017) evaluate the impact of the TPP on selected APEC economies specifically Brunei Darussalam, Malaysia, Singapore and Viet Nam (Table 2.5). All four APEC economies boast positive income growth rates for both TPP and CPTPP scenarios, but income growth rates are lower under the CPTPP scenario for both skilled and unskilled labor. The absence of the United States in CPTPP is estimated to affect the potential income growth in these economies, particularly Viet Nam where income growth rates would fall from

11.0% in the TPP to 2.2% in the CPTPP for skilled labor, and from 10.6% to 2.2% for unskilled labor.

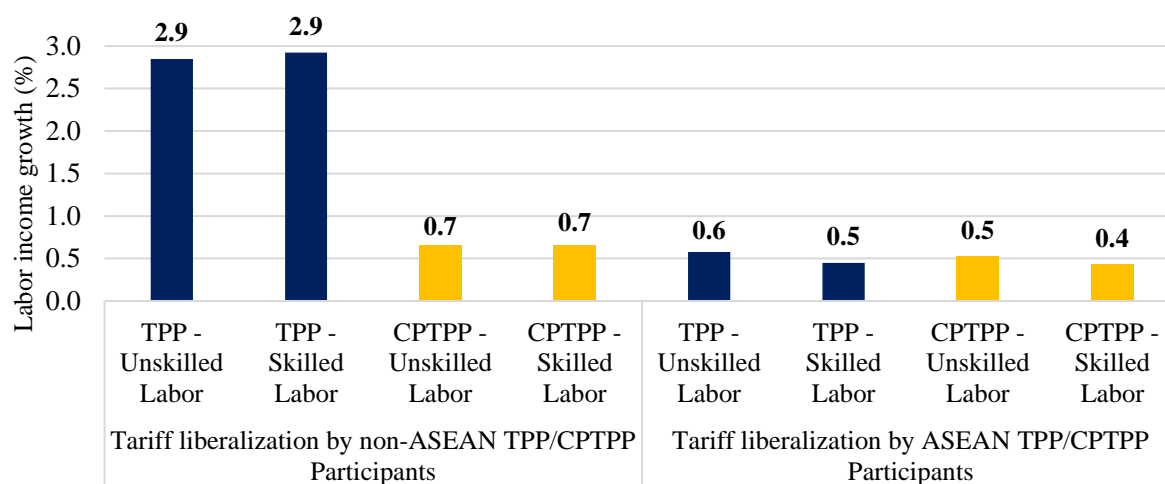
Table 2.5: Impact of TPP on income growth for selected APEC economies (% change)

	Tariff Liberalization by non-ASEAN TPP/CPTPP Participants				Tariff Liberalization by ASEAN TPP/CPTPP Participants			
	TPP		CPTPP		TPP		CPTPP	
	Unskilled Labor	Skilled Labor	Unskilled Labor	Skilled Labor	Unskilled Labor	Skilled Labor	Unskilled Labor	Skilled Labor
Brunei Darussalam	0.1	0.1	0.0	0.0	0.3	0.2	0.3	0.2
Malaysia	0.6	0.5	0.3	0.3	1.0	0.8	0.9	0.8
Singapore	0.1	0.1	0.1	0.1	0.0	0.0	0.0	0.0
Viet Nam	10.6	11.0	2.2	2.2	1.0	0.8	0.9	0.7

Source: Dasgupta & Mukhopadhyay (2017)

Additionally, Dasgupta & Mukhopadhyay (2017) find growth of ASEAN economies participating in TPP/CPTPP to be positive even when these economies only carry out unilateral liberalization. On average, implementing the TPP leads to these ASEAN economies experiencing a significant growth of income for skilled and unskilled workers. Compared to the TPP, the CPTPP scenario registers lower income growth rates for both skilled and unskilled labor for most ASEAN participants. For these ASEAN economies, not being able to enjoy preferential market access in the US market affects significantly their labor income growth.

Figure 2.13: Average labor income growth of ASEAN economies participating in TPP/CPTPP



Source: Dasgupta, & Mukhopadhyay (2017)

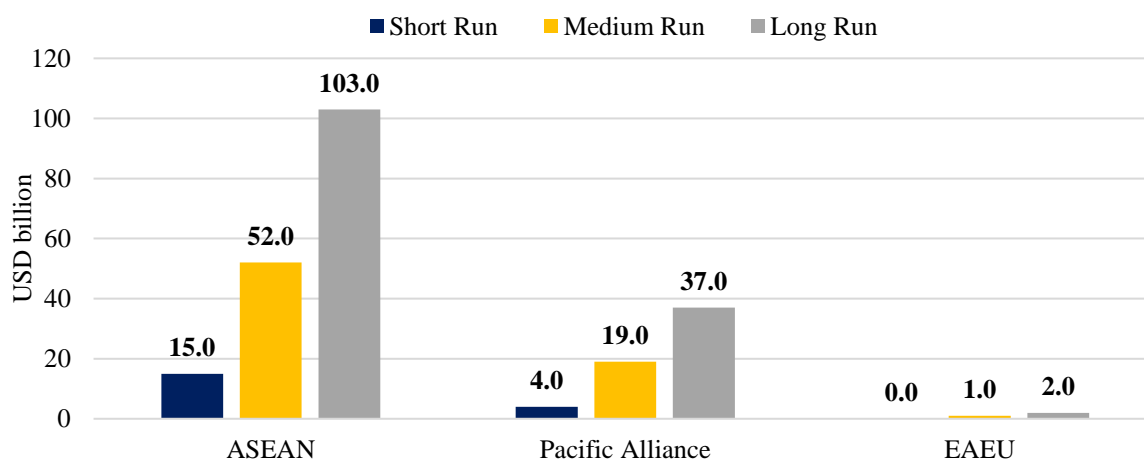
Effect on sub-regions/groups close to APEC

Among ASEAN members, four economies are participants to the TPP/CPTPP, whereas for the Pacific Alliance and the EAEU, participation falls to three and zero respectively. TPP and CPTPP are likely to have a negative impact in some APEC members that are not part of these integration initiatives. The following sections provide an overview of the impact of TPP and CPTPP on sub-regions.

GDP or Production Level

As shown in Figure 2.14, larger income gains are expected within ASEAN as compared to the Pacific Alliance and the EAEU. In general, gains for the three groups are expected to increase over time. In the long run, ASEAN, the Pacific Alliance and the EAEU²⁵ register gains of USD 103 billion, USD 37 billion and USD 2 billion respectively. Between the short and long run, ASEAN and the Pacific Alliance will experience income growth by more than six times while the EAEU will grow by two times, indicating benefits are not often realized immediately.

Figure 2.14: Impact of TPP on income of ASEAN, Pacific Alliance and the EAEU



Source: Petri, P., & Plummer, M. (2016) and APEC Secretariat, Policy Support Unit calculations

Note: Data for Cambodia; Laos; Myanmar; Colombia; Armenia; Belarus; Kazakhstan; and Kyrgyzstan was not available.

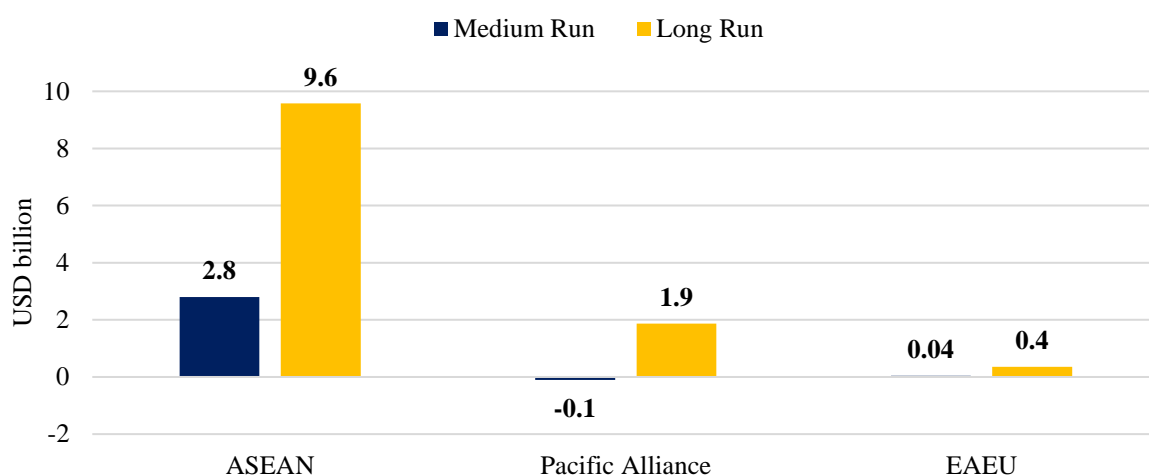
In addition, the removal of non-tariff barriers within the TPP has significant impact on ASEAN with gains increasing by USD 88 billion (Kawasaki, 2014). While the EAEU's benefits are small in comparison to the other groups, the inclusion of non-tariff barriers converts its losses to gains. For ASEAN, this increase is mostly explained by Malaysia; whereas for the Pacific Alliance, Mexico is the main economy contributing to these gains.

With regards to output, Viet Nam would explain the highest growth among ASEAN economies. However, under the CPTPP, Viet Nam's growth rate is estimated to fall. With the exception of Singapore which remains unaffected, this trend is observed for all other ASEAN members participating in TPP/CPTPP. While significant changes are noted in regional output, on a sectoral level, top sectors experience no changes between the TPP and CPTPP. For instance, despite a decline in the magnitude of output growth, 'Transport Equipment' continues to be Brunei Darussalam's top sector under the assumption that import tariffs are removed by other TPP members (Dasgupta & Mukhopadhyay, 2017).

Welfare

During the initial stages, the Pacific Alliance's welfare is expected to be negatively affected by the TPP (Figure 2.15). However, over time, this is expected to reverse with the group registering positive welfare gains of USD 1.9 billion. ASEAN's welfare is predicted to surge from USD 2.8 billion to USD 9.6 billion over the long run. While a similar trend is noted for the EAEU, the increase from USD 0.04 billion to USD 0.4 billion is much smaller.

²⁵ Russia is used as a proxy for the EAEU.

Figure 2.15: Impact of TPP on welfare of ASEAN, Pacific Alliance and the EAEU

Source: Gilbert, J., Furusawa, T., & Scollay, R. (2016) and APEC Secretariat, Policy Support Unit calculations
 Note: Data for Cambodia; Myanmar; Colombia; Armenia; Belarus; Kazakhstan; and Kyrgyzstan was not available.

Although an increase in welfare gains is expected for all ASEAN economies, the increase is more significant in Viet Nam and Malaysia (Dasgupta & Mukhopadhyay, 2017). Additionally, ASEAN members that are not TPP participants are not likely to benefit as they tend to be adversely affected by trade diversion and preference erosion effects (Gilbert, Furusawa & Scollay, 2016).

Trade

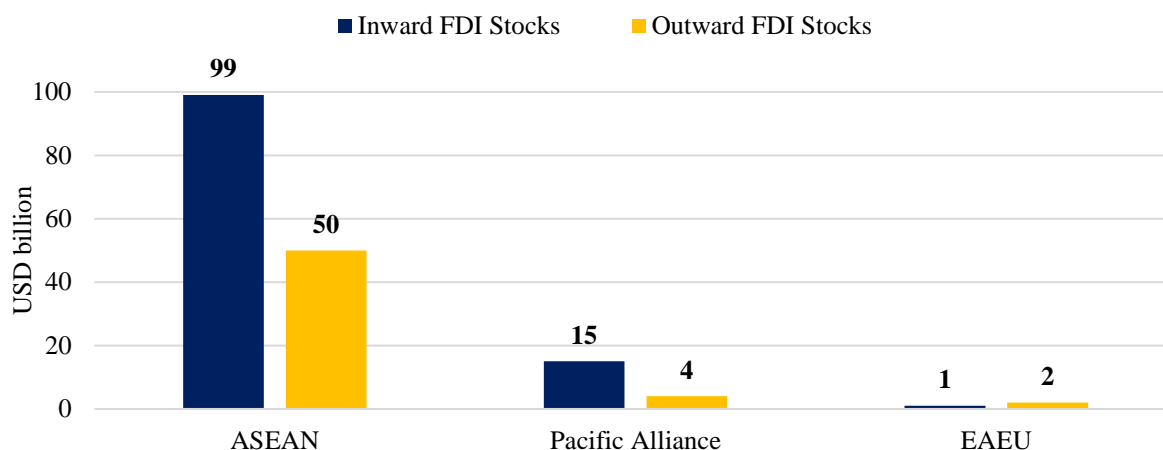
Under the TPP, Petri, Plummer, Urata & Zhai (2017) estimate export gains for ASEAN, Pacific Alliance and the EAEU to be approximately USD 225 billion, USD 55 billion and USD 5 billion, respectively. These values are expected to fall to USD 93 billion, USD 41 billion and USD 1 billion if CPTPP –and not the TPP– is implemented. Despite the lower increase in exports, economies belonging to these groups continue to benefit.

