Actual and Potential Trade Agreements in the Asia-Pacific: Estimated Effects

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Abstract:

This paper assesses and compares economic impacts of four actual and potential free trade agreements in the Asia-Pacific Region; Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP, sometimes also called TPP-11), the original Trans Pacific Partnership (TPP-12), the Regional Comprehensive Economic Partnership (RCEP), and the Free Trade Area of the Asia-Pacific (FTAAP). FTAs with a larger scale and wider membership are expected to produce higher aggregate gains in terms of increased GDP and trade flows. U.S. withdrawal from TPP-12 reduced estimated GDP gains for the TPP-11 countries by about half. For countries belonging to CPTPP and also negotiating RCEP, the potential gains from an agreement with both China and Korea are substantial, but not as large as if the United States were to re-join TPP-12. On a sectoral basis, significant structural shifts are observed for such sectors as food processing, wearing apparel, textiles, and transport equipment.

Introduction

This paper assesses and compares economic impacts of four actual and potential free trade agreements in the Asia-Pacific Region; Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP, sometimes also called TPP11), which entered into force for seven of its members as of January 2019[1]; the original Trans Pacific Partnership (TPP12), which ended when the United States withdrew in January 2017; the Regional Comprehensive Economic Partnership (RCEP), which has been under negotiation since 2012; and the Free Trade Area of the Asia-Pacific (FTAAP), which represents an aspiration among the 21 member economies of APEC but is not currently under negotiation.[2]

Our simulation results suggest some of the following key impacts from these four agreements, as measured against a 2030 baseline in which none of the agreements are in place, i.e. a pre-CPTPP baseline. One implication of doing the analysis this way is that the marginal additional gains from TPP12, RCEP, or FTAAP would be smaller for most countries than those estimated here, now that CPTPP is in place.

[1] Australia, Canada, Japan, Mexico, New Zealand, Singapore, and Vietnam. At the time of writing (October 2019), Brunei, Chile, Malaysia, and Peru have yet to ratify the CPTPP. See https://www.international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/cptpp-ptpgp/index.aspx?lang=eng

[2] Within APEC, the aspiration to establish free and open trade and investment in the Asia-Pacific by 2020 was first stated in the Bogor Goals of 1994, and made specific in the Lima Declaration on FTAAP in 2016. The Lima Declaration envisioned a process "outside of APEC, parallel with the APEC process," of which TPP and RCEP could be potential "pathways" leading to the FTAAP. See https://www.international.gc.ca/trade-commerce/trade-agreements-accords-commerciaux/agr-acc/cptpp-ptpgp/index.aspx?lang=eng.

- **GDP:** FTAs with a wider membership and larger scale are expected to produce higher aggregate economic gains in terms of increased GDP and trade flows. The CPTPP is projected to increase the overall members' GDP by 0.4% as compared to baseline scenario for 2030, TPP12 – by 0.7%, RCEP – by 1.5%, FTAAP – by 1.6%. If trade liberalization is assumed also to boost productivity), the estimates of these gains become larger.[3]
- **Global impact:** If ranked in terms of changes in global GDP, the relative magnitude of impacts is the same – FTAAP, followed by RCEP, TPP12, and CPTPP. The ranking of the agreements is driven almost entirely by effects on members. Losses of excluded countries from trade diversion are minimal; Korea would have lost 0.3% of GDP from a TPP-12 including the United States, while Cambodia, which is not part of APEC, would lose 0.4% of GDP in the event of FTAAP.
- **Trade flows:** Estimated increases in exports for members range from 2.8% for CPTPP to 9.4% for FTAAP in standard simulations without productivity effects. Again, these are larger if it is assumed that trade liberalization boosts productivity.
- **Country performance in CPTPP and TPP12:** All CPTPP members would experience estimated GDP increases, with the highest in percentage terms for Brunei Darussalam (1.9%)[4], Vietnam (1.1%), Peru (1.0%) and Malaysia (1.0%). Had the United States remained in TPP (TPP12), estimated gains for Vietnam would be over tripled to 3.6%, and gains for Malaysia would have nearly been doubled to 1.8%. The largest estimated gains from the broader RCEP and FTAAP agreements are for China, both in absolute terms ($438 billion and $682 billion against a 2030 baseline, respectively) and in relative terms (2.0% and 3.1% of GDP respectively.) Other significant gainers from either RCEP or FTAAP are Japan (0.7% of GDP under RCEP, 1.6% under FTAAP), Malaysia (0.8% under RCEP, 1.5% under FTAAP), Korea (1.7% under both RCEP and FTAAP), Korea (0.7% under RCEP, 2.2% under FTAAP), and India (1.7% under RCEP. 0.2% under FTAAP). New Zealand, which
- **Trade barriers:** Although applied tariffs between Asia-Pacific countries at the aggregate country level are in most cases already low due to existing bilateral and regional FTA agreements, tariff protection still can be high for certain sectors. Overall, initial tariff and non-tariff barriers were the highest and are expected to observe the largest reductions in food and beverages, apparel and textiles, agriculture, and services under all considered FTAs. NTMs are greater obstacles to trade than tariffs across all FTAs.
- **Trade liberalization:** Under CPTPP and TPP12 tariffs are reduced to minimum levels and NTMs are reduced significantly across all countries. Although assumptions on trade opening for TPP12 member states are the same as per CPTPP, for many of them (Canada, Chile, Mexico, Peru, Singapore, and Australia) the initial average trade weighted tariffs are lower due to large trade volumes with the US that already shares bilateral FTAs and low tariffs. Less tariff liberalization is projected in the RCEP as compared to the CPTPP/TPP, however initial tariff protection is higher in many RCEP countries (India, China, Australia, and Korea). Trade liberalization under the FTAAP is expected to be the most significant assuming that all members will maintain average tariff rates no greater than 1% by 2030.
- **Sectoral changes:** The highest growth of exports and output under the all considered FTAs are projected to occur in food and beverages, wearing apparel, and textiles due to a relatively high reduction in tariffs and NTMs in these sectors.

[3] Unless otherwise specified, the figures below are derived from standard simulations without assumptions about extra productivity gains associated with trade liberalization.

[4] Because of the small size of Brunei's economy, further reporting of results for this country will be restricted to the tables.

- **Trade creation and diversion:** The increases in trade for all considered FTAs are projected to be significantly larger, both in dollar and percentage terms, that any trade diversion observed by non-members. Gains in total exports of FTAs members are also much higher compared to exports losses of non-members, exceeding them in more than five times. As a result, all FTAs are expected to boost the global exports, with larger FTAs having greater positive impact on global trade.

In one sense, our estimates can be considered conservative, since many actual or potential features of the FTAs are not captured by the model e.g. impact on foreign direct investment, endogenous productivity gains or impact of measures such as government procurement, harmonization of labor or environmental standards. On the other hand, our estimates of potential NTM liberalization go beyond what is plainly readable from the text of CPTPP or TPP12, and may be considered to be optimistic by some (cf. USITC 2016).

This paper is organized as follows. Section II covers the literature review and the main methodological aspects behind the simulations. This section describes the main assumptions of the CGE model; defines broadly interventions in each scenario, and quantifies expected sectoral reductions in tariffs and non-tariff measures (NTMs) for FTA signatory countries. Section III presents economy-wide simulations results, trade diversion and creation effects and distributional impacts associated with each FTA. Section IV concludes.

Signatory countries under each FTA agreement

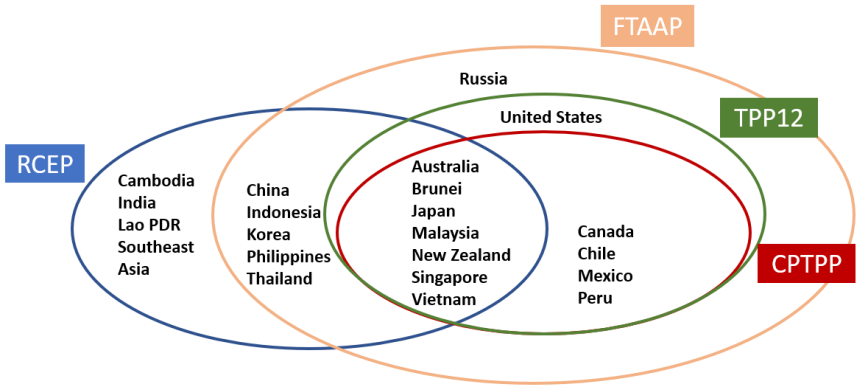
The TPP was originally negotiated with 12 economies in America, Asia, and the Australian continent. In the Americas, it included the NAFTA signatories (United States, Canada, and Mexico) plus Peru and Chile. The TPP12's largest economy in Asia is Japan, followed by Malaysia, Vietnam, Singapore, and Brunei Darussalam. Early in 2017, the United States, the largest economy in the TPP block, formally withdrew its participation. The remining countries reopened the negotiations of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) and signed it in March 2018. The CPTPP agreement came into force for the initial six ratifying countries on 30 December 2018 (Australia, Canada, Japan, Mexico, New Zealand, and Singapore). On 14 January 2019, the agreement entered into force for Vietnam. The CPTPP maintains most of the provisions and the degree of trade liberalization of the original TPP12.

The RCEP is a proposed free trade agreement between the ten member states of the Association of Southeast Asian Nations (ASEAN) (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, Vietnam) and the six states with which ASEAN has existing free trade agreements (Australia, China, India, Japan, South Korea and New Zealand). RCEP negotiations were formally launched in November 2012 and are in their 26th round of negotiations.

The Free Trade Area of the Asia-Pacific (FTAAP) is a long-term goal to link 21 Pacific Rim economies from China to Chile, including the United States. APEC first formally started discussing the concept of the FTAAP at its summit in 2006. In our simulation we include 18 out of 21 countries negotiating FTAAP: Australia, Brunei Darussalam, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, USA, Vietnam, Singapore, Korea, Indonesia, Philippines, Thailand, China and Russia. We are not able to include Taiwan, Hong Kong and Papua New Guinea as those are part of the rest of the word (ROW) in the model aggregation.