Estimates by other studies are found to be lower. For instance, while Alexander & Vladimir (2017) predict exports growth rates of member economies to reach highs of 0.11%, Russia's exports are expected to be unaffected. Similarly, estimates by Ciuriak, Xiao & Dadkhah (2017) find the Pacific Alliance to increase exports by USD 1.9 billion from the TPP and USD 2.7 billion from the CPTPP are lower than those predicted by Petri, Plummer, Urata & Zhai (2017).

For the case of imports, Ciuriak, Xiao & Dadkhah (2017) find the Pacific Alliance to increase by USD 2.2 billion with the TPP and USD 3.1 billion with the CPTPP.

Investment

Across regional groupings, with the exception of the EAEU, inward FDI stocks would increase more than outward FDI stocks with the implementation of TPP (Figure 2.16). ASEAN would register the largest net FDI increase (USD 49 billion) followed by the Pacific Alliance (USD 11 billion). The EAEU would change its net FDI stock by USD -1 billion.

Figure 2.16: Impact of TPP on inward and outward FDI stocks for ASEAN, Pacific Alliance and the EAEU

Source: Petri, P., & Plummer, M. (2016)

Note: Russia used as a proxy for the EAEU; Data for Colombia was not available.

2.4.3 IMPACT OF TRADE LIBERALIZATION THROUGH RCEP

While the RCEP trade agreement is yet to be finalized, several studies have simulated its effects based on different liberalization scenarios. In general, the benefits are found to be higher than those estimated for the TPP or CPTPP. The sections below provide an overview of its regional, individual APEC economy impact as well as within sub-groups.

Aggregate effect on APEC

GDP or Production Level

Benefits from the RCEP agreement to the APEC region are estimated to range from USD 204 billion to USD 747.9 billion (Table 2.6). The large range of estimates are likely due to the extent of liberalization considered within each study. For instance, while some studies only considered the effect of tariff liberalization, Kawasaki (2014) considers the depth of the agreement with the elimination of non-tariff barriers (NTB). Including NTB within the liberalization package will almost double income gains for all APEC member economies, regardless of the stage of development.

For APEC members in RCEP, income gains are expected to range from USD 161.7 billion to USD 746.5 billion. Given that several RCEP members are not developed economies it is no surprise that approximately 68% to 70% are channeled towards developing economies.

Table 2.6: Impact of RCEP on the APEC region's income (in USD billion)

	Cheong & Tongzon (2013)	Kawasaki (2014) -Tariffs only	Kawasaki (2014) -Tariffs & Non- Tariff Measures	Petri, Plummer, Urata & Zhai (2017)
APEC	-	359.1	747.9	204.0
APEC Developed	-	104.2	221.9	64.0
APEC Developing	-	254.9	526.1	140.0
RCEP APEC members	161.7	402.2	746.5	203.0

Source: Cheong, I., & Tongzon, J. (2013); Kawasaki, K. (2014); Petri, P., Plummer, M., Urata, S., & Zhai, F. (2017); and APEC Secretariat, Policy Support Unit calculations

Note: Data for Brunei Darussalam; Philippines; and Thailand was not available in Cheong, I., & Tongzon, J. (2013). Data for Brunei Darussalam; and Papua New Guinea was not available in Kawasaki, K. (2014). Data for Papua New Guinea for Petri, P., Plummer, M., Urata, S., & Zhai, F. (2017) was not available.

In comparison to the CPTPP, Ji, Rana, Chia, & Chang (2018) estimate income gained from RCEP to be higher for all economies except New Zealand. While some of this is attributed to the larger number of members within RCEP, other reasons include tariff rates of its participants being higher than members within TPP/CPTPP and the absence of trade agreements between most of its largest economies (e.g. China, Japan, India and Korea). Furthermore, much of the trade within the TPP/CPTPP are already covered by free trade agreements with particularly large trade flows within North America (Petri, Plummer & Zhai, 2011).

Welfare

As a whole, Gilbert, Furusawa & Scollay (2016) and Lee & Itakura (2017) estimate regional welfare gains to range between USD 130.2 billion and USD 331.3 billion. Additionally, both studies predict that most benefits will be directed towards the region's developing economies with gains predicted to range from a minimum of USD 79.8 billion to a maximum of USD 271.5 billion. The gains by APEC members in RCEP are estimated to be much larger than the region's overall gain. For instance, compared to the region, Gilbert, Furusawa & Scollay (2016) estimate RCEP's APEC participants to gain an additional USD 9.3 billion.

On decomposing welfare gains into its terms of trade and capital accumulation components, the latter dominates with a value of USD 78.1 billion. In terms of development level, similar trends are identified with the region's developed economies having capital accumulation gains of USD 20.4 billion, compared to terms of trade gains of USD 14.8 billion. APEC developing economies would experience the capital accumulation gains of USD 57.7 billion and terms of trade losses equivalent to USD -8.2 billion.

Trade

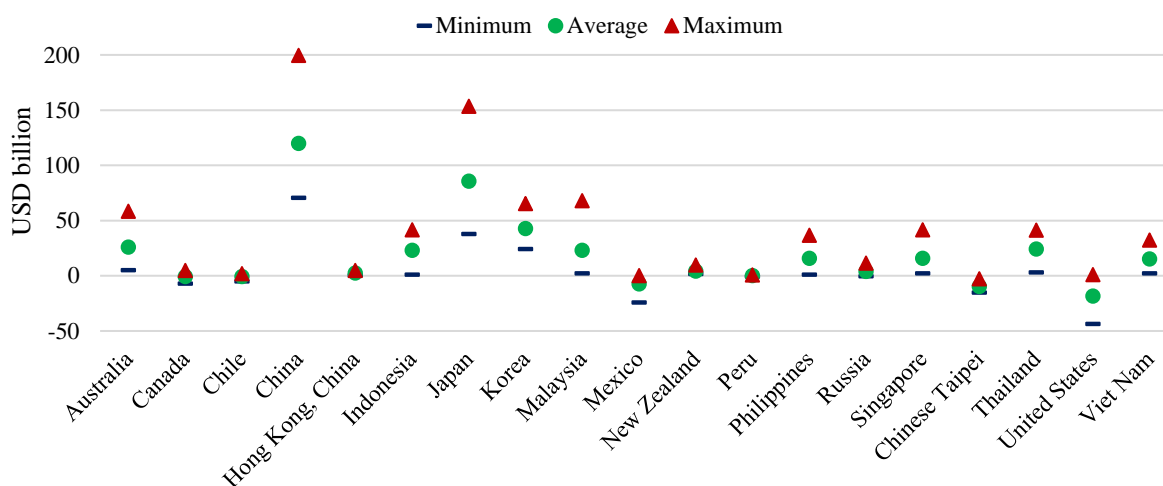
Petri, Plummer, Urata & Zhai (2017) estimates an increase in APEC exports to increase by USD 548 billion, out of which USD 393 billion is to be channeled towards the region's developing economies. APEC members in RCEP boast a larger increase in exports (USD 556 billion) as compared to the RCEP region (USD 548 billion). None of the reviewed papers analyzed the impact of liberalization through RCEP on imports in the APEC region.

Effect on individual APEC economies

GDP/Production Level

Figure 2.17 illustrates that while average changes in income range from USD -18.6 billion to USD 119.7 billion, gains for almost all APEC economies are positive. On average, estimates show the largest benefactor to be China, followed by Japan and Korea with gains totaling USD 119.7 billion, USD 85.6 and USD 42.6 billion respectively. Cheong & Tongzon (2013) observe that positive gains from RCEP are due to the activation of the East Asian production network as well as the creation of a supply chain mechanism facilitating trade in the region. In general, gains tend to be the lowest for those APEC members not part of the current RCEP negotiations.

Figure 2.17: Impact of RCEP on income of APEC economies

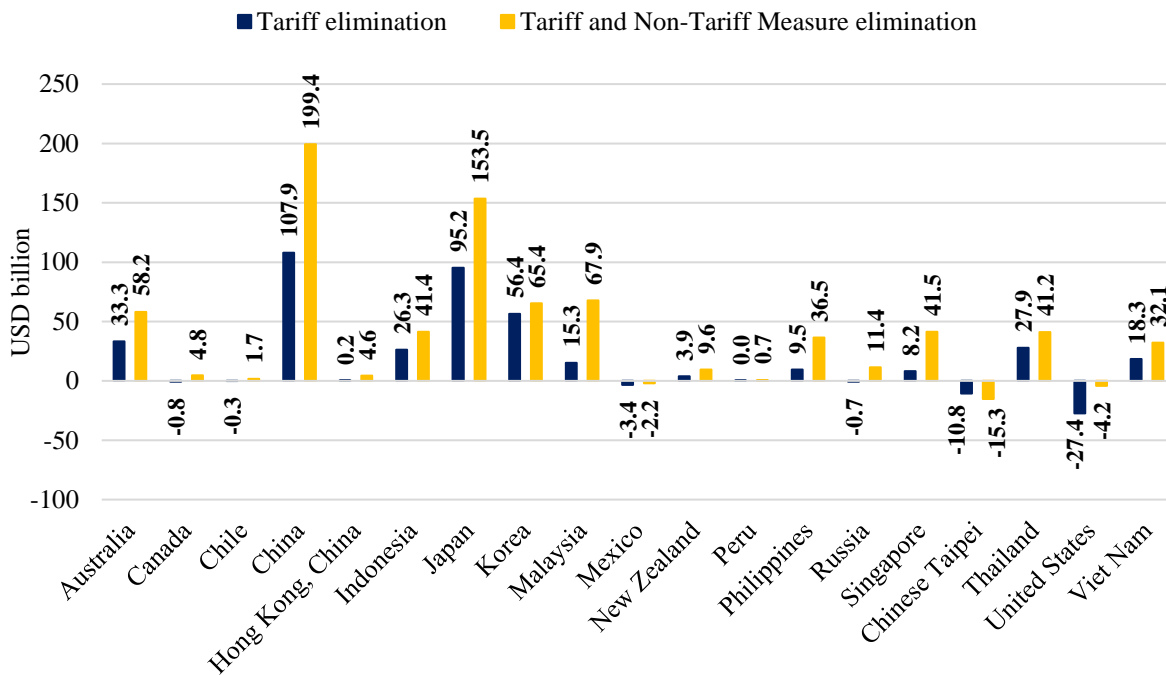


Source: Cheong, I., & Tongzon, J. (2013); Kawasaki, K. (2014); Petri, P., Plummer, M., Urata, S., & Zhai, F. (2017); and APEC Secretariat, Policy Support Unit calculations

Note: Data for Brunei Darussalam and Papua New Guinea was not available.

Kawasaki (2014) identifies significant benefits of including non-tariff barriers within RCEP's liberalization (Figure 2.18). For instance, with tariff elimination, income changes in APEC economies are predicted to be between USD -27.4 billion and USD 107.9 billion. However, should non-tariff barriers be reduced as well, these changes are estimated to increase and be around USD -15.3 billion and USD 199.4 billion. Most of the gains earned by ASEAN economies have been through their own reduction in tariff and non-tariff measures; while gains of other economies such as Australia, Japan, Korea and New Zealand have been mainly through reductions made by other RCEP economies.

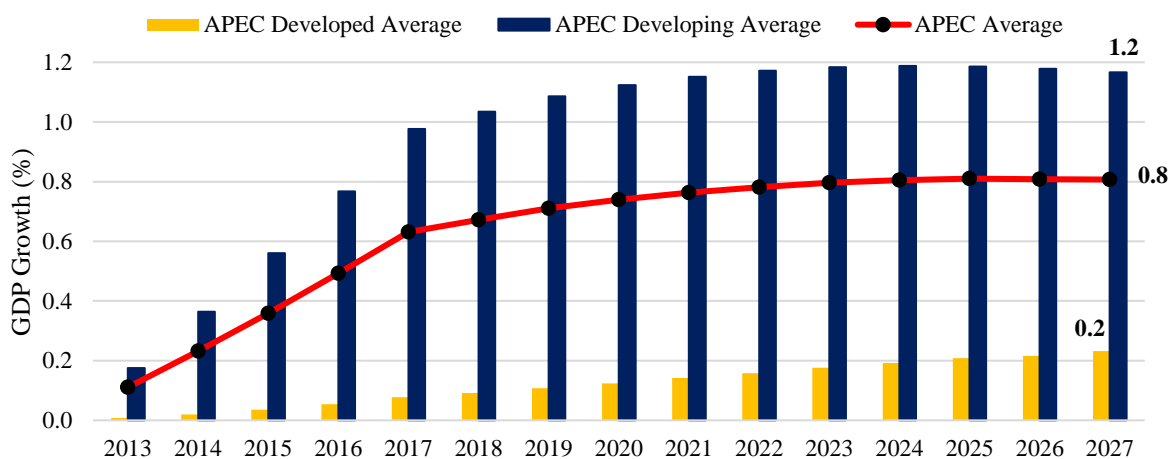
Figure 2.18: Impact of depth of RCEP on income of APEC economies



Source: Kawasaki, K. (2014) and APEC Secretariat, Policy Support Unit calculations
 Note: Data for Brunei Darussalam and Papua New Guinea was not available.

In a study conducted by Cheong & Tongzon (2013), average GDP growth was expected to increase year on year for the region had RCEP been implemented in 2013 (Figure 2.19). Furthermore, APEC’s developing economies would have experienced significantly higher average GDP growth rates as compared to developed ones.

Figure 2.19: Dynamic impact of RCEP on GDP growth



Source: Cheong, I., & Tongzon, J. (2013)
 Note: Data for Brunei Darussalam; Hong Kong, China; Indonesia; Papua New Guinea; Philippines; Russia; Chinese Taipei; and Thailand was not available.

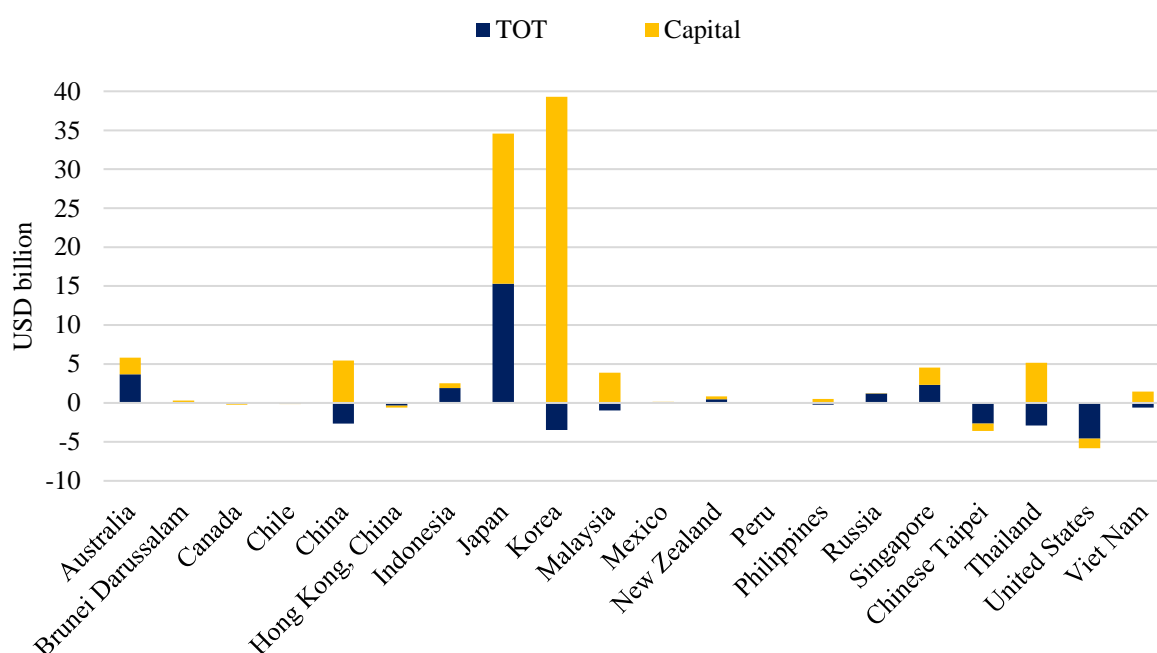
Welfare

Individual economy average welfare changes are estimated to range between USD -8.5 billion and USD 42.9 billion. In absolute terms, the largest increase in welfare would be in China, Japan and Korea (Lee & Itakura, 2017). Gilbert (2013) estimates Viet Nam to experience the

largest increase and attributes this to improvements in its terms of trade. Additionally, Lee & Itakura (2014) predicts Chinese Taipei to experience a welfare loss from RCEP. This is likely due to a decrease in its terms of trade, as it is not participating in RCEP negotiations, but at the same time, it keeps strong trade relationships with RCEP parties.

With the implementation of RCEP, Lee & Itakura (2017) find the terms of trade of economies with low initial tariffs to improve, whereas those with higher initial tariffs often deteriorate. This is illustrated within Figure 2.20, which shows the terms of trade of economies like Singapore and Australia improving, while the opposite holds true for economies such as Thailand and Viet Nam. Additionally, the increase in capital accumulation effect of RCEP is seen to dominate the change in terms of trade effects. This is particularly obvious in Japan and Korea which are observed to boast the largest proportion of capital accumulation effects.

Figure 2.20: Impact of RCEP on the welfare attributed to terms of trade and Capital accumulation



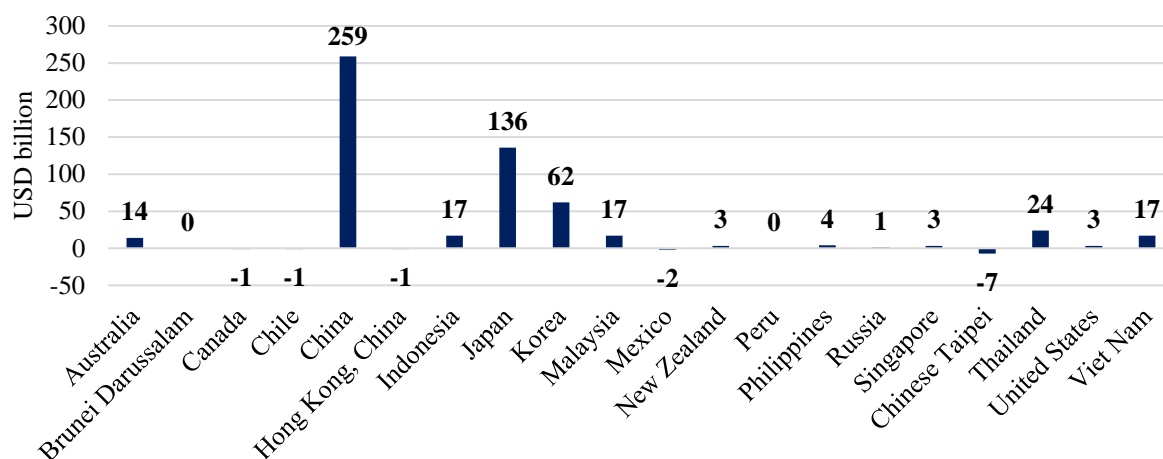
Source: Gilbert, J., Furusawa, T., & Scollay, R. (2016) and APEC Secretariat, Policy Support Unit calculations

Note: Data for Papua New Guinea was not available.

Trade

Export gains in the region are expected to range from a contraction of USD 7 billion in Chinese Taipei to an expansion of USD 259 billion in China (Figure 2.21). In general, almost all non-RCEP members, except the United States and Russia, would experience a contraction in exports due to possible trade diversion effects from RCEP.

Figure 2.21: Impact of RCEP on exports of the APEC region



Source: Petri, P., Plummer, M., Urata, S., & Zhai, F. (2017) and APEC Secretariat, Policy Support Unit calculations
 Note: Data for Papua New Guinea was not available.

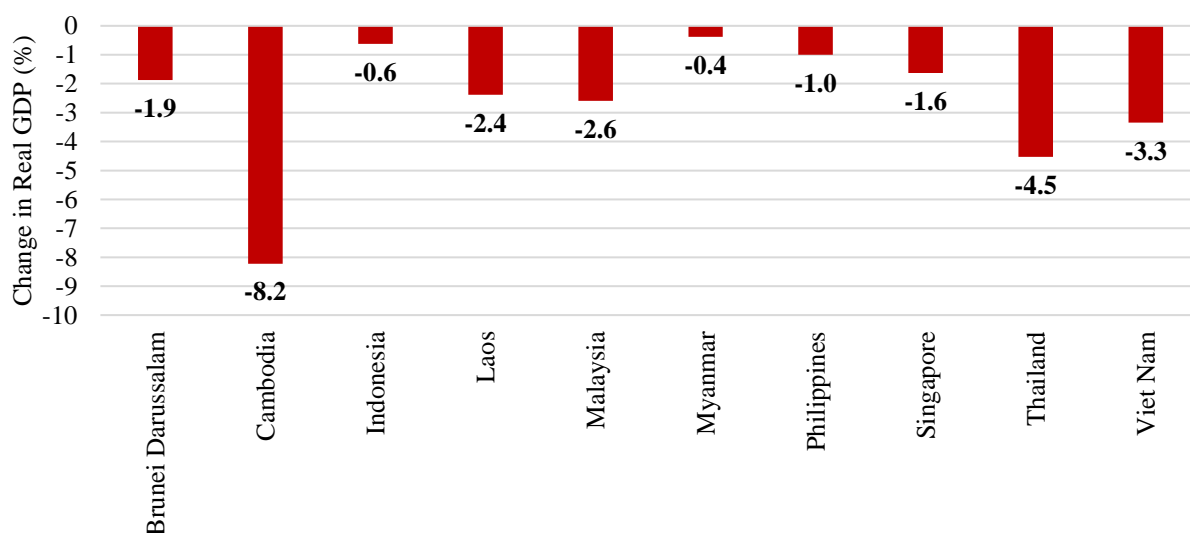
With regards to changes in imports, APEC’s developed economies are estimated to range between -0.7% in United States and 5.5% in Australia (Rahman & Ara, 2015). Details on the effect on imports for APEC’s developing economies were not available within reviewed papers.

Effect on sub-regions/groups close to APEC

GDP or Production Level

For the case of the Pacific Alliance, studies predict that changes in income should be between USD -30.1 billion and USD 0.16 billion. Using Russia as a gauge for the EAEU, Kawasaki (2014) estimates changes in GDP to range from USD -0.7 billion to USD 11.4 billion. Additionally, gains are positive when RCEP undergoes more extensive liberalization efforts (e.g. removal of non-tariff barriers). While for ASEAN, Rana, Chia & Chang (2018) find the impact of percentage change in GDP in ASEAN to range between 0.4% in Myanmar and 8.2% in Cambodia (Figure 2.22). On the other hand, the change in GDP for ASEAN members in APEC range from a low of 0.6% to a high of 4.5%.

Figure 2.22: Impact of RCEP on ASEAN GDP



Source: Ji, X., Rana, P., Chia, W., & Tai Li, C. (2018) and APEC Secretariat, Policy Support Unit calculations

On the whole, ASEAN expects a significantly larger increase in income gains as compared to the Pacific Alliance and the EAEU. This is not surprising as none of the EAEU or Pacific Alliance members are participants to the RCEP.

Welfare

On the welfare front, Gilbert, Furusawa & Scollay (2016) estimate gains for ASEAN, EAEU and Pacific Alliance to be USD 19.6 billion, USD 2.5 billion, and USD 0.4 billion respectively. Conversely, Lee & Itakura (2017) predict a welfare change of USD 50.2 billion for ASEAN, USD -0.5 billion for Pacific Alliance and USD -0.4 billion for the EAEU. ASEAN's gain is predicted to be even lower in Gilbert (2013) which estimates a value ranging between USD 4.2 billion and USD 5.9 billion.

Additionally, for ASEAN and the Pacific Alliance, the capital accumulation effect tends to dominate the terms of trade effect. This effect is found to be highest in Thailand for ASEAN and Mexico for the Pacific Alliance. On the other hand, the EAEU's terms of trade effect was found to be larger than the capital accumulation effect.

Across time, RCEP is expected to result in ASEAN's welfare increasing from USD 5.9 billion in the medium run to USD 4.2 billion in the long run. While Indonesia is expected to be the main driver of medium term gains with a value of USD 1.9 billion, Malaysia is largely responsible for the long run gains estimated (Gilbert, 2013).