Figure **1** shows in a schematic diagram the participant countries in each of the agreements and the overlap among them.

Figure 1 Membership of the CPTPP, TPP-12, RCEP, and FTAAP



Source: Authors' elaboration

Literature review

Multilateral integration options potentially afford greater benefits for their participants compared to bilateral options and provide them with useful strategic geopolitical opportunities, such as extended global influence and increased leverage against bilateral pressures (Petri et al, 2017). Moreover, smaller agreements can potentially be stepping stones for larger agreements (Petri and Plummer, 2016); the aspirational FTAAP may be considered as a folding together of TPP12, RCEP, and the ASEAN FTA. Important economy-wide benefits of multilateral trade agreements for Asian-Pacific countries include more coherent trade rules to facilitate international business operations in the region; trade, income and output creation; productivity and welfare gains, as well spillover effects from reductions in non-tariff barriers (NTMs) and regulatory harmonization.[5]

Quantitative studies on economic impacts of multiregional free trade agreements employ global CGE models that estimate effects of different multilateral integration scenarios on their member countries. Integration scenarios are differentiated in the number of participants, as well as the scope and coverage of multilateral agreements (more or less ambitious provisions), including TPP with different number of potential members (such as CPTPP, TPP12 or TPP16), as well as RCEP and potential FTAAP. Simulations also differ by incorporating different set of trade barriers (tariff and non-tariff) and by the use of different assumptions about the size of NTM reductions, economic growth projections, incorporating positive "spillover" effects for non-member countries from the liberalization of nontariff barriers under TPP, etc. Although the results of simulations may differ in average gains and relative

[5] Due to the nature of most regulation, it may be difficult or costly for one country to discriminate among trading partners. Thus, benefits from liberalization of NTMs or regulatory coherence agreed in a regional trade agreement can be multilateralized, and accrue to non-members.

position of some countries, overall projections of expected impacts of Asia-Pacific multilateral agreements are rather consistent.

Petri and Plummer (2016) mapped provisions of the TPP12 via projected changes in tariffs, NTMs on goods and services, and barriers on Foreign Direct Investment (FDI). They estimated that TPP12 would have increased total member countries' real income by $465 billion or 1.1 percent over baseline scenario by 2030, while their exports are expected to grow by $1,025 billion or 11.5 percent. TPP12 would have generate considerable benefits for all members, with the most substantial gains for Vietnam and Malaysia – their annual real incomes would have increased by 8.1 and 7.6 percent of GDP, respectively, over baseline scenario estimates by 2030. The United States was projected to be the largest beneficiary in absolute terms – its real income will grow by $131 billion, or 0.5 percent of GDP.

These estimates coincide with World Bank (2016a) projections of the impacts of TPP12, projecting an increase of GDP in members states by an average of 1.1 percent by 2030, as well as member countries' trade by 11 percent by 2030. It also highlights that the benefits of the TPP12 would mostly be derived from reduction in non-tariff measures in goods and services (accounting for 69% and 16% of the total increase in GDP) rather than from decreased tariffs (explains 15% of GDP increase).

In Petri et al. (2017), simulations are expanded by including more integration alternatives such as TPP12, CPTPP, TPP16, US-Japan FTA and RCEP. When comparing projected effects of these integration options, it is concluded that in general 'wide-membership' and 'high-quality' TPP-like multiregional agreements are usually expected to provide Asia-Pacific countries with greater benefits compared to other integration alternatives. For example, the highest benefits among the considered options can come from TPP16 (adding five more countries to CPTPP - Indonesia, Korea, Philippines, Taiwan, and Thailand), with real income increasing by 2.2 percent over baseline scenario estimates by 2030 – vs 1.1% for TPP12, 1% for CPTPP and 0.4% for RCEP. In absolute terms, expected benefits for members from CPTPP (without the United States) are only about one-third as large as those expected from the TPP12 – $465 billion vs $157 billion of real income gains (Petri et al., 2017). Moreover, multilateral options would yield benefits greater than bilateral agreements between individual Asian-Pacific countries and the United States alone (Petri et al., 2017, p.1). In particular, the estimates suggest that US-Japan bilateral trade agreement can generate a 0.4% real income gain for members.

Studies also consider country-specific implications of multilateral agreements. The USITC's report concludes that TPP12 would have had positive effects for the US economy, with an U.S. annual real income of $57.3 billion (0.23 percent) higher than the baseline projections, real GDP would be $42.7 billion (0.15 percent) higher relative to a baseline projection by 2032. U.S. total exports would be $27.2 billion (1.0 percent) higher, and U.S. exports to TPP partners would grow by $34.6 billion (18.7 percent). Among broad sectors of the U.S. economy, agriculture and food would see the greatest percentage gain relative to the baseline projections (USITC, 2016). However, smaller USITC's estimated benefits for USA from TPP12 as compared to results by Petri and Plummer (2016) can be explained by differences in major modeling assumptions For example, USITC was conservative in terms of not attributing liberalization of NTMs that are not explicitly referenced in the text, and was also more conservative in a number of other assumptions (USITC, 2016).

Cerdeiro, D. A. (2016) applies a CGE model with perfect competition to investigate internal and spillover effects of the trade liberalization under the TPP12 on Latin American countries (LAC). The study finds that the effect of the TPP is heterogeneous across members. Namely, that developing TPP

countries with stronger existing trade links within the TPP (like Malaysia, Singapore, Vietnam, and Mexico) will experience larger spillover effects and gains from the agreement, especially due to the reductions of NTMs in goods. (Cerdeiro, D. A., 2016). The study also finds that effects of TPP on LAC non-members will be small, however some of these countries (Colombia and Guatemala) may experience relatively large benefits from potential joining the TPP.

Maliszewska, Olekseyuk, & Osorio-Rodarte (2018) assesses economic and distributional impacts on Vietnam of Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) on and compares them with the potential impacts of RCEP and TPP12. This study employs a global CGE model LINKAGE to estimate macroeconomic and sectoral changes, along with the Global Income Distribution Dynamics (GIDD) microsimulation tool to model distributional consequences of multilateral agreements for Vietnam. In addition, for each of the three FTA alternatives the study elaborates two scenarios (standards and productivity kick) to capture possible productivity gains as a result of the decrease in trade protection (Maliszewska, Olekseyuk & Osorio-Rodarte, 2018). This study estimates that both CPTPP and RCEP will yield economic gains for Vietnam (1.1% and 0.4% increase of GDD by 2030, respectively), though they will be lower compared to TPP12 (3.6%). When assuming extra productivity gains, Vietnam's gains are even higher (3.5% for CPTPP, 6.6% for TPP12 and 1% for RCEP). Moreover, it is estimated that all income groups of the population will benefit under CPTPP, with higher-skilled workers in the top 60% of the income distribution being the greater beneficiaries.

Methodology

Scenario analysis in a general equilibrium setting

A global dynamic computable general equilibrium (CGE) model LINKAGE is applied to study the impacts of potential free trade agreements on member economies. The analysis includes 17 production sectors and 35 countries/ regions (see Table A1) and simulates the impacts of policy changes up to 2030, including reduction of tariffs, Non-Tariff Measures (NTMs) in goods and services trade.

The effects of trade agreements are estimated by constructing one baseline and four alternative scenarios that simulate reductions of multilateral tariffs and NTMs under CPTPP, TPP12, RCEP, and FTAAP. The net effect of tariff and non-tariff reduction intervention under each scenario are measured as deviations with respect to baseline scenario. The baseline simulation depicts a continuation of usual conditions – without signing new trade agreements, but with the implementation of commitments on tariff reductions under the existing FTAs.

Standard simulation results of the model represent a lower-bound estimate for the gains from trade openness, as many features of the FTAs are not captured by the model e.g. impact on foreign direct investment, endogenous productivity gains, development of new products. The modeling framework also does not cover the impacts of measures such as government procurement, harmonization of labor or environmental standards, which tend to have important impacts on productivity and welfare gains.

Under standard simulations, gains from the FTA scenarios will only capture the effect of international reallocation of production to the most cost-efficient sectors, they don't account for additional gains in productivity associated with trade liberalization and increased openness. To account for possible productivity gains from trade liberalization we follow the findings of Topalova & Khandelwal, (2011) assuming that a 10% decrease in trade protection leads to a 0.5 percentage points productivity gain. As

such, each of the four FTA scenarios has an alternative version constituting a potential upper bound of welfare gains including higher productivity, or productivity kick, based on trade-weighted average reduction of multilateral tariffs and NTMs (simulations with productivity kick).

Annex 1 includes full details of the methodology and scenarios.

Assumptions for reductions in tariffs and NTMs

Changes in tariff and NTMs assumptions for each scenario are outlined below:

- **Baseline scenario:** key macro indicators such as GDP and current account follow projections from the World Bank (2016a) until 2018, then the productivity growth remains fixed to be consistent with historical trends. The baseline includes the future reduction of tariffs as a result of existing FTA commitments up to 2030. For TPP members, tariff cuts follow the database of the International Trade Centre (2015). The rest of FTAs commitments for the baseline (e.g., NAFTA, AFTA, the ASEAN-Japan FTA, the ASEAN-Australia-New Zealand FTA and the P4 Agreement among Brunei Darussalam, Chile, Singapore and New Zealand) come from Petri and Plummer (2016).
- **CPTPP and TPP12:** implementation of the TPP agreement among its members with and without the USA begins in 2017[6]. Tariff reductions in CPTPP and TPP12 are based on the actual TPP tariff commitment schedules compiled by International Trade Centre (2016) and NTMs reductions in goods and services follow estimates from Petri et al., (2016). As such, the CPTPP scenario assumes the same level of ambition as the original TPP12, simply excluding the US.
- **RCEP:** implementation of the RCEP agreement among its 16 members begins in 2017. Reduction of barriers follows Petri et. al. (2012), Petri and Plummer (2016) and the International Trade Centre (2016). Import tariffs are gradually reduced starting with a decline by 24% in 2017 up to 89% in 2027.
- **FTAAP:** implementation of the FTAAP agreement among its members begins in 2021. Reduction of barriers follows Petri et. al. (2012), Petri and Plummer (2016) and the International Trade Centre (2016). Import tariffs among the member countries are also gradually reduced starting with a decline by 46% in 2021 up to 94% in 2030

In case of RCEP and FTAAP, initial tariffs are based on the GTAP data, while for the countries that are also TPP members we use the TPP tariff schedules from International Trade Centre (2015) and International Trade Centre (2016). At the same time, initial NTMs and their cuts follow Petri and Plummer (2016).