Trade

Petri, Plummer, Urata & Zhai (2017) estimate both ASEAN's and EAEU's exports to expand by USD 86 billion and USD 1 billion respectively. Whereas for the Pacific Alliance, exports are estimated to contract by USD 3 billion. This is likely a result of the trade diversion effect created by the RCEP and the fact that none of the Pacific Alliance and the EAEU members are participants to the RCEP. In terms of imports, ASEAN is estimated to grow by 2.9% (Rahman & Ara, 2015). None of the reviewed papers analyzed the impact of liberalization through RCEP on imports of the Pacific Alliance and the EAEU.

2.5 OBSERVATIONS

APEC as a whole is seen to perform relatively well in all agreements evaluated in terms of income, trade, welfare and investment. However, studies have also predicted a diverse range of results for each scenario.

In general, the FTAAP is anticipated to increase income gains for the APEC region as a whole and across all economies. A similar trend is observed in terms of welfare. Trade would also increase for the APEC region. Additionally, FTAAP is found to be beneficial even for regional groups such as ASEAN, the Pacific Alliance and the EAEU with all three expecting positive gains in all categories analyzed.

For the TPP and CPTPP scenarios, income gained by the APEC region from these schemes is predicted to be in the range of USD 97 billion to USD 438 billion. Benefits are positive from the regional perspective in terms of welfare, trade and investments as well, but values are more varied at the economy level. For instance, being left out of TPP and CPTPP may have detrimental effects in terms of falling exports and declining welfare.

The RCEP scenario is estimated to boast the largest gains among all the FTAAP pathways analyzed for the APEC region. Those studies analyzing tariff liberalization scenarios under

both TPP and RCEP found that income gains are higher with RCEP, in part explained by the larger market size of RCEP in comparison to those of TPP and CPTPP. The distribution of gains is found to be larger even under this scenario, with developing economies benefiting the most. However, APEC economies left out of RCEP may experience a reduction in their exports, welfare and production.

No studies were found analyzing the impact of those scenarios on employment at the regional level. Nevertheless, evidence by some studies in individual economies show a positive overall impact on employment or labor income for those economies participating in these integration schemes. In addition, labor and production are closely linked and would improve under those scenarios, particularly for labor intensive sectors in developing economies and skilled labor sectors in industrialized economies.

As seen, a main finding in the different scenarios analyzed is that APEC economies excluded from any of the integration processes will benefit less or may even experience a negative economic impact in certain areas. While those participating in TPP/CPTPP will benefit from those agreements, those out of TPP/CPTPP may not. Similarly, if RCEP negotiations are finalized and an agreement is implemented, those out of RCEP may not benefit.

TPP, CPTPP and RCEP are all possible pathways towards the FTAAP. Among these pathways, studies find either the RCEP or TPP pathway to provide the largest benefits for APEC as a whole. However, on closer evaluation of economies and sectors, it is clear that not all of them will enjoy the same level of benefits due to a myriad of factors, such as the economic structure, availability of production factors, market size, development levels and network of RTA/FTA partners, among others.

While studies show some economies participating in TPP, CPTPP or RCEP may lose in terms of trade, through a decline in exports, other economies will catch up by starting to enjoy same preferential access to markets as those that had already been subject to preferential access due to bilateral trade agreements implemented in the past; those participating economies will not experience a decline in welfare, as the capital accumulation effect (i.e. increasing assets from investments and profits) after the implementation of TPP, CPTPP or RCEP would offset the negative effect by the reduced terms of trade.

3 MARKET ACCESS COMMITMENTS WITHIN THE CPTPP

3.1 INTRODUCTION

This section aims to have a better understanding of the market access commitments of potential FTAAP pathways. Among the pathways named in the Collective Strategic Study on Issues Related to the Realization of FTAAP, the CPTPP is the only negotiation concluded as of May 2019. This section will analyze those market access commitments for goods agreed by the CPTPP participating parties.

As background, the CPTPP agreement was signed by eleven economies²⁶ on 8 March 2018 and was later enforced on 30 December 2018 by seven economies²⁷. This report has been structured to first provide an overview of the general features of the CPTPP tariff liberalization schedule including the number of tariff lines, base tariff rates, and staging categories, followed by an analysis of the degree of liberalization agreed upon including full liberalization, partial liberalization and exclusions.

3.2 RATIONALE

The CPTPP is the largest regional trade agreement of its kind that has brought together eleven economies across the Asia-Pacific with members accounting for 14% of the global economy (Ministry of Trade and Investment Singapore, 2019). Given its strong commitments towards removing tariffs on almost 95% tariff lines, tariffs in the APEC region has been reduced considerably (Rana & Ji, 2019).

While several studies have evaluated the potential economic impact of the agreement (as consolidated in component 2 of this study) on members and the rest of the world, there has yet to be a comprehensive study on the extent of improved market access provided to economies. In response, this study carries out a tariff line analysis on the agreed commitments and quantifies the depth of the tariff liberalization schedules for each CPTPP member.

3.3 MARKET ACCESS COMMITMENTS

3.3.1 OVERVIEW OF CPTPP TARIFF LIBERALIZATION SCHEDULES

This section provides an overview of the CPTPP tariff liberalization schedule for each of its members. An evaluation of these schedules provides insights into the breadth of liberalization commitments and their likely impact. It is important to note that the tariff liberalization schedules have been agreed using domestic HS product tariff lines in each CPTPP member at the 8 or 10-digit level. While HS 6-digit codes (i.e. product sub-headings) are harmonized across economies, those beyond 6-digits (i.e. product tariff lines) are not. As such, the total number of tariff lines evaluated in this study are different across economies.

²⁶ Australia; Brunei Darussalam; Canada; Chile; Japan; Malaysia; Mexico; Peru; New Zealand; Singapore; and Viet Nam.

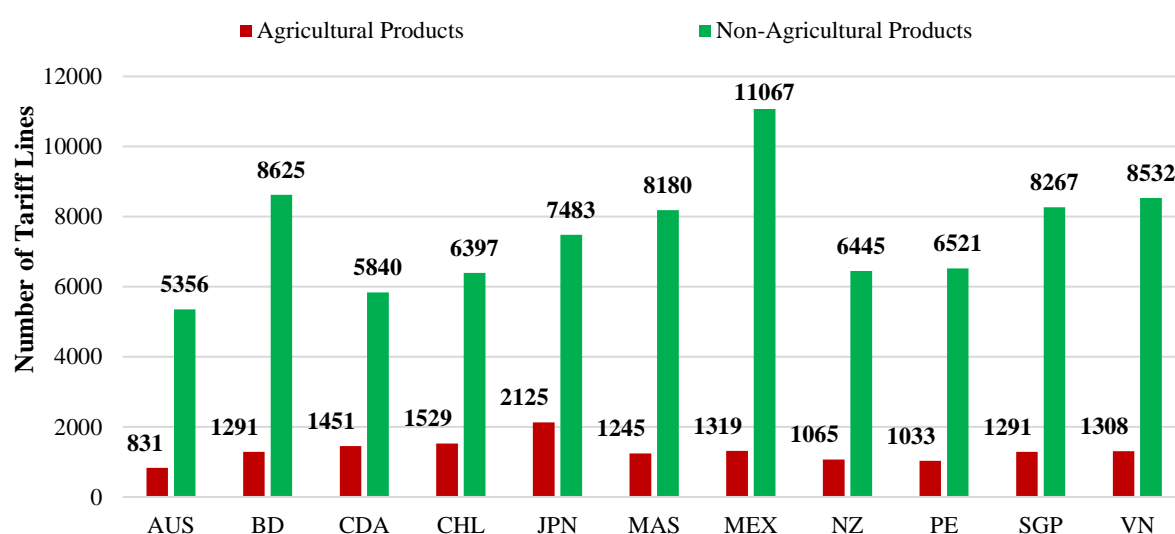
²⁷ As of 14 January 2019.

In addition, noting that international trade statistics at the bilateral level are only harmonized at the HS 6-digit level, it has not been possible to conduct an analysis of the trade flows subject to each staging category agreed in CPTPP, as the tariff liberalization schedule for every single product has only been agreed at a more disaggregated level (HS 8 or 10-digit level).

Tariff Lines

The 11 members of CPTPP negotiated a total of 97,201 tariff lines, out of which 14,488 belong to the agriculture sector and 82,713 to non-agriculture sectors. Non-agricultural tariff lines accounted for around 78% to 89% of the total tariff lines in each CPTPP member (Figure 3.1). Japan has the largest number of agricultural tariff lines, while Mexico has the largest number for non-agricultural tariff lines.

Figure 3.1: Number of Tariff Lines for Agriculture and Non-Agriculture Products



Source: CPTPP Legal Text, Annex 2-D; APEC Secretariat, Policy Support Unit Calculations

Base Tariffs

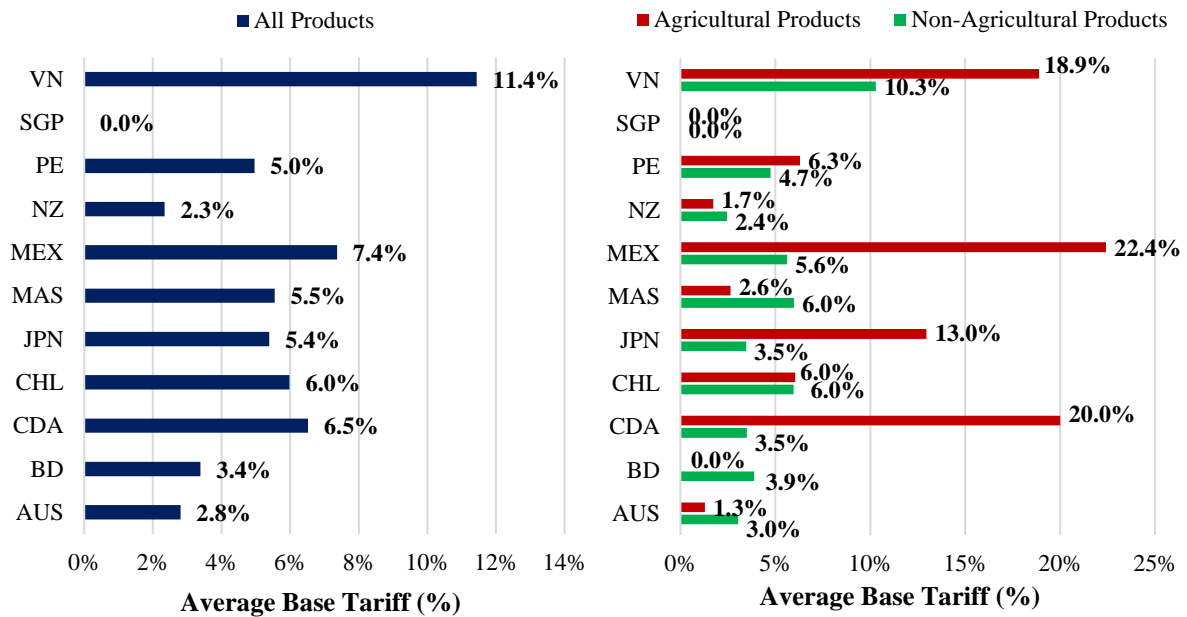
Base tariffs represents the MFN tariff rates in force prior to an agreement's implementation. It provides an indication of the level of protection member economies have put in place.

As a whole, average base tariffs for each member is varied and ranges from 0.0% to 11.4% (Figure 3.2). Different development levels, production structures, strategic interests and sensitive matters are some of the factors that explain these differences in tariff levels across CPTPP members. For example: while Singapore has adopted a free and open goods trade policy and has eliminated tariffs completely in both agricultural and non-agricultural products, Viet Nam's highest average base tariff was largely driven by high tariff rates in agriculture.

Chile and Singapore are the only CPTPP members with no deviation between their average agricultural and non-agricultural base tariffs. The remaining CPTPP members registered unequal base tariffs across products with five of them experiencing higher average base tariffs in agricultural products.

In general, products with highest base tariffs are different across economies, but it is common across many CPTPP members to find these products in sectors such as textiles and apparel, beverages and tobacco.