The trade-weighted average tariffs and NTMs are calculated for each FTA using current and projected trade flows between FTA trading partners.

Multilateral tariffs are projected to decline to minimum levels under CPTPP and TPP12 with more moderate reductions in RCEP. Reductions in actionable non-tariff measures (NTMs) follow the approach of Petri and Plummer (2016) and are assumed to be similar to the agreement between Korea and the US (KORUS), including some modifications based on analysis within the TPP. NTMs for goods are based on estimates by Kee, Nicita, & Olarreaga (2008) updated in 2012 and the services barriers are based on estimates by Fontagné, Mitaritonna, & Signoret (2016). Only 3/4s of measured barriers are considered as actual trade barriers, the rest is assumed to represent quality-increasing regulations (e.g., product safety standards). Meanwhile only 3/4 of the remaining NTMs in the case of goods and 1/2 in

[6] 2017 is not a realistic date for the start of implementation of commitments of FTAs, but the results would not be much affected if we selected date 2-3 years in the future due to long period of implementation, backloading of commitments and assuming that the economy would not undergo dramatic changes over the next few years. As such the results in 2030 should be interpreted as the impacts 12 years after the beginning of implementation period.

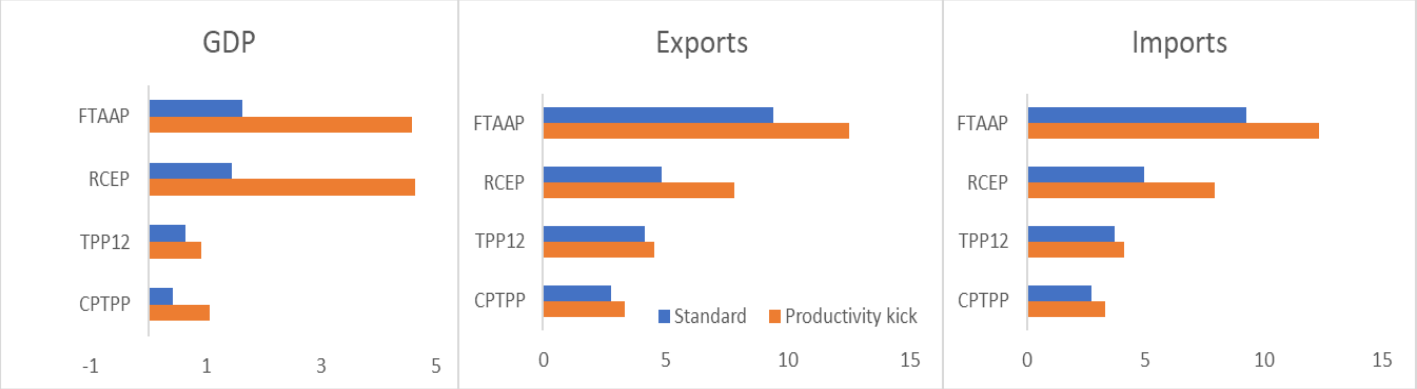
the case of services are assumed to be actionable (i.e., politically feasible in a trade agreement). The rest of NTMs are assumed to be beyond the reach of politically viable trade policies.

Simulation results

Economy-wide impacts of multiregional FTAs

Table 1 and Figure 2 present aggregate macroeconomic results for the four considered FTAs - CPTPP, TPP12, RCEP and FTAAP, while Tables 4-7 and Figures 3-6 provide estimations at the country level. The simulated scenarios are differentiated by the number of signatory countries and the extent of tariffs and NTMs decline in accordance with trade liberalization commitments.

Figure 2. Aggregate macroeconomic impact of potential FTAs on member economies by 2030 (percent deviations from the baseline)



Source: Authors' estimates

Table 1. Aggregate impact of potential FTAs on their member states by 2030 (deviations from the baseline in billion $ and percent)

		Standard simulations				Simulations with productivity kick			
		CPTPP	***TPP12***	***RCEP***	***FTAAP***	***CPTPP***	***TPP12***	***RCEP***	***FTAAP***
GDP	%	0.4	0.7	1.5	1.6	1.1	0.9	4.6	4.6
	bln $	*74.3*	*261.1*	*653.5*	*1,151.9*	*183.6*	*373.6*	*2,074.8*	*3,226.9*
Income	%	0.9	1.1	2.1	2.8	1.4	1.3	4.5	5.0
	bln $	*168.7*	*482.5*	*966.7*	*2,082.4*	*266.1*	*595.5*	*2,039.1*	*3,774.8*
Exports	%	2.8	4.1	4.9	9.4	3.4	4.6	7.8	12.5
	bln $	*127.5*	*322.8*	*561.1*	*1,459.5*	*155.5*	*354.2*	*903.1*	*1,945.2*
Imports	%	2.7	3.7	4.9	9.3	3.3	4.1	8.0	12.4
	bln $	*127.2*	*324.8*	*552.9*	*1,487.6*	*154.8*	*356.8*	*890.3*	*1,985.9*

Source: Authors' estimates (Note: GDP - Real GDP at market price, Income - Nominal GDP at market price, Exports - Nominal exports excl intl trade and transport, Imports - Nominal imports CIF).

The model simulations project positive aggregate macroeconomic impacts for all potential integration alternatives – CPTPP, TPP12, RCEP and FTAAP. According to Table 1, FTAs with a wider membership and larger scale are expected to produce higher aggregate economic gains in terms of increased GDP and trade flows. Wider agreements enable a better access to a larger number of growing Asia-Pacific markets and therefore a better engagement in global value chains. In addition, the magnitude of FTA benefits depends on projected declines in trade barriers, as well as the level of trade protection prior to multilateral FTAs, the extent of trade flows not previously covered by other

preferential trade agreements. If a significant part of members' trade was already liberalized and subject to prior agreements, trade liberalization shocks from new FTA agreements will be lower.

The recently concluded CPTPP (after US withdrawal) has the lowest number of member countries among other scenarios, though it is quite ambitious in terms of trade openness. However, without US it will generate the lowest gains among potential integration alternatives. CPTPP is projected to increase the overall members' GDP by 0.4% as compared to baseline scenario for 2030 (or by $74 billion in absolute terms). All CPTPP members will be able to improve its economic performance, with Vietnam, Malaysia, Peru, and Singapore reaping the highest benefits (see Tables 4-7). Their GDP expansion will be driven by significant tariff and NTMs reductions and improved market access to their main CPTPP trading partners. Japan (the greatest economy within the CPTPP) presents the highest GDP increase in absolute terms – by $31 billion. While Mexico and Chile will experience the lowest GDP growth due to low share of trade with CPTPP in Mexico and already liberalized trade with Chile.

In case the US joins the TPP, it would generate additional $261 billion of overall GDP or a 0.7% GDP growth with respect to baseline conditions by 2030. Under TPP12 scenario, Vietnam, Malaysia, Japan, and Brunei would demonstrate the fastest growth among members, while Japan and the US will be the main beneficiaries in absolute terms ($107 billion and $87 billion, respectively). With TPP12 markets being a destination for about one third of total US exports, the US would have improved access to these markets – e.g., the estimated trade weighted NTMs that the US faces in TPP12 will decrease by 2 p.p. At the same time, Vietnam will enjoy the highest GDP and export growth of 3.6% and 20.7% respectively under TPP12 due to the biggest trade barriers reduction, both faced and imposed (e.g., trade weighted average tariffs faced by Vietnamese exporters in TPP12 markets would drop from 4.2% to 0.1%). Among all, Vietnamese exporters will benefit the most from improved market access to US market, accounting for about 50% of Vietnamese exports within TPP12 (apparel and textiles).

A 16-member RCEP agreement is expected to be the largest multiregional FTA currently under negotiation, with a collective GDP of more than $25 trillion. The RCEP countries account for almost half of the world's population, over 30 per cent of global GDP and over a quarter of world exports. The RCEP has a wider membership than CPTPP, including as it does, China and India, which account for over 60% of the collective GDP of the treaty, as well as all of the economies of ASEAN. However, unlike TPP-12, it does not include the United States.

We assume that RCEP would entail less ambitious commitments on trade barriers reduction compared to both the CPTPP and TPP12 (e.g., we assume that tariffs will be reduced by about 80% under the RCEP compared to almost 100% under CPTPP and TPP-12). Also, the initial level of protection is generally higher in RCEP countries (mainly, in India, China, and Korea), while many TPP-12 countries have liberalized among themselves on a bilateral basis.[7] Aggregate economic impacts from trade liberalization are predicted to be higher for the RCEP than to the CPTPP and the TPP12. RCEP' GDP gain is projected at $654 billion, a GDP increase of 1.5% by 2030 compared to the baseline. China, India, and Korea are projected to enjoy the highest GDP increase in relative terms. These countries' growth potential is stemming from the expected reduction in tariff and nontariff protection, both imposed and faced by them on RCEP markets – e.g., trade weighted average tariffs faced in RCEP markets by China will drop from 2.2% to close to zero (0.4%), while China's trade weighted average tariffs imposed on

[7] For example, the United States already has bilateral FTAs with Canada and Mexico (NAFTA), Australia, Chile, Peru, and Singapore.

RCEP members will be reduced from 2.7% to 0.5%. In absolute terms, China, India, Japan and Korea will reap the highest income benefits.