Figure 3.2: Average base tariffs (%) for CPTPP member economies



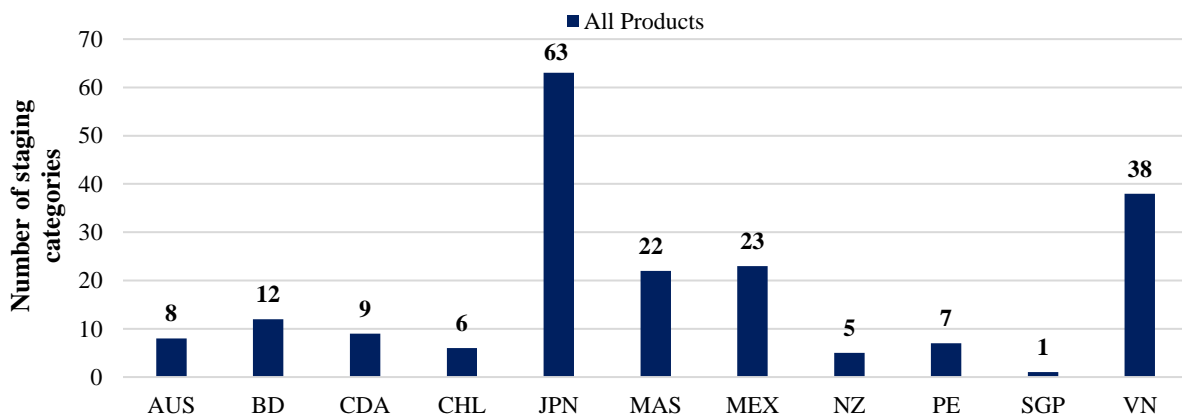
Source: CPTPP Legal Text, Annex 2-D; APEC Secretariat, Policy Support Unit Calculations

Staging Categories

Staging categories refers to the modalities that CPTPP member economies have agreed to phase out their respective tariffs. As individual economies negotiate their own time frames and various other considerations to reduce or eliminate tariffs taking into account different sensitivities and interests, the number and types of staging categories differ across economies in each trade negotiation (Estevadeordal, 1999). While staging categories are useful during trade negotiations, agreeing on a large number of staging categories could be administratively cumbersome and costly to manage during the implementation of trade agreements.

The CPTPP agreement includes a total of 194 staging categories across eleven economies. There is significant disparity among members with regards to the number of staging categories, ranging from just one by Singapore to 63 by Japan (Figure 3.3).

Figure 3.3: Number of staging categories for all products

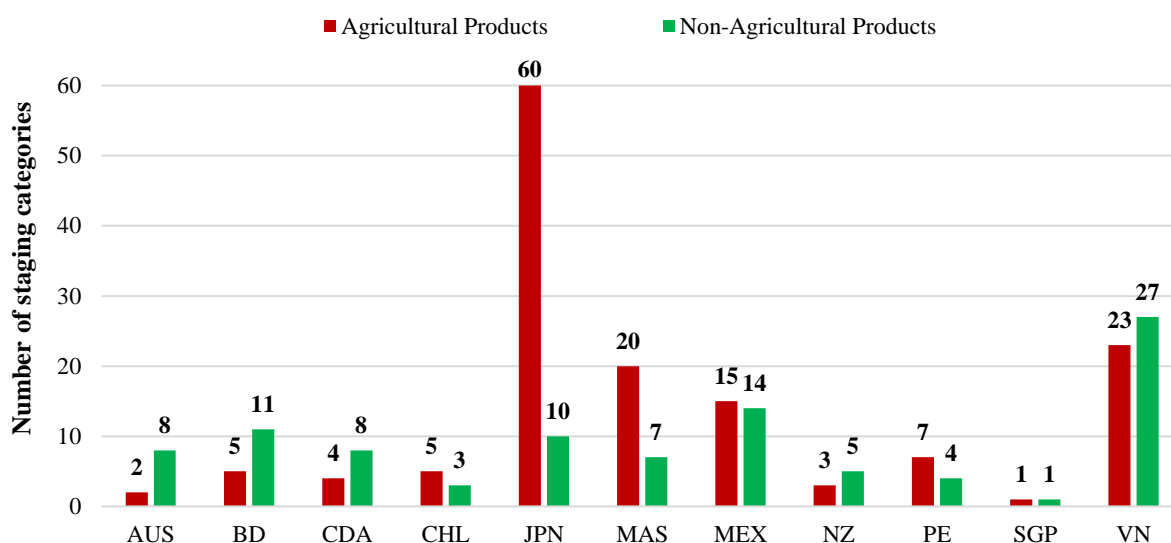


Source: CPTPP Legal Text, Annex 2-D; APEC Secretariat, Policy Support Unit Calculations

In general, while agricultural products are subject to more staging categories than non-agricultural products in the CPTPP, the situation is different at the individual economy level (Figure 3.4). On the one hand, Chile; Japan; Malaysia; Mexico and Peru include more staging categories in their tariff liberalization schedules for agricultural products. On the other hand, the opposite occurs with Australia; Brunei Darussalam; Canada; New Zealand and Viet Nam, as non-agricultural products are distributed across a greater number of staging categories.

At the individual economy level, Japan and Viet Nam register the largest number of staging categories for agricultural and non-agricultural products, respectively.

Figure 3.4: Number of staging categories for agriculture and non-agriculture products

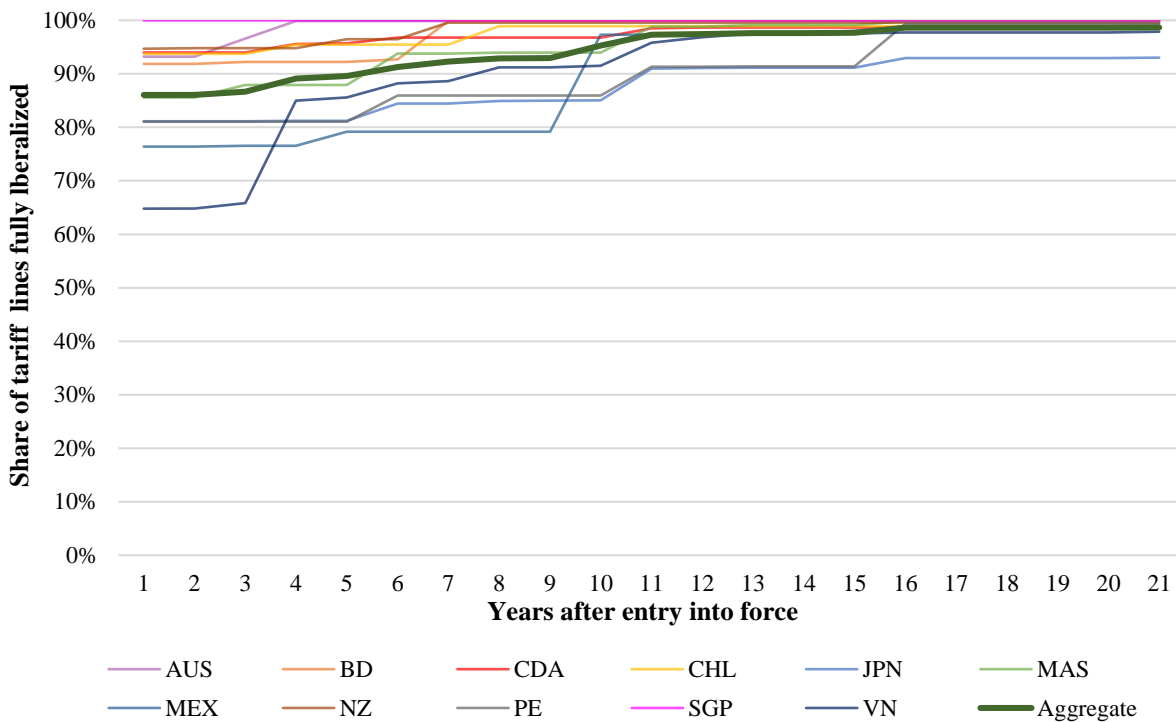


Source: CPTPP Legal Text, Annex 2-D; APEC Secretariat, Policy Support Unit Calculations

3.3.2 EXTENT OF TARIFF LIBERALIZATION

The market access commitments agreed at CPTPP can be categorized into four approaches: 1) products are duty-free immediately after the CPTPP is put in force by a signatory party; 2) products are subject to longer phase-out periods up to 21 years; 3) products subject to partial liberalization only; and 4) products excluded from the tariff liberalization process. Figure 3.5 the liberalization progress from year 1 to 21 by showing the percentage of duty free tariff lines offered by each CPTPP member. Overall, the majority of the products will be fully liberalized by year 11 for most CPTPP members, even though a small amount of tariff lines will eliminate tariffs in longer phase out periods.

Figure 3.5: Share of Duty-Free Tariff Lines by Each Year of CPTPP Agreement

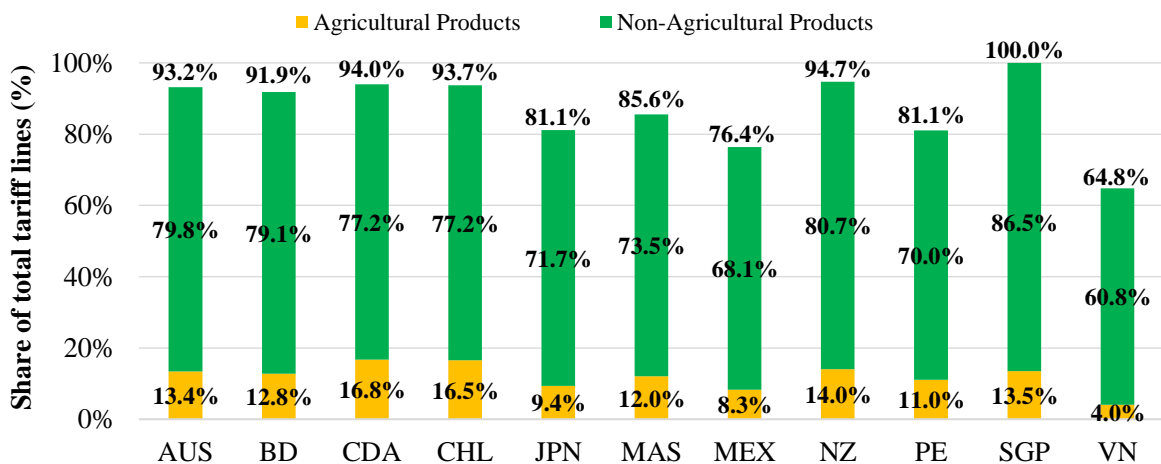


Source: CPTPP Legal Text, Annex 2-D; APEC Secretariat, Policy Support Unit Calculations

Immediate Duty-Free Tariff Liberalization

Upon entry into force of the CPTPP, tariffs on a vast majority of products (86.1% of the tariff lines from the 11 CPTPP parties) are immediately duty-free, with Singapore committing to immediate 100% tariff elimination for all products and five other CPTPP members eliminating tariffs on over 90% tariff lines (i.e. Australia; Brunei Darussalam; Canada; Chile and New Zealand), as shown in Figure 3.6. Non-agriculture products take up a large share, ranging across CPTPP members from 60.8% to 86.5% of their total tariff lines, while agriculture products with immediate duty-free commitments account for from 4.0% to 16.8% of total tariff lines across CPTPP members.

Figure 3.6: Share of duty-free tariff lines at CPTPP date of entry into force



Source: CPTPP Legal Text, Annex 2-D; APEC Secretariat, Policy Support Unit Calculations

The CPTPP tariff liberalization schedules shows that certain product categories are enjoying duty-free access since the date of entry into force. By looking at the HS chapters²⁸ in each of the tariff liberalization schedules, it is possible to find that each CPTPP member has fully liberalized several product categories upon CPTPP's entry into force.

Table 3.1 shows the number of HS chapters given full immediate duty-free treatment by each CPTPP members under this agreement and compares it with the number of chapters that are fully liberalized by each CPTPP member at the multilateral level through their WTO bound tariff schedules. Out of 96 HS existing chapters, seven CPTPP members are offering duty-free entry in more than half of the chapters immediately. Particularly, one of them, Singapore offers zero-tariff duties from start for all HS chapters.

In terms of tariff liberalization, the vast number of HS chapters fully liberalized by each CPTPP member reflects significant progress in tariff liberalization in comparison to the progress achieved in the multilateral negotiations in WTO. In contrast, under WTO bound tariff schedules, five CPTPP members did not offer any whole chapter duty-free and the other six members offered very few duty-free chapters, ranging from 3 to 13 chapters only.

Table 3.1: HS Chapters with Full Immediate Liberalization under CPTPP vs. HS Chapters Duty-Free under WTO Bound Tariff Schedules

CPTPP Economies	Number of HS Chapters duty-free from start under CPTPP	Number of HS chapters duty-free under WTO bound tariffs
AUS	66	3
BD	76	0
CDA	74	7
CHL	59	0
JPN	52	13
MAS	51	0
MEX	25	0
NZ	47	9
PE	38	0
SGP	96	3
VN	41	3

Source: CPTPP Legal Text, Annex 2-D; WTO Database; APEC Secretariat, Policy Support Unit Calculations

The analysis of the HS chapters in each CPTPP member also shows that 10 out of 96 HS chapters are offered duty-free across all CPTPP members since the date of entry into force. This means that products belonging to any of these 10 HS chapters can enter duty-free across all CPTPP signatory parties that have put this agreement into force, as long as they meet the agreed rules of origin and other administrative formalities. Most of these products are related to natural resources, intermediate and capital goods (Table 3.2).

²⁸ The Harmonized System (HS) is a nomenclature that is used to classify products. The more the number of digits included in an HS code, the more specific the product is. HS chapters are denoted by a 2-digit code and refer to a product category (e.g. HS code 29 refers to organic chemicals). Chapters are comprised by headings, HS codes at a 4-digit level which refer to groups of products within the chapter (e.g. HS code 2941 refers to antibiotics), and each heading is comprised by sub-headings, HS codes at a 6-digit level, and refer to a particular type of product (e.g. HS code 294110 is related to penicillin antibiotics and products thereof).

Table 3.2: List of HS Chapters with Full Immediate Liberalization Across All CPTPP Parties

HS CHAPTER	DESCRIPTION
05	Products of animal origin, not elsewhere specified or included.
06	Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage.
26	Ores, slag and ash
31	Fertilizers
45	Cork and articles of cork.
46	Manufactures of straw, of esparto or of other plaiting materials; basketware and wickerwork.
47	Pulp of wood or of other fibrous cellulosic material; recovered (waste and scrap) paper or paperboard.
86	Railway or tramway locomotives, rolling-stock and parts thereof; railway or tramway track fixtures and fittings and parts thereof; mechanical (including electro-mechanical) traffic signalling equipment of all kinds.
88	Aircraft, spacecraft, and parts thereof.
97	Works of art, collectors' pieces and antiques.

Source: CPTPP Legal Text, Annex 2-D; APEC Secretariat, Policy Support Unit Calculations

The CPTPP tariff liberalization schedules also allow for the comparison of the percentage of tariff lines with base tariff equal to zero vis-à-vis the percentage of tariff lines that are offered duty-free after CPTPP's date of entry into force. Since the share of tariff lines with base rate equals to zero shows the amount of products that are already enjoying duty-free market access prior to joining the CPTPP, comparing this number with the share of products subject to immediate duty-free access under CPTPP by each party gives us some clues on the market access gains and the level of commitments made during the CPTPP negotiation. For instance, as shown in Table 3.3, only 0.4% of the total tariff lines are set as duty free by Chile currently, while upon entry into force of CPTPP, Chile will remove tariffs on 93.7% of total lines.

In general, substantial progress has been made in liberalizing trade in goods by all parties through CPTPP. Nevertheless, such efforts are not uniform across economies and sectors (Table 3.3). At the aggregate level, 54.1% of the tariff lines are already enjoying a base tariff equal to 0% and 86.1% of the tariff lines are going to be duty-free from the date of entry into force. In terms of extra effort to liberalize trade, this means that an additional 32% of the tariff lines are fully liberalized from the start, thanks to the CPTPP negotiations.

Within agriculture and non-agriculture sectors, the additional efforts to fully liberalize in terms of percentage of tariff lines are equal to 31.9% and 32%, respectively, which leads to duty-free access of 77.8% of all agriculture tariff lines, and 87.5% of all non-agriculture tariff lines upon entering into force of the CPTPP (Table 3.3).

Also, Table 3.3 provides an idea of the existing sensitivities in the CPTPP negotiation. Regarding the agricultural sector, for Japan and Viet Nam, the percentage of those products entering duty-free in their markets from the date of entry into force is below 50%, low in comparison to the rest of CPTPP members. For the non-agricultural sector, Malaysia, Mexico, Peru and Viet Nam are the CPTPP members giving immediate duty-free access to less than 90% of those products.

Table 3.3: Percentage of Tariff Lines with Base Tariff = 0% vis-a-vis Percentage of Tariff Lines with Duty-Free Access on CPTPP's Date of Entry into Force**ALL PRODUCTS**

CPTPP Economies	Base Tariff = 0% (share of total tariff lines)	Duty Free on Day 1 (share of total tariff lines)	Change as Share of Total Tariff Line
AUS	47.5%	93.2%	45.7%
BD	75.8%	91.9%	16.0%
CDA	57.6%	94.0%	36.4%
CHL	0.4%	93.7%	93.3%
JPN	38.6%	81.1%	42.5%
MAS	64.7%	85.6%	20.9%
MEX	55.0%	76.4%	21.4%
NZ	58.3%	94.7%	36.3%
PE	54.2%	81.1%	26.8%
SGP	99.9%	100.0%	0.1%
VN	32.5%	64.8%	32.3%
Aggregate	54.1%	86.1%	32.0%

AGRICULTURAL PRODUCTS

CPTPP Economies	Base Tariff = 0% (share of total agricultural lines)	Duty Free on Day 1 (share of total agricultural lines)	Change as Share of Total Agriculture Tariff Line
AUS	73.4%	99.9%	26.5%
BD	97.8%	98.4%	0.6%
CDA	42.6%	84.3%	41.7%
CHL	0.0%	85.7%	85.7%
JPN	23.7%	42.5%	18.9%
MAS	71.3%	91.2%	19.8%
MEX	19.6%	77.7%	58.1%
NZ	64.9%	98.8%	33.9%
PE	34.3%	80.7%	46.5%
SGP	99.5%	100.0%	0.5%
VN	13.7%	30.4%	16.7%
Aggregate	45.9%	77.8%	31.9%

NON-AGRICULTURAL PRODUCTS

CPTPP Economies	Base Tariff = 0% (share of total non-agricultural lines)	Duty Free on Day 1 (share of total non-agricultural lines)	Change as Share of Total Non- Agriculture Tariff Line
AUS	43.5%	92.2%	48.7%
BD	72.5%	90.9%	18.3%
CDA	61.3%	96.4%	35.1%
CHL	0.5%	95.7%	95.1%
JPN	42.9%	92.1%	49.2%
MAS	63.7%	84.7%	21.0%
MEX	59.2%	76.2%	17.0%
NZ	57.3%	94.0%	36.7%
PE	57.4%	81.1%	23.7%
SGP	100.0%	100.0%	0.0%
VN	35.3%	70.1%	34.7%
Aggregate	55.5%	87.5%	32.0%

Source: CPTPP Legal Text, Annex 2-D; APEC Secretariat, Policy Support Unit Calculations

In analyzing the HS chapters with the largest number of tariff lines immediately liberalized by individual CPTPP members, many of them are related to capital goods, such as HS chapters 84 and 85 corresponding to machinery and mechanical applications, and electrical machinery, respectively (Table 3.4). In all CPTPP members, they appear as one of the top five chapters with the larger numbers of duty-free tariff lines at the CPTPP's date of entry into force.

Some HS chapters comprised of mostly intermediate goods also appear across all CPTPP members among those with the largest number of tariff lines fully liberalized from CPTPP day 1. For example, organic chemicals (chapter 29). Likewise, Iron and steel (chapter 72) also appears in many CPTPP members among one of the HS chapters with most duty-free tariff lines after the agreement is put into force.

Table 3.4: Top 5 Chapters with Most Duty-free Tariff Lines at Date of Entry (% of Total Tariff Lines)

	AUS	%	BD	%	CDA	%	CHL	%	JPN	%	MAS	%	MEX	%	NZ	%	PE	%	SGP	%	VN	%
1	84 Machinery and mechanical apps	9.5	84 Machinery and mechanical apps	11.0	84 Machinery and mechanical apps	8.4	84 Machinery and mechanical apps	8.0	84 Machinery and mechanical apps	6.1	44 Wood and articles thereof	15.6	29 Organic chemicals	13.5	84 Machinery and mechanical apps	9.8	84 Machinery and mechanical apps	9.6	84 Machinery and mechanical apps	13.3	84 Machinery and mechanical apps	9.9
2	29 Organic chemicals	5.6	87 Vehicles other than railway	6.8	85 Electrical Machinery	5.9	29 Organic chemicals	7.1	29 Organic chemicals	4.7	84 Machinery and mechanical apps	6.2	84 Machinery and mechanical apps	10.2	85 Electrical Machinery	5.5	29 Organic chemicals	9.1	85 Electrical Machinery	8.3	85 Electrical Machinery	4.7
3	85 Electrical Machinery	5.1	85 Electrical Machinery	6.4	29 Organic chemicals	4.6	3 Fish and crustaceans, molluscs	6.4	52 Cotton	4.0	29 Organic chemicals	4.1	85 Electrical Machinery	7.3	29 Organic chemicals	4.5	85 Electrical Machinery	5.4	87 Vehicles other than railway	4.9	29 Organic chemicals	4.1
4	48 Paper and paperboard	3.9	29 Organic chemicals	4.1	3 Fish and crustaceans	2.8	85 Electrical Machinery	4.8	85 Electrical Machinery	3.4	85 Electrical Machinery	3.9	73 Articles of iron or steel	2.4	72 Iron and steel	3.0	28 Inorganic chemicals	3.7				
5	3 Fish and crustaceans	3.1	72 Iron and steel	3.1	90 Optical instruments	2.7	87 Vehicles other than railway	3.0	72 Iron and steel	3.4	39 Plastics and articles thereof	3.3	72 Iron and steel	2.4	39 Plastics and articles thereof	2.9	3 Fish and crustaceans	2.9				
			3 Fish and crustaceans	3.1																		

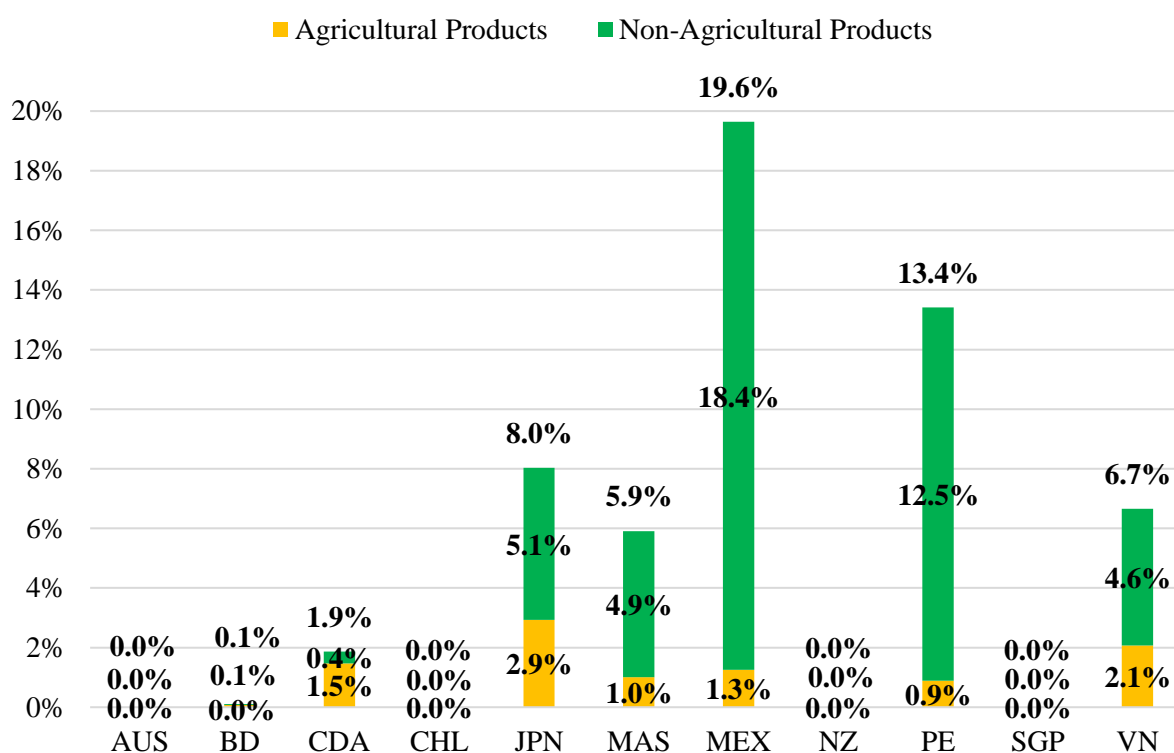
Source: CPTPP Legal Text, Annex 2-D; APEC Secretariat, Policy Support Unit Calculations

Products Subject to 10-Year-or-Longer Phase Out Full Liberalization Period

Under the full liberalization regime, apart from the immediately liberalized products, tariffs on the remaining products are to be phased out over periods of up to 21 years, varying across economies and product categories. As shown in Figure 3.7, most products are completely liberalized within the first few years of the agreement entering in force, while for more sensitive products, the process could be extended to a much longer timeframe. Examining those products that are subject to longer liberalization periods (from 10 years and above) and those that are partially liberalized and excluded gives us an idea of the sensitivities faced by each of the CPTPP members from the goods trade perspective in the negotiation process.