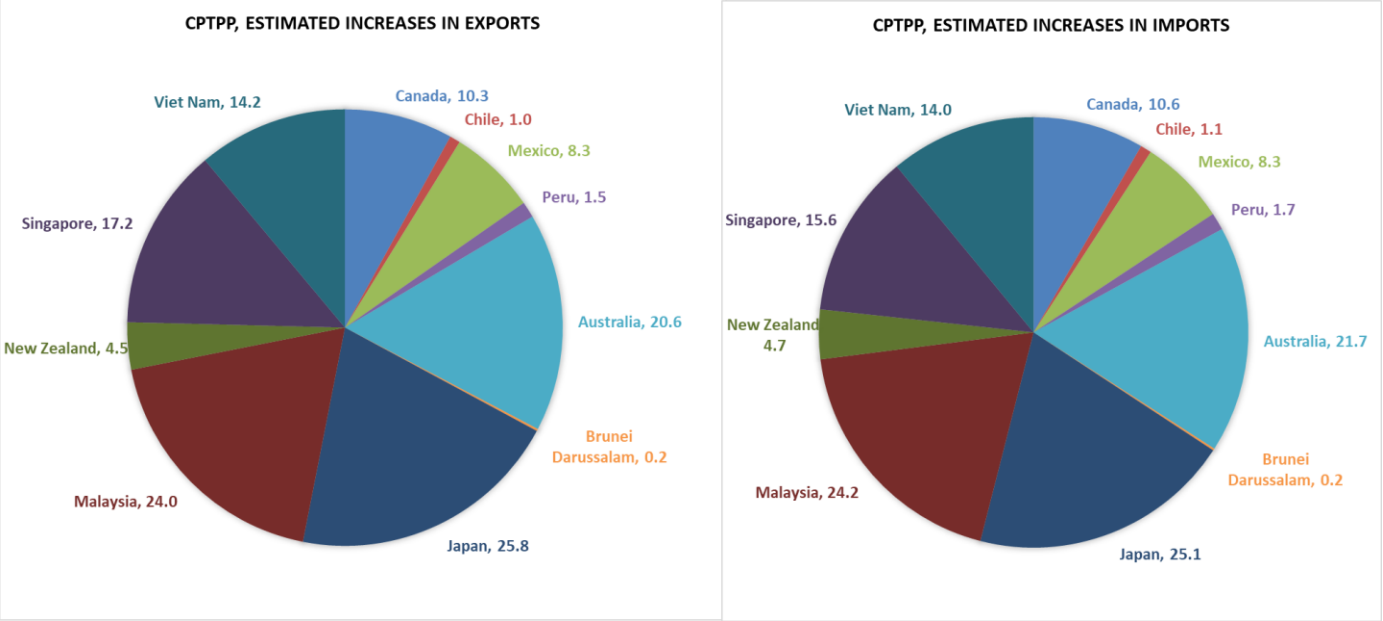
A potential FTAAP agreement would have the highest membership of 18 countries[8] and is expected to employ more ambitious trade liberalization as compared, for example, to the RCEP. According to the model estimations, the estimated increase of GDP would amount to 1.6% or $1,152 billion under standard assumptions - the highest level among all integration options in relative and absolute terms, which is due to high significance of trade with FTAAP members (FTAAP share in total members' trade exceeds 60%). China, Russia, Philippines, Korea, and Japan have the greatest potential to increase the GDP under the FTAAP, with highest gains for China and Russia amid their implementation of the projected ambitious trade liberalization, both in terms of tariff and nontariff barriers. China' GDP increase is estimated to amount 3.1% and Russia's 2.8% by 2030 as compared to the baseline. The US' participation in the FTAAP will also be beneficial – its GDP will growth by 0.6% or $134 billion in absolute terms.

Assumptions on a productivity boost from trade liberalization may considerably increase members' benefits as compared to the standard simulations (see Table 1). For example, the estimates of GDP gains with productivity kick assumptions, can be more than doubled for CPTPP members, and can be tripled for FTAAP members.

Trade liberalization will facilitate the increase in total exports and imports of the considered FTAs ranging from almost a 3% increase for CPTPP members to over 9% for FTAAP members as compared to the baseline by 2030. Again, the FTAAP is expected to be the most successful agreement in boosting its members' international trade due to its great coverage and trade links among members (see Table 1). The highest percentage increase in exports will be observed in Vietnam, Malaysia and New Zealand under the CPTPP and TPP12; in Japan, New Zealand, Australia – under the RCEP, and in Japan, Vietnam and Russia under the FTAAP (see Tables 6 and 7). In dollar terms, the largest increases in exports and imports are expected to go mostly to relatively large markets, as well as countries that will experience the greatest reductions of faced and imposed trade barriers respectively (see Figures 3-6). For example, the largest market opportunities caused by the RCEP market access will be in China, India, Japan and Korea, at the same time these countries will experience the largest increases in their exports.

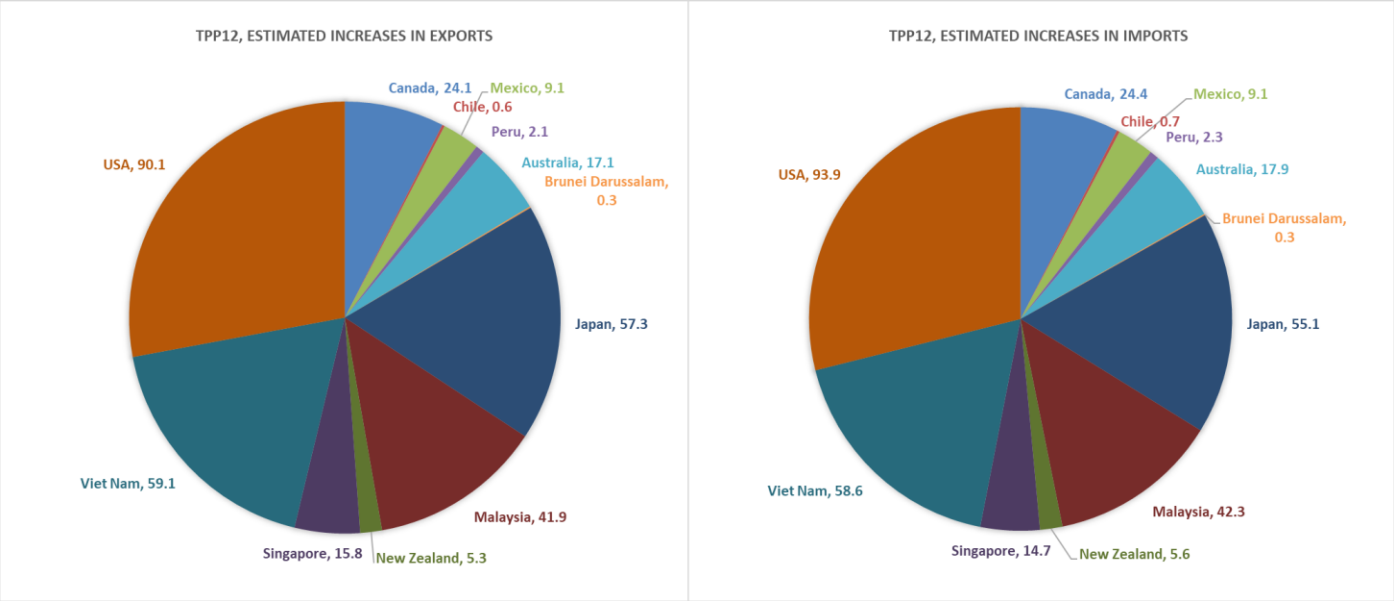
[8] In our simulation we include 18 out of 21 countries negotiating FTAAP: Australia, Brunei Darussalam, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, USA, Vietnam, Singapore, Korea, Indonesia, Philippines, Thailand, China and Russia. We are not able to include Taiwan, Hong Kong and Papua New Guinea as those are part of the rest of the word (ROW) in the model aggregation.

Figure 3. Estimated increases in exports and imports under the CPTPP, billion $



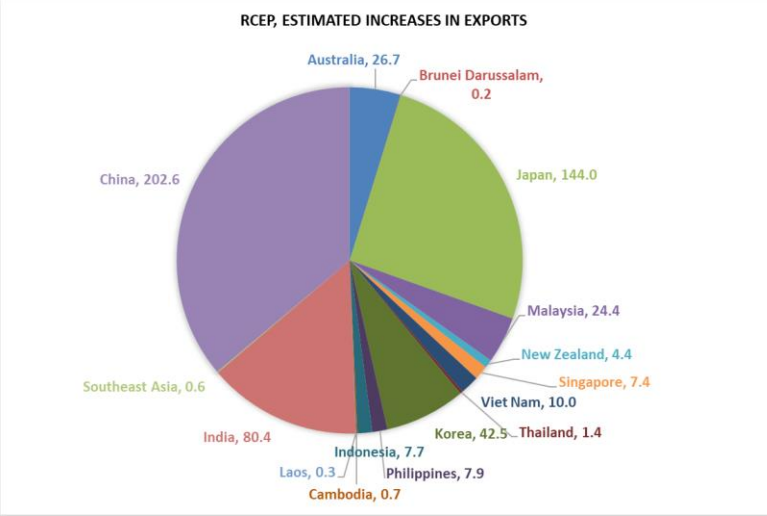
Source: Authors' estimates

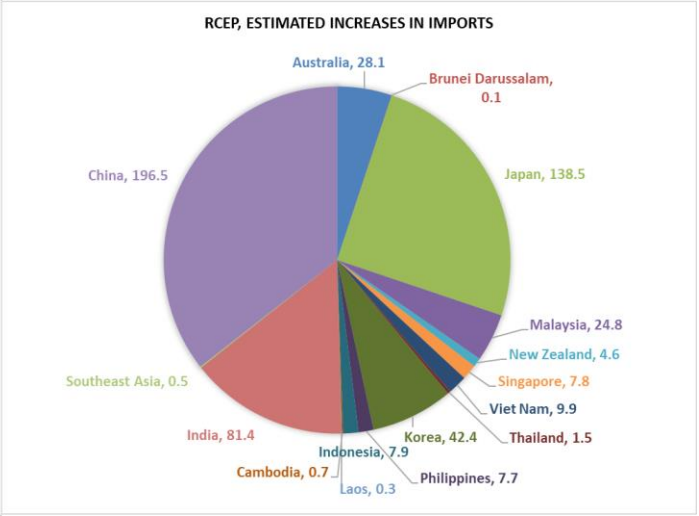
Figure 4. Estimated increases in exports and imports under the TPP12, billion $



Source: Authors' estimates

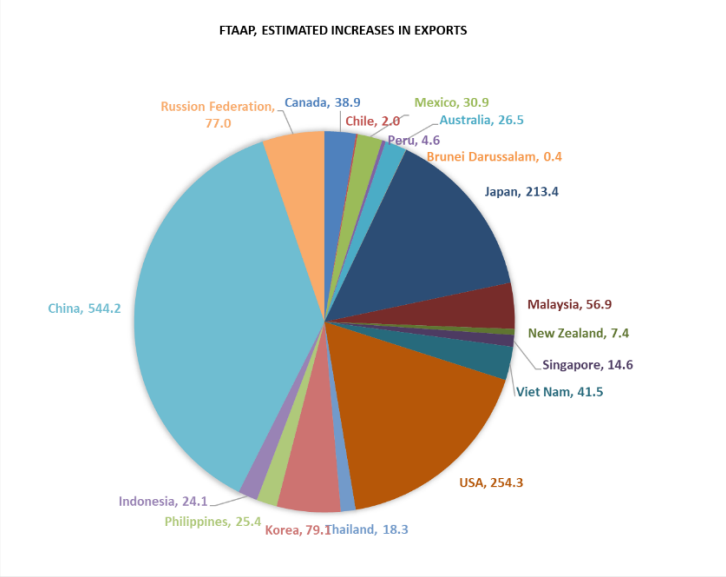
Figure 5. Estimated increases in exports and imports under the RCEP, billion $

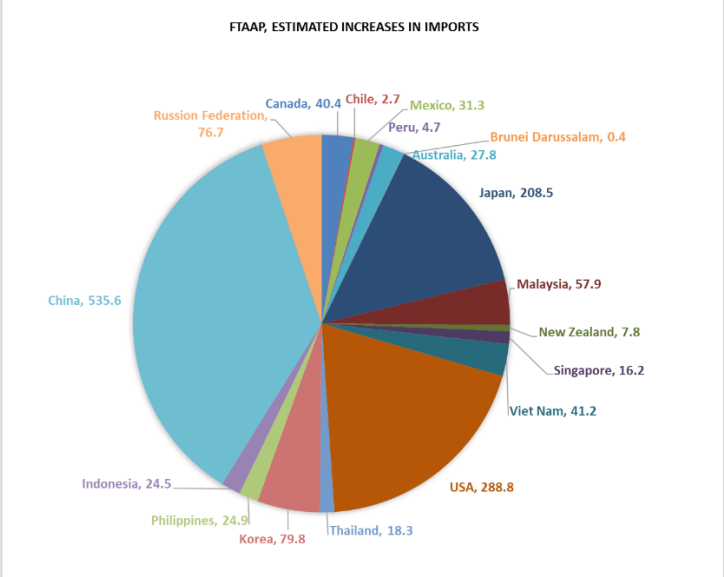




Source: Authors' estimates

Figure 6. Estimated increases in exports and imports under the FTAAP, billion $





Source: Authors' estimates

In terms of global influence of the considered FTAs, the one with greatest potential is the FTAAP with an expected world GDP increase of almost 1% ($1,162 billion) as compared to baseline conditions in 2030, followed by the RCEP – 0.6% ($674 billion), the TPP12 – 0.2% ($289 billion) and the CPTPP – 0.1% ($110 billion) (see Table 4). If the productivity kick assumption is considered, the world GDP may grow even more (see Table 5).

Estimated tariffs and not-tariff measures

Figures 7-14 summarize changes in market access based on tariffs and NTMs calculated for each FTA using current and projected trade flows between trading partners. Although applied tariffs between Asia Pacific countries at the aggregate country level are in most cases already low due to existing bilateral and regional FTA agreements, ex ante tariff protection is still high for certain sectors (like for agriculture in Japan**).** In addition, the prior level of trade protection was higher under the RCEP compared to CPTPP/TPP, mostly due to greater trade barriers in RCEP's largest markets – India and China. Overall, NTMs are greater obstacles to trade than tariffs across all FTAs. The implementation of FTA provisions on sanitary and phytosanitary measures, technical barriers to trade, investment, trade in services, custom administration, trade facilitation, and others are expected to align regulatory requirements and to reduce NTMs among members. Since CPTPP/TPP agreements have stronger commitments in these spheres, it is projected that CPTPP/TPP agreements will result in greater reduction of NTMs compared to the RCEP.

Under CPTPP and TPP12 tariffs are reduced to minimum levels and NTMs are reduced significantly across all countries. However, some CPTPP members (such as Peru, Chile, Mexico, and Singapore) already face modest or close to zero tariffs when trading with CPTPP and TPP partners. At the same time, Canada, New Zealand, Vietnam, and Japan will benefit from the greatest declines in average trade weighted tariffs faced in exporting to CPTPP economies (e.g. from 3.1% to 1.7% for Canada). In turn, Vietnam, Malaysia, Canada will reduce their tariff protection the most (e.g. Vietnam's average trade weighted tariffs imposed over CPTPP partners will be down by 2.8 percentage points). **In the sectoral breakdown, Food, beverages and tobacco, Textiles, and Transport equipment are the most protected across most CPTPP member countries and will face the greatest tariff reductions.** Certain countries apply higher tariff protection for some specific sectors, like Japan for Agriculture (import tariff will be reduced from 7.5% to 0.4%), Canada and Mexico for Wearing apparel (from 20.8% to 0.9% in Mexico), Vietnam for Other manufacturing (from 4.3% to 0.2%). Trade regimes of CPTPP countries are more restrictive in terms of applied NTMs, with Malaysia, New Zealand and Peru having the highest level of imposed NTMs over CPTPP partners. Exports from Canada, New Zealand, Singapore, Australia, and Vietnam observe the highest NTMs on CPTPP markets (up to 16% for New Zealand and 14% for Canada) and will experience the greatest NTMs declines. It is projected that there will be significant reductions of the most restrictive NTMs in Food, beverages and tobacco (the CPTPP establishes high sanitary and phytosanitary requirements), Agriculture, Machinery and equipment nec., and all Services exports (services face the highest NTMs in most TPP countries).

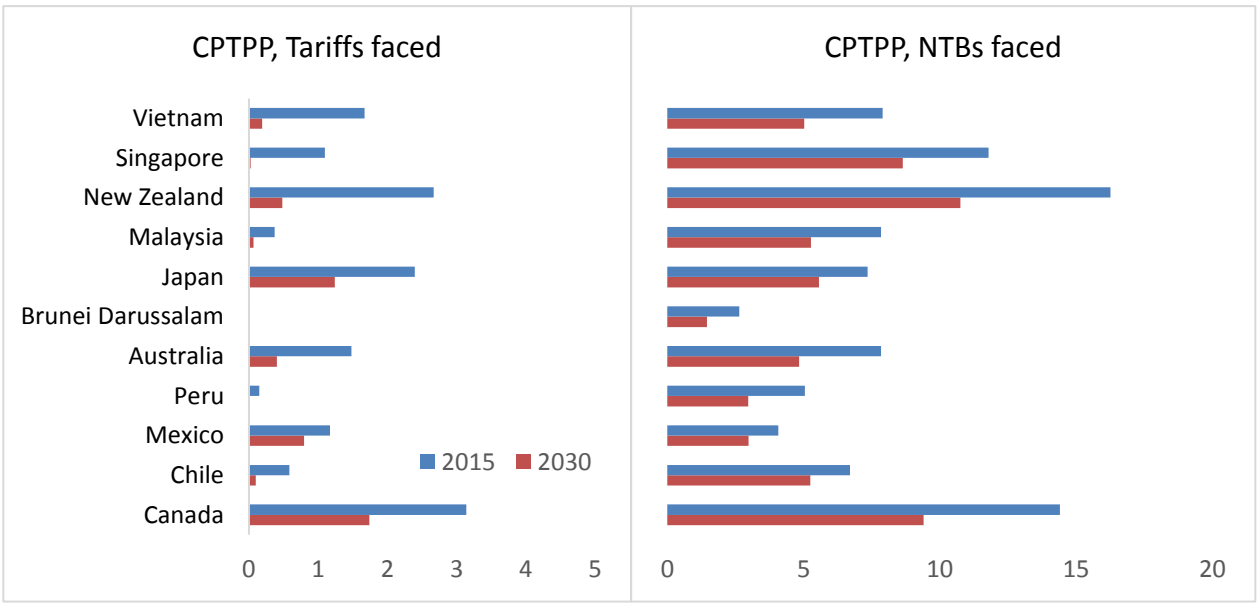
Although assumptions on trade opening for TPP12 member states are the same as per CPTPP, for many of them (Canada, Chile, Mexico, Peru, Singapore, and Australia) the initial average trade weighted tariffs (both imposed and especially faced on TPP12 markets) are lower. This is due to **large trade volumes with the US that already shares bilateral FTAs and low tariffs with them** (initial US average trade weighted tariff imposed to TPP12 partners was 0.5%). That is why the greatest tariff and non-tariff changes on TPP12 markets would happen to countries that are not FTA partners with the US, such as Vietnam, Malaysia, Japan, Brunei, and New Zealand (with the highest imposed tariff reductions in Vietnam, Malaysia, Japan and Brunei; non-tariff reductions - in Malaysia, Vietnam, Japan, and New Zealand). Overall, tariff and non-tariff barriers will observe the largest reductions in Food, beverages and tobacco, Wearing apparel and Textiles, Agriculture, and Services on TPP12 markets. Vietnamese exporters would benefit the largest decline in both tariff and NTM barriers faced in TPP12 (tariffs from 4.2% to 0.1%, NTMs from 10.5% to 5.1%) due to significant decline of the existing tariff and NTMs in

the US on wearing apparel and textiles - Vietnamese major exports to US. The US already imposes on average lower tariff and non-tariff restrictions than its TPP12 trade partners (except specific sectors like Textiles, Wearing apparel, and Services). By joining TPP12, US access to TPP12 markets would be further improved: tariff restrictions for the US on TPP12 markets will go down from 1.1% to 0.2%; NTMs faced by US exports in TPP12 partners will also decline – from 8.6% to 6.4%.