7 out of 11 CPTPP parties have tariff lines that will be fully liberalized only after 10 or more years (Figure 3.7). However, most of these products come from five CPTPP parties (i.e. Japan; Malaysia; Mexico; Peru and Viet Nam). Industrial products take up a major share, ranging from 4.6% to 18.4% of all tariff lines across these five CPTPP members.

Figure 3.7: Share of Tariff Lines Fully Liberalized after 10 or More Years



Source: CPTPP Legal Text, Annex 2-D; APEC Secretariat, Policy Support Unit Calculations

In order to determine whether these tariff lines subject to longer liberalization schedules are concentrated in few product categories, this report looked at the numbers of HS chapters containing tariff lines with this feature. For instance, sensitive products in Brunei are concentrated in 3 HS chapters, while in Mexico, the products are dispersed in 70 different chapters (Table 3.5).

Table 3.5: Number of HS Chapters Containing Tariff Lines Fully Liberalized After 10 or More Years

AUS	BD	CDA	CHL	JPN	MAS	MEX	NZ	PE	SGP	VN
0	3	11	0	37	23	70	0	44	0	22

Source: CPTPP Legal Text, Annex 2-D; APEC Secretariat, Policy Support Unit Calculations

Table 3.6 lists the top 5 chapters in each CPTPP party with the highest shares of tariff lines subject to full liberalization only after 10 or more years. The slow-paced liberalization is mostly prevalent in labor-intensive manufactures, agricultural products and products with negative externalities.

In this regard, most of the sensitivities in labor-intensive manufactures were found in footwear, textiles (e.g. knitted fabrics, woven fabrics and other textiles), apparel and clothing and carpets. Among agricultural products, those with most sensitivities were sugars, milling products, cotton, preparations of cereals, flour, starch and milk, raw hides and skins and miscellaneous edible preparations. Products creating negative externalities like tobacco, alcoholic beverages and arms have also been included under long liberalization periods.

In addition, some capital-intensive manufactures such as vehicles are also subject to long liberalization periods. Usually, these products face a long-term liberalization period for a number of reasons such as: 1) strategic considerations in order to protect and develop local producers; 2) tax collection; and 3) discouraging the consumption of foreign products that are considered luxury items.

Table 3.6: Top 5 HS Chapters with Most Tariff Lines Fully Liberalized Only After 10 or More Years (as % of share within each chapter)

	BD	%	CDA	%	JPN	%	MAS	%	MEX	%	PE	%	VN	%
1	21 Misc edible preparations	13.2	24 Tobacco	94.1	42 Articles of leather	100.0	24 Tobacco	100.0	52 Cotton	94.9	57 Carpets	100.0	24 Tobacco	100.0
2	36 Explosives; pyrotechnic products	6.3	17 Sugars and sugar confectionery	59.5	64 Footwear	78.1	22 Beverages, spirits and vinegar	83.3	60 Knitted and crocheted fabrics	89.3	61 Apparel and clothing knitted or crocheted	96.9	22 Beverages, spirits and vinegar	80.4
3	33 Essential oils and resinoids	4.8	11 Products of milling industry	26.7	43 Furskins and artificial fur	66.7	87 Vehicles other than railway	40.4	58 Special woven fabrics	89.1	52 Cotton	93.8	17 Sugars and sugar confectionery	61.5
4			19 Prep. of cereals, flour, starch or milk	21.3	41 Raw hides and skins	41.9	76 Aluminium	39.5	63 Other textiles	88.9	62 Apparel and clothing not knitted and crocheted	89.6	27 Mineral fuels, mineral oils	41.5
5			64 Footwear	18.8	24 Tobacco	41.7	93 Arms	36.4	61 Apparel and clothing knitted or crocheted	85.9	64 Footwear	86.7	87 Vehicles other than railway	39.4

Source: CPTPP Legal Text, Annex 2-D; APEC Secretariat, Policy Support Unit Calculations

Partial Liberalization

A partial liberalization regime applies when economies decide not to offer fully duty-free access to certain products at any point in time. In the case of the CPTPP, this has been implemented through approaches such as: 1) only eliminating the ad valorem part of the duty while the non-ad valorem component remains unchanged; 2) reducing the ad valorem duty from base rate to a certain point and remains at that level; 3) tariff-rate quotas (TRQs), which set duty-free quotas and a payment of a duty for imports above the quota; and 4) price bands, in which an import duty is applicable to a product when its import price is lower than a reference price.

9 out of 11 CPTPP members adopted such measures, targeting mostly agriculture products (Table 3.7). Live animals, meat, dairy produce, cereals, cocoa, sugars, vegetables, fruits, nuts are among those products affected by some CPTPP members' partial liberalization schemes.

Table 3.7: Number of Tariff Lines Subject to Partial Liberalization

	NUMBER OF TARIFF LINES					
	All Products	% of all tariff lines	Agricultural	% of all agriculture tariff lines	Non-Agricultural	% of all non-agriculture tariff lines
AUS	8	0.1%	0	0.0%	8	0.1%
CDA	98	1.3%	98	6.8%	0	0.0%
CHL	41	0.5%	41	2.7%	0	0.0%
JPN	365	3.8%	365	17.2%	0	0.0%
MAS	12	0.1%	12	1.0%	0	0.0%
MEX	99	0.8%	56	4.2%	43	0.4%
NZ	32	0.4%	0	0.0%	32	0.5%
PE	47	0.6%	47	4.5%	0	0.0%
VN	209	2.1%	13	1.0%	196	2.3%

Source: CPTPP Legal Text, Annex 2-D; APEC Secretariat, Policy Support Unit Calculations

Exclusions

Some products have been excluded by certain CPTPP parties from the tariff liberalization process. The number of exclusions is very limited in terms of the total number of tariff lines negotiated at CPTPP (Table 3.8). There are different ways to introduce exclusions, including: 1) bilaterally only, by keeping MFN rates; 2) to selected CPTPP parties by keeping custom rates agreed in WTO multilateral negotiations; 3) to all CPTPP parties by keeping MFN rates.

Three economies include exclusion schemes in the CPTPP agreement and some examples of excluded products are sugar, cheese, milk, poultry, beans, wheat, rice, flour, leather and articles thereof, among others. Those products under the category of exclusions are the most sensitive ones from each CPTPP member perspective.

Table 3.8: Tariff Exclusions under CPTPP

	NUMBER OF TARIFF LINES			PERCENTAGE OF TARIFF LINES		
	All products	Agriculture	Non-Agriculture	All products	Agriculture	Non-Agriculture
CHL	45*	45*	0	0.6%	0.6%	0.0%
JPN	305	253	52	3.2%	2.6%	0.5%
MEX	43**	43**	0	0.3%	0.3%	0.0%

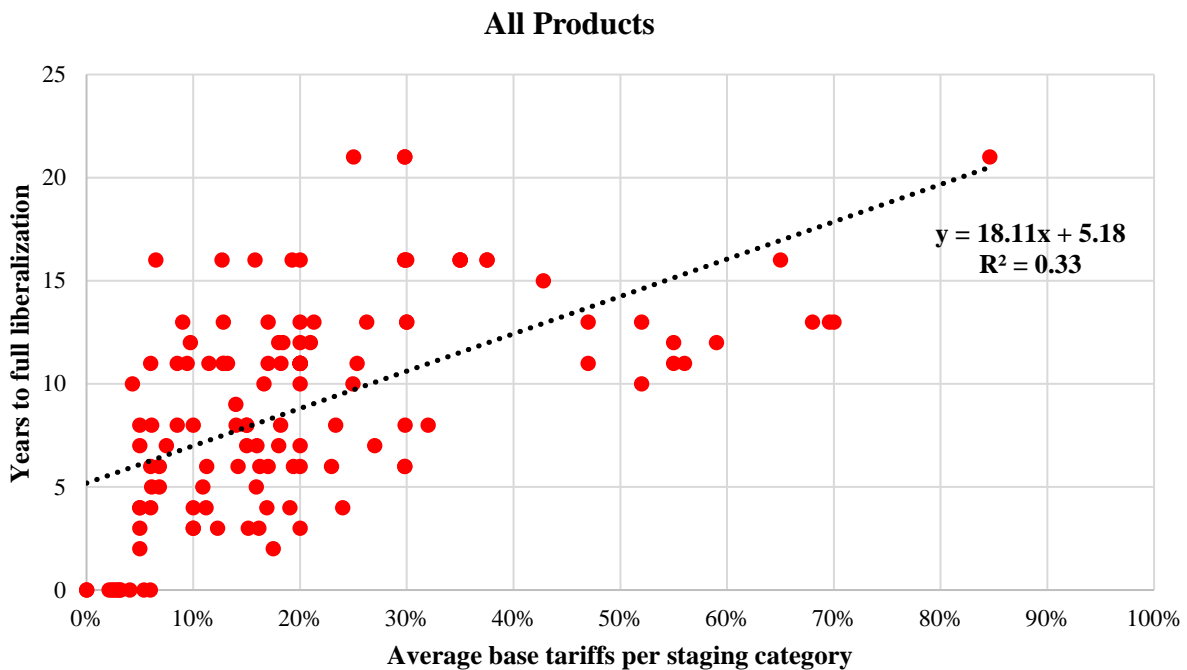
Note: *Only for products from one party. ** Only for products listed from selected CPTPP parties

Source: CPTPP Legal Text, Annex 2-D; APEC Secretariat, Policy Support Unit Calculations

3.4 RELATIONSHIP BETWEEN LIBERALIZATION PERIODS AND BASE TARIFFS

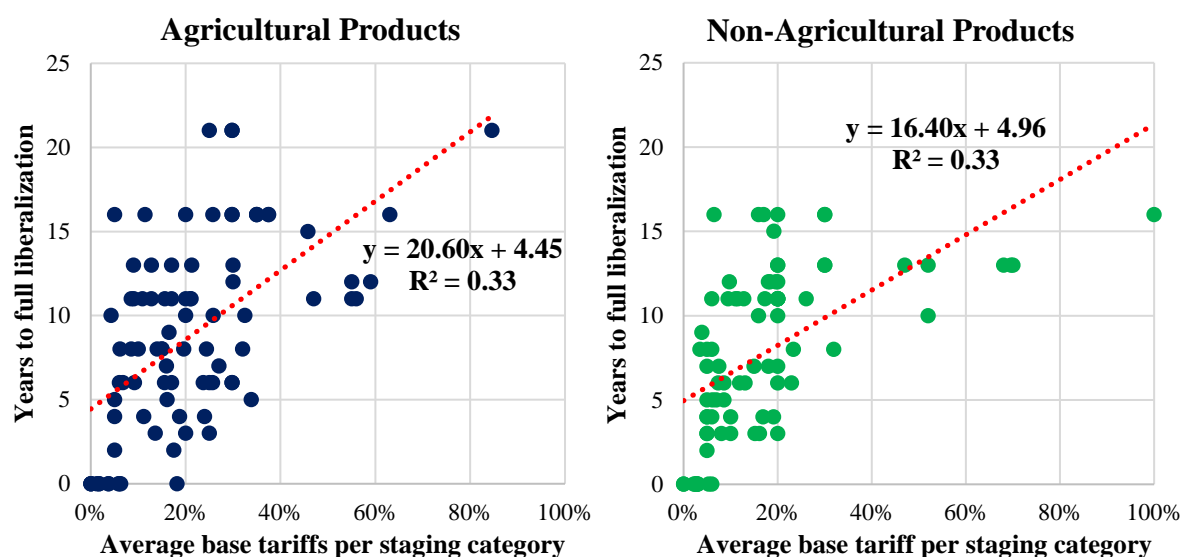
To further explore the relationship between average base tariffs and the time required to achieve full liberalization, an empirical estimation is carried out in this section. According to our findings, governments are inclined to offer a liberalization period of 5 years to products with a low base tariff (Figure 3.8). As base tariffs are higher, the liberalization period tends to be longer. On average, an increase of the base tariff by 10 percentage points (e.g. tariff increasing from 10% to 20%) means that full liberalization will take an additional 1.8 years.

Figure 3.8: Relationship between Average Base Tariff and Years to Full Liberalization



Source: CPTPP Legal Text, Annex 2-D; APEC Secretariat, Policy Support Unit Calculations

Within specific product categories, a positive relationship continues to exist between base tariffs and the years required to achieve full liberalization (Figure 3.9). The results show that agricultural products tend to be more sensitive than non-agricultural products to changes in base tariffs and that this may affect the liberalization offered. To achieve full liberalization, 10 additional percentage points in the base tariff of an agricultural product means that full liberalization will take an additional 2.06 years; while for a non-agricultural product, a similar scenario would require an additional 1.64 years to reach full liberalization.

Figure 3.9: Relationship between Average Base Tariffs and Years to Full Liberalization

Source: CPTPP Legal Text, Annex 2-D; APEC Secretariat, Policy Support Unit Calculations

3.5 OBSERVATIONS

The analysis of the CPTPP tariff liberalization schedules brings some interesting observations about the process. A negotiation process is not easy with different parties with diverse market access interests, domestic sensitivities and development levels. The more parties involved, the more complex the negotiation is. Being a process involving 11 parties, this required a lot of creativity by creating several staging categories to liberalize trade among them.

In general, despite these caveats, it was possible for all parties involved to reach an outcome that provides extensive immediate liberalization for a significant number of products. Notwithstanding some cases of exclusions, partial liberalization and long-term liberalization periods, the full implementation of the CPTPP will contribute to significant reduction of tariff barriers among its members.

Faster liberalization is mostly found in sectors covering capital goods (e.g. machinery and equipment) and intermediate products (e.g. chemicals, iron and steel). Slower liberalization, partial liberalization and exclusions are more common in products that are labor-intensive (e.g. textiles and apparel and footwear), agricultural products (e.g. milk, sugar, grains, meats and leather), products creating negative externalities (e.g. tobacco and alcoholic beverages) and certain industries considered as strategic by some of the participating parties (e.g. cars).

The analysis also shows a positive relationship between base tariffs and the time to full liberalization. On average, agricultural products require longer liberalization periods than non-agricultural as base tariffs increase.

Nonetheless, it is important to point out that the outcome obtained at the end of the CPTPP negotiations involved a series of commitments on market access for both goods and services, as well as obligations related to disciplines and rules. The final agreement was a result of a balanced package, carefully negotiated through a process of exchange of concessions across different sectors and areas.

4 FINAL REMARKS

This report provides an overview of the progress made so far by APEC economies and the possible impact of FTAAP pathways should APEC pursue them moving forward. Some of the key takeaways are as follows:

Although significant progress has been made by APEC to reduce tariffs unilaterally, there is still room for APEC economies to participate more actively to reduce tariffs in several areas. Besides unilateral liberalization, APEC economies can use other strategies to reduce or eliminate tariff barriers such as negotiating bilateral and regional RTA/FTAs, as well as participating in multilateral and plurilateral agreements.

The FTAAP pathways examined in this study could bring significant benefit to APEC in terms of income, welfare, trade and investment at the regional level. While the impact of a prospective FTAAP by the pathways discussed could benefit APEC as a whole, the impact on economies will differ depending on several factors including development level and economic structure, among others. Also, it is clear that any economy that is excluded from the FTAAP pathways or other strategies to reduce or eliminate tariff barriers could lose out. Tariff reductions as a result of these regional trade agreements could benefit workers as it would allow economies to better position themselves within global value chains.

The CPTPP provides strong evidence that it is possible to engage in a deep negotiated liberalization process among a large number of parties. The CPTPP provides extensive immediate liberalization for a significant number of products. The staging categories agreed by the participating economies to address the variance in their sensitivities and their level of economic development has made CPTPP a good example to show how creativity to find the widest possible landing zone would enable APEC economies to drive ambitious tariff liberalization towards the goal of deeper regional economic integration envisaged by FTAAP.

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6 ANNEX

A total of 17 studies were evaluated in this study with 15 studies including scenarios on TPP, 5 studies on CPTPP and 10 studies on RCEP.

	GTAP Dataset	Aggregated Sectors	Aggregated Regions	Relevant Agreements Evaluated	Main Assumptions
Alexander, K., & Vladimir, S. (2017)	9	16	30	TPP & RCEP	<ul style="list-style-type: none"> Tariff reduction assumed to be 100%
Cheong, I., & Tongzon, J. (2013)	8	5	18	TPP & RCEP	<ul style="list-style-type: none"> Tariff reduction assumed to be 100%
Ciuriak, D., Xiao, J., & Dadkhah, A. (2017)	9	33	40	TPP & CPTPP	<ul style="list-style-type: none"> Tariff reduction is as stipulated within the actual TPP liberalization schedule. Stylized straight-line tariff elimination schedules are developed based on actual elimination schedule. Trailing liberalization beyond 2035 is not taken into consideration Agricultural products are assumed to face no Rule of Origin cost and a 100% utilization rate. Textiles and clothing's are assumed to have a high utilization rate of 90%. Other industrial sectors utilization rate is assumed to be 80% where utilization rates are phased in from a base of 60% by 5% each year Services NTBs are converted into Ad-Valorem equivalents (AVE) based on the effect of actual restrictions and the difference between bound commitments and applied practice. It assumes that 25% of the calculated AVE is actionable. FDI liberalization shock is based on a cross reference of CPTPP measures to OECD's Foreign Direct Investment Restrictiveness (FDIR) index for members.
Dasgupta, P., & Mukhopadhyay, K. (2017)	9	28	13	TPP & CPTPP	<ul style="list-style-type: none"> Takes into consideration tariff and tariff-rate quotas from actual TPP liberalization schedule Tariff reduction is carried out only on selected sectors after considering most commitments in the TPP
Gilbert, J. (2013)	7.1	35	15	RCEP	<ul style="list-style-type: none"> Trade liberalization is modelled as complete removal of the applied tariffs on merchandise trade
Gilbert, J., Furusawa, T., & Scollay, R. (2016)	9	32	27	TPP, RCEP & FTAAP	<ul style="list-style-type: none"> For the case of the TPP, an evaluation of different scenarios is carried out where tariff is either reduced based on the actual TPP liberalization schedule or completely eliminated Tariff quotas are expanded as stipulated within the TPP agreement and are included as equivalent tariff cuts that generate import expansion

					<ul style="list-style-type: none"> For the case of RCEP and FTAAP, liberalization is modelled as a complete elimination of tariffs between member economies.
Ji, X., Rana, P., Chia, W., & Chang, T.L (2018)	9A	15	22	TPP, CPTPP & RCEP	<ul style="list-style-type: none"> For TPP and CPTPP, tariffs are completely eliminated with carve-outs for Canada, Japan, Mexico and Viet Nam; In terms of services, liberalization includes those considered under USITC (2016)²⁹ but with more extensive liberalization carried out within communication, trade and other business services industries; 1% decrease in import cost; and Rules of Origin is expected to reduce gains by 25%. For RCEP, tariffs are completely eliminated in Australia, Brunei Darussalam, New Zealand and Singapore. While for China, Japan, Korea, Malaysia and the Philippines, 95% of tariffs are eliminated. 90% in the remaining economies with carve-outs; For services, liberalization in communication, transport and other industries has been minimal based on current ASEAN+ agreements; 0.5% reduction in import costs; and Rules of Origin is expected to reduce gains by 25%.
Kawasaki, K. (2014)	8.1	29	31	TPP, RCEP & FTAAP	<ul style="list-style-type: none"> Tariff reduction assumed to be 100% NTMs reduced by 50% Spillover effects of NTM reduction to third party economy assumed to be 25%
Lee, H., & Itakura, K. (2014)	8.1	32	22	RCEP	<ul style="list-style-type: none"> Tariff rates on commodities decline linearly to zero Rice is excluded from trade liberalization. NTBs on services and logistic time is assumed to fall by 20% respectively

²⁹ USITC considers the impact of the TPP by converting service liberalization into tariff equivalents before reducing them. The paper considers the impact of : (1) commitments to reduce or remove specific NTMs restricting trade in services through the evaluation of the service trade restrictiveness index (STRI); (2) adopting a negative list approach for service liberalization by assuming it will generate larger gains within sectors that are innovative; (3) adopting measures which ensures the ability to transmit data across borders as well as prohibit data localization measures. This is assumed to result in larger gains within sectors that are more digitally intensive.

The impact of the liberalization carried out in all three categories were weighted equally to evaluate the effect on cross-border trade.

Lee, H., & Itakura, K. (2017)	9	29	23	FTAAP, TPP, CPTPP & RCEP	<ul style="list-style-type: none"> • Tariffs on commodities apart from rice, other grains, sugar, meats and dairy products fall linearly to 0% • Tariff equivalents of NTBs in services are reduced by 20% • For selected agricultural products, tariffs will be reduced by: 2% for rice; 50% for other grains (wheat, feed grains and other grains); 5% for sugar; 75% for meats; and 5% for dairy products • Time cost of trade is assumed to fall by 20% • Productivity in agricultural and manufacturing sector will increase gradually from 1% to 1.1% each year over a 10-year period. • For scenarios with FTAAP, by 2035, 80% of the FTAAP is assumed to have been implemented
Mukhopadhyay, K., & Thomassin, P. (2018)	9	28	13	TPP	<ul style="list-style-type: none"> • Takes into consideration tariff and tariff-rate quotas from actual TPP liberalization schedule • Tariffs assumed to be completely eliminated on selected sectors based on most commitments within the TPP.
Petri, P., & Plummer, M. (2016)	9	19	29	TPP	<ul style="list-style-type: none"> • Takes into consideration actual TPP liberalization schedule. • Non-tariff barriers are adjusted based on the following: <ul style="list-style-type: none"> ○ Only ¼ of non-tariff barriers are assumed to be subject to liberalization ○ ½ of remaining barriers are considered actionable for services and ¾ are considered actionable for goods. ○ Share of actionable barriers eliminated for each service sector based mostly on the commitments of the United States – Korea agreement ○ 20% of reduction in NTBs and investment barriers apply to non-TPP partners • FDI is handled similarly to non-tariff barriers
Petri, P., Plummer, M. & Zhai, F. (2011)	8	18	24	TPP & FTAAP	<ul style="list-style-type: none"> • Across the different scenarios, tariffs were reduced between 91-93%; NTBs affecting goods were reduced between 35-51%; NTBs affecting services were reduced between 33-56%; FDI barriers were reduced between 35-59%; preference utilization rates were assumed to be between 53-71% • Information on the tariff schedules of several FTAs was taken into account to develop time-profiles of tariff reduction paths for TPP and FTAAP.
Petri, P., Plummer, M., Urata, S., & Zhai, F. (2017)	9	19	29	TPP, CPTPP & RCEP	<ul style="list-style-type: none"> • For RCEP, 85% elimination of tariffs; ¾ of NTB, agricultural, services, FDI liberalization of recent ASEAN+1 agreements; and non-preferential NTB reduction assumed to be 10% • For TPP, 99% of tariffs eliminated as negotiated within the TPP; adjusted version of the Korea-United States Free Trade Agreement; and non-preferential NTB reduction assumed to be 20%

					<ul style="list-style-type: none"> For CPTPP, 99% of tariffs eliminated as negotiated within the TPP; adjusted version of the Korea-United States Free Trade Agreement; and non-preferential NTB reduction assumed to be 10%
Rahman, M. M., & Ara, L. A. (2015)	8	17	10	TPP & RCEP	<ul style="list-style-type: none"> For the TPP, all economies are assumed to eliminated tariffs for each other For the RCEP, all economies assumed to eliminated import tariffs
Sikdar, C., & Mukhopadhyay, K. (2017)	9	14	22	TPP	<ul style="list-style-type: none"> Takes into consideration actual TPP liberalization schedule Trade costs are expected to fall by 10%
World Bank. (2016)	Not indicated	19	29	TPP	<ul style="list-style-type: none"> Liberalization scenario considering tariff reduction under the actual TPP liberalization schedule Less than full utilization rate of preferential tariffs Considers additional costs to meet rules of origin where the cost for 40% of inputs are expected to rise by 10% of tariff reduction offered by the agreement For goods, NTM's were constructed based on estimates made by Kee, Nicita and Olarreaga (2009)³⁰ which was subsequently updated to 2012. For services, estimates from Fontagne, Guillin and Mitaritonna (2011) were used³¹. Three quarters of these NTMs are assumed to be trade impediments. For the remaining NTMs, ¾ of those for goods are considered actionable while only ½ are considered actionable for services. The reduction of these NTMs are based on the Korea and United States agreement (which is seen to be similar to those of the TPP) with slight modifications made Spillover benefits from liberalization are assumed to be 20%

³⁰ Kee, Nicita and Olarreaga (2009) created an index that evaluated the impact of trade policy on an economy's own welfare, on its overall imports and the impact of trade policies of other economies on each other's exports.

³¹ Fontagne, Guillin and Mitaritonna (2011) evaluated the issues that impacted the estimation of tariff equivalents within services and provided estimates of tariff equivalents for trade barriers within nine service sectors in 65 economies.