Less tariff liberalization is projected in the RCEP as compared to the CPTPP/TPP, however initial tariff protection is higher in many RCEP countries. The largest RCEP markets - India, China, Australia, and Korea - maintain the greatest tariff protection, which is supposed to be reduced considerably under the agreement. For example, initial average trade weighted tariffs imposed by India and China over RCEP countries are 5.2% and 2.7% (which are projected to decline to 1.3% and 0.4% respectively). The most protected sectors in India from RCEP imports include: Food, beverages and tobacco (17.2%), Textiles (12.1%), Wearing apparel (9.3%), Agriculture (8.9%); while China protects the most: Transport equipment (11.3%), Agriculture (7.5%), and Textile (4.5%). Such tariffs pose important restrictions for other RCEP countries that have large trade volumes with India and China. At the same time, such countries as Indonesia, Philippines, Thailand, Cambodia, and Laos already maintain and face low level of tariff protection of about or lower than 1% average trade weighted tariffs on those markets. **Trade among RCEP member states is still heavily restricted by NTMs.** The highest level of imposed NTMs occur in India, Philippines, Malaysia, New Zealand, Myanmar, and Vietnam – up to 15% in ad-valorem equivalents (15.3% in India). However, NTMs are much higher in some specific sectors such as Food, beverages and tobacco (40% in India, 26% in Malaysia), Wearing apparel (17% in India and 19% in Malaysia), Electronic equipment (29% in India), Textiles (24% in Philippines), Services (communication and business services - 99% in India, 73% in Philippines), etc. As a result of the RCEP, barriers will be reduced, with the biggest reductions expected in India, Philippines, and Malaysia. However, their final NTMs will still be substantial.

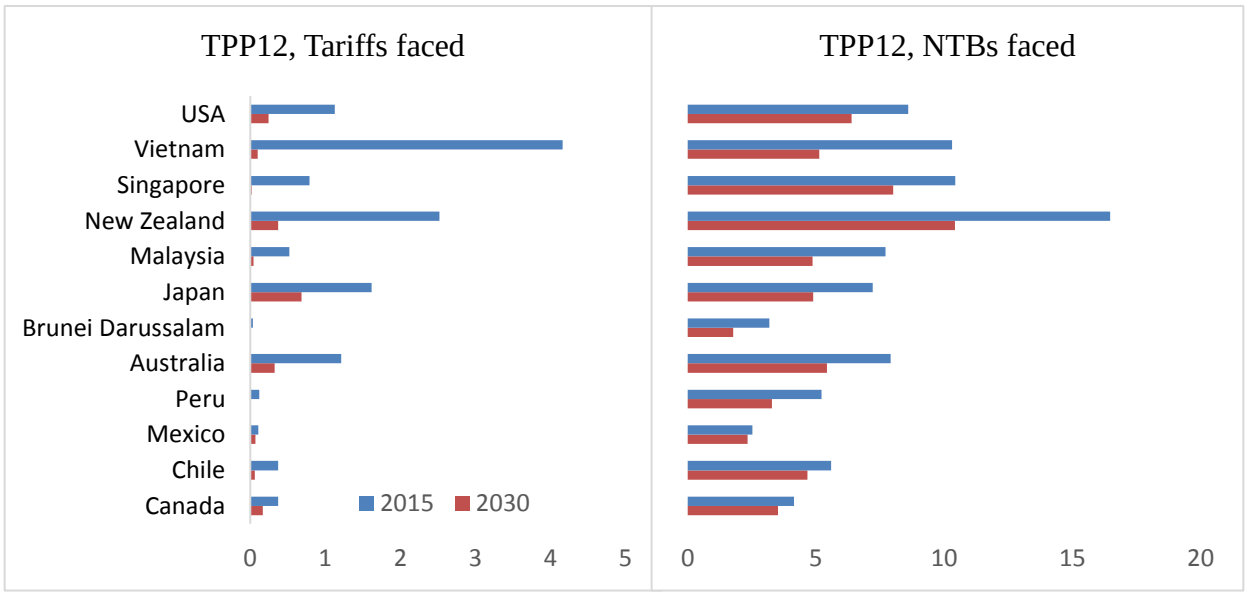
Trade liberalization under the FTAAP is expected to be the most significant assuming that all members will maintain average tariff rates no greater than 1% by 2030. As such, FTAAP implies ambitious tariff liberalization plans for Russia, Korea, and China, whose initial tariffs applied for FTAAP members were substantial compared to other members (9.9%, 4.8% and 2.9% respectively). Russia is expected to open its market the most, mainly in sectors such as Food, beverages, tobacco, Transport equipment, Other manufacturing, Textiles, and Wearing apparel, where its initial average trade weighted tariffs exceeded 10%. China is supposed to decrease most of its tariffs on Transport equipment, Textiles, and Agriculture; Korea – on Agriculture, and Food, beverages, and tobacco. At the same time, Russia already faces very low tariffs protection on its products to FTAAP markets (1.1%), due to its export structure dominated by energy products. NTMs will also decline substantially within FTAAP from their initial levels, especially in Russia, Philippines, Malaysia, Japan and China. By participating in this agreement, countries will also benefit from reduced NTMs and improved market access to huge FTAAP markets, especially in in Food, beverages, tobacco, Electronic equipment, Machinery and equipment nec, Transport equipment, Agriculture, Textiles, and Services.

Figure 7. Trade barriers faced by CPTPP members before and after trade liberalization within the block, trade weighted averages in %



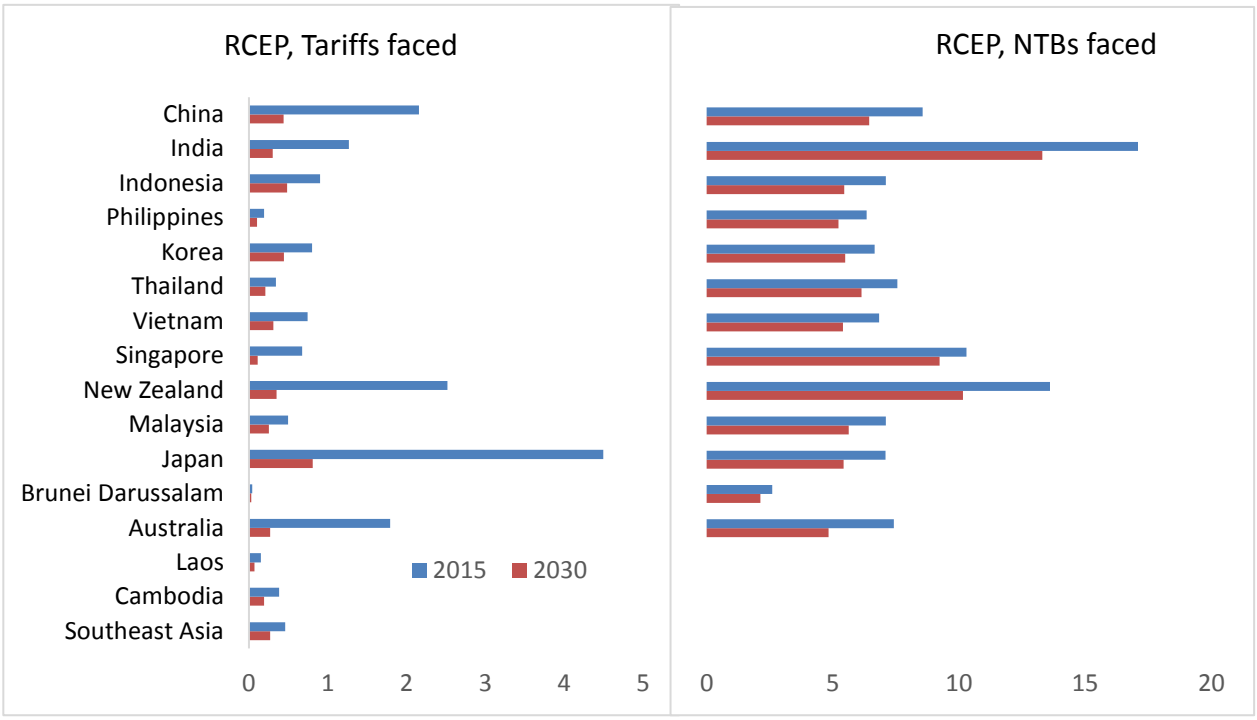
Source: Authors' estimates

Figure 8. Trade barriers faced by TPP12 members before and after trade liberalization within the block, trade weighted averages in %



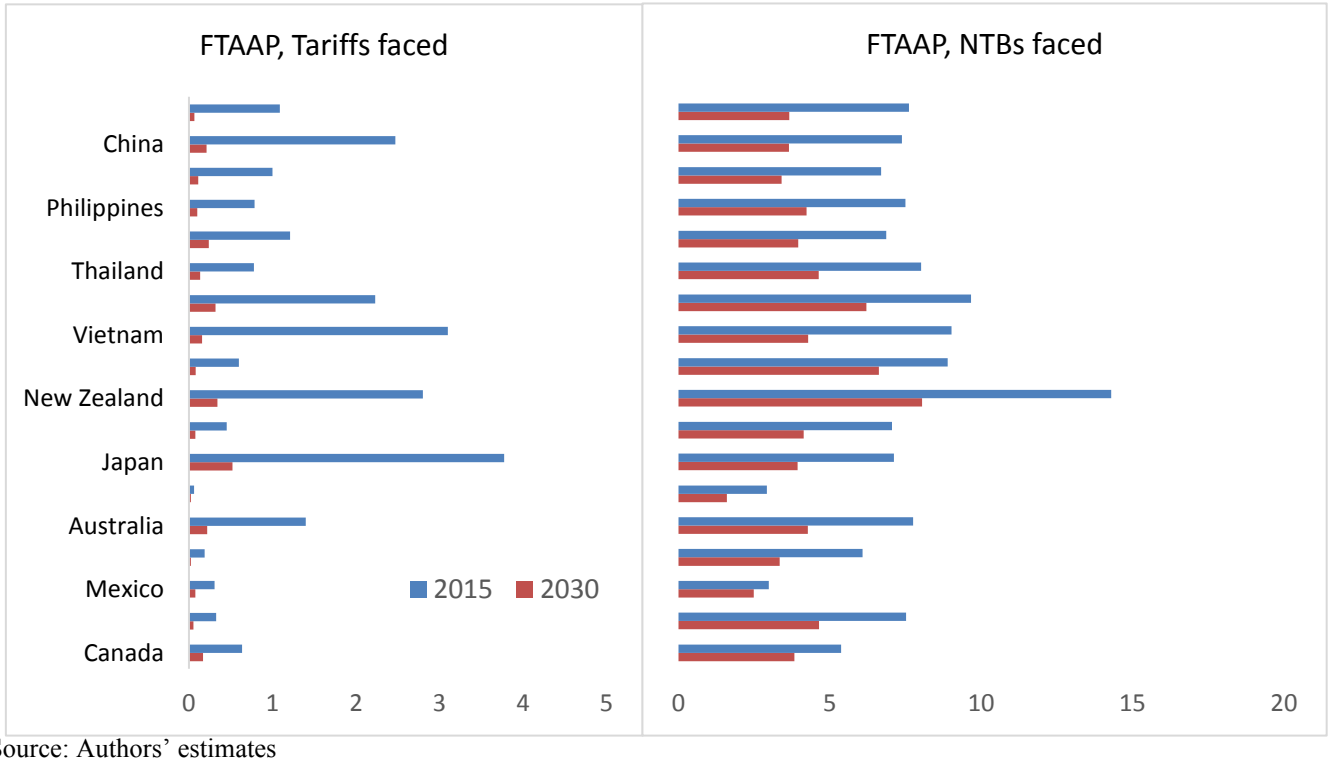
Source: Authors' estimates

Figure 9. Trade barriers faced by RCEP members before and after trade liberalization within the block, trade weighted averages in %



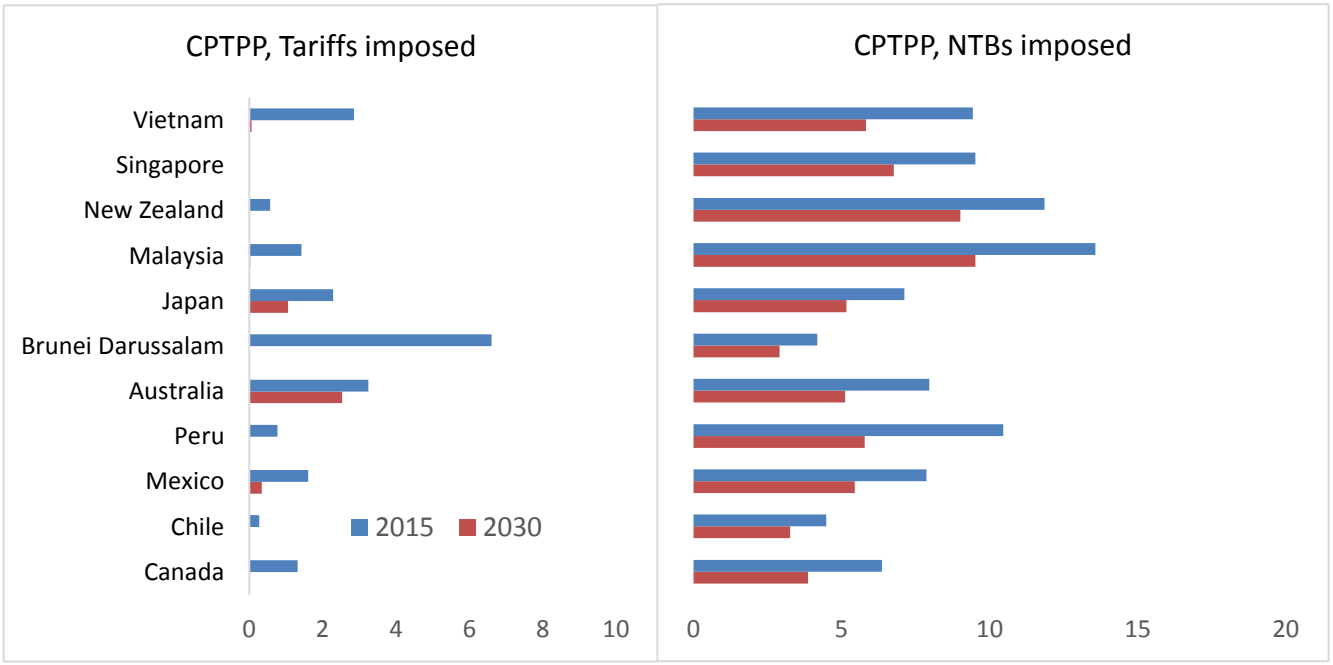
Source: Authors' estimates

Figure 10. Trade barriers faced by FTAAP members before and after trade liberalization within the block, trade weighted averages in %



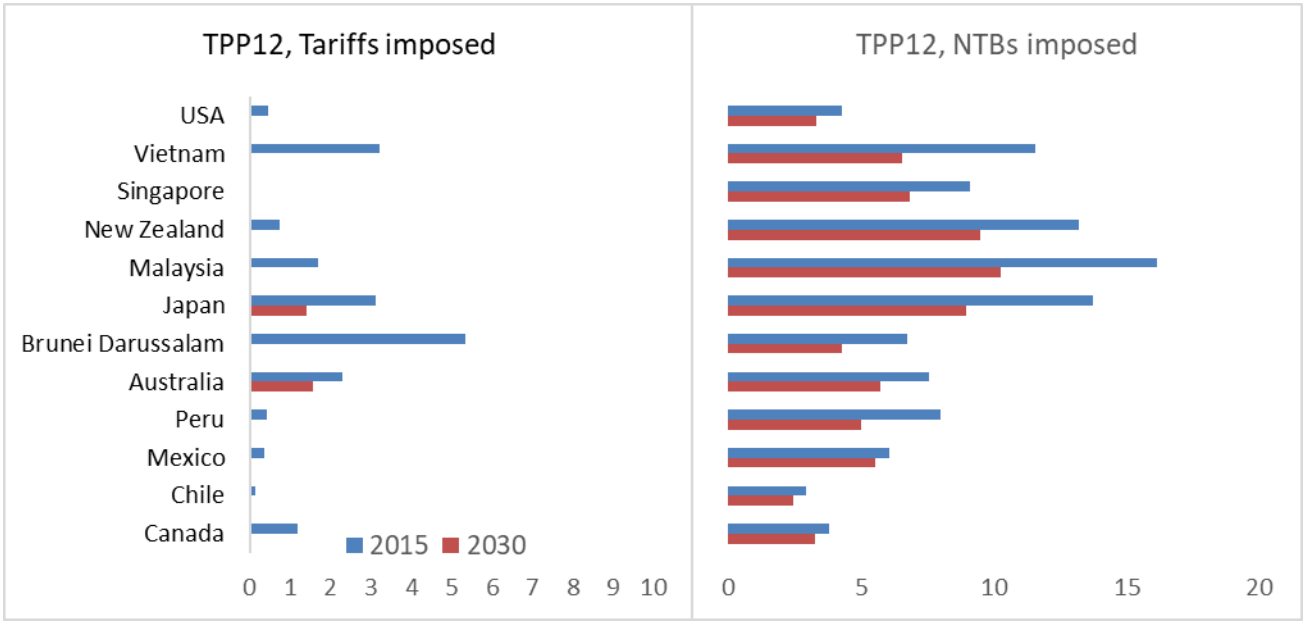
Source: Authors' estimates

Figure 11. Trade barriers imposed by CPTPP countries before and after trade liberalization to imports from member states, trade weighted averages in %



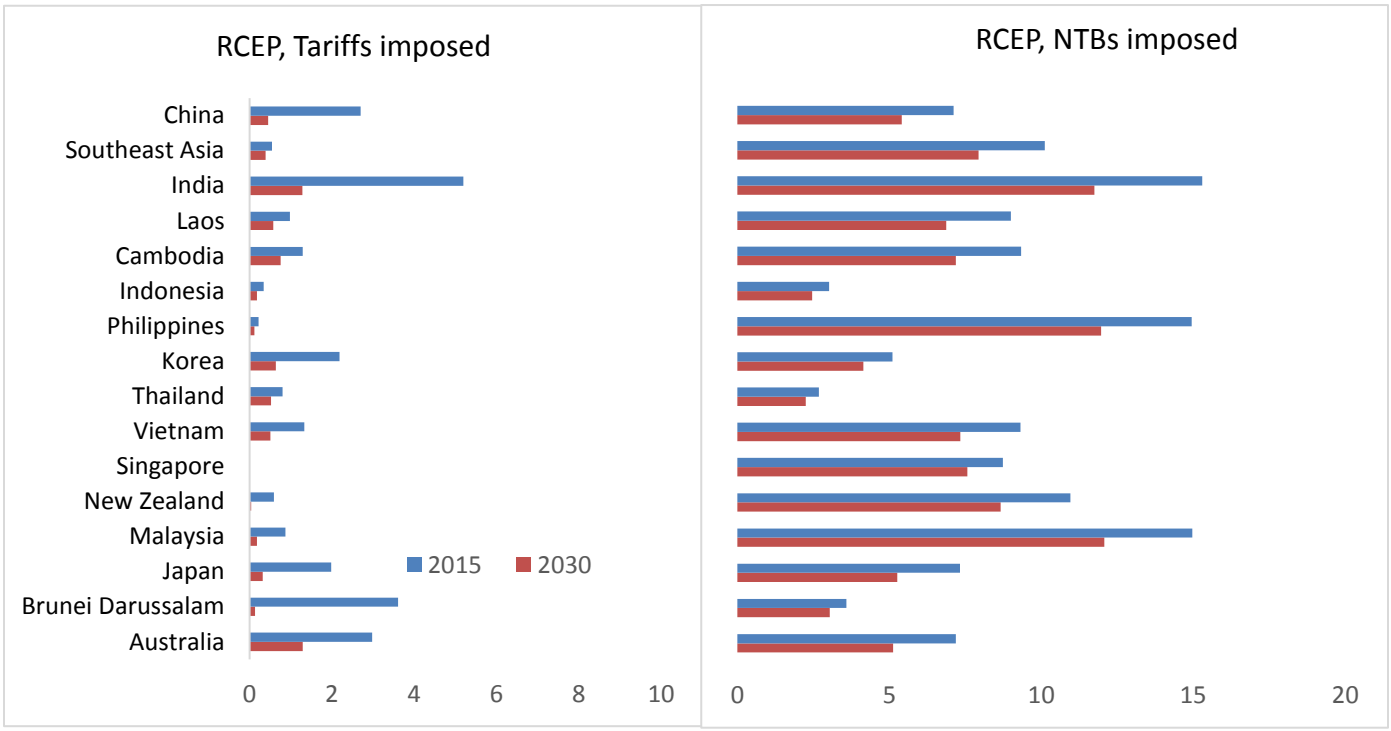
Source: Authors' estimates

Figure 12. Trade barriers imposed by TPP12 countries before and after trade liberalization to imports from member states, trade weighted averages in %



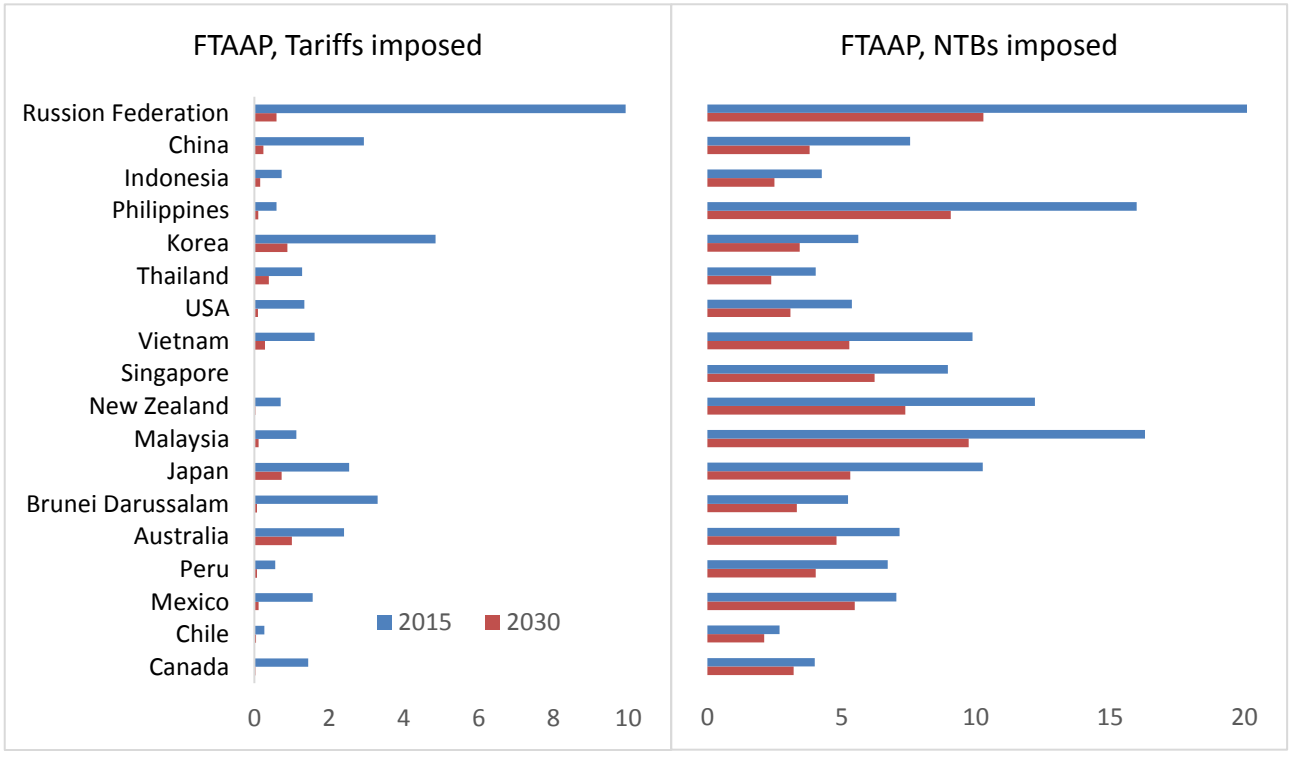
Source: Authors' estimates

Figure 13. Trade barriers imposed by RCEP countries before and after trade liberalization to imports from member states, trade weighted averages in %



Source: Authors' estimates

Figure 14. Trade barriers imposed by FTAAP countries before and after trade liberalization to imports from member states, trade weighted averages in %



Source: Authors' estimates

Sectoral changes

Figures 15 to 18 show sectoral effects of the simulated FTAs on output and trade of the members states as compared to the baseline in 2030.

The highest growth of exports and output under the CPTPP are projected to occur in food and beverages, wearing apparel, and textiles. Due to a strong reduction in tariffs and NTMs, food and beverages will benefit the most in terms of growth rates and in absolute/dollar increases. Their collective exports will expand by 28% relative to baseline conditions in 2030, boosting production within the CPTPP by almost 5%. Exports of Wearing apparel and Textiles will expand by 13% and 6% in total, originating mostly from Vietnam and Malaysia. Reduction of barriers will further deepen Vietnam and Malaysia specialization in these sectors. Other sectors that will see a substantial output and export increase in dollar value include: Transport equipment (largely from Japan) and Chemical, rubber, plastic products (from Malaysia and Singapore), Machinery and equipment nec (from Malaysia and Singapore). The CPTPP will also stimulate the growth of services sectors, especially Trade and transport services - mainly due to a higher demand on these services by all other sectors as they are used as an input in all sectors. Reduction of imposed trade barriers is also projected to increase imports in all sectors, with the highest changes in Food processing, Agriculture, Wearing apparel, Textiles, and all Services. Import expansion in these sectors will be partly induced by a stronger demand on cheaper intermediate inputs from other CPTPP members (especially in Textiles and Wearing apparel having high shares of intermediate inputs in their output). For instance, textile sector in Vietnam will observe significant increases in imports of textile products to higher demand from the booming apparel sector.

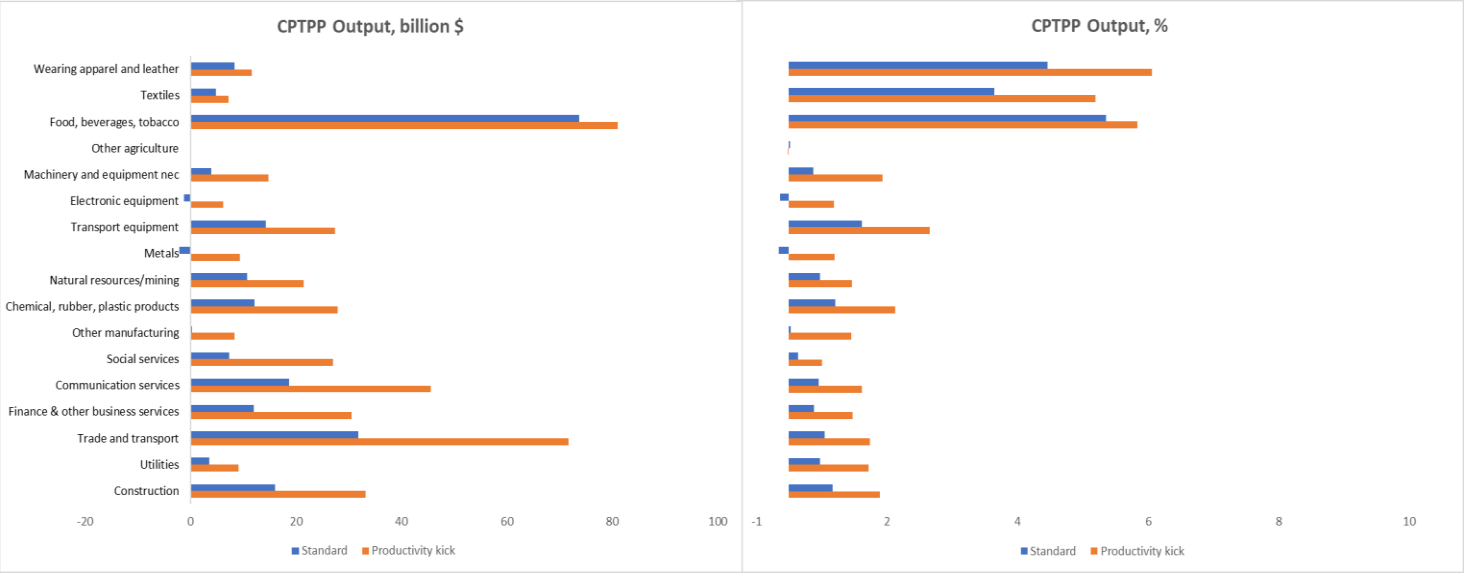
Under the TPP12, the estimated largest gains in exports and production would be observed in Wearing apparel, Textiles, and Food and beverages. Due to a significant decline of trade barriers in the US market, Wearing apparel will have the highest growth - a 88% increase in exports ($79 billion) that will boost its production by 21% ($89 billion). Exports and production of Textiles under the TPP12 were estimated to grow rapidly as well – by 35% and 9% respectively. Vietnam will be the major beneficiary of this expansion - its production of Wearing apparel and Textiles will increase by more than $100 billion. At the same time, the US and Malaysia will also increase their exports and production of Wearing apparel due to better market access and booming trade in these products among TPP12 members. However, production of textile products will decrease in the US as a result of increased imports of cheaper inputs and intermediates for apparel and textile production. Food and beverages will provide largest benefits for TPP2 members in dollar terms – their exports will increase by $130 billion (up by 32%). The US, Australia, Malaysia, and Japan are projected to contribute the most to this expansion after significant decline in trade barriers faced by them on TPP12 markets. Other important sectors with significant dollar gains include Chemical, rubber, plastic products in Japan, Malaysia, and the US and Transport equipment in Japan, Mexico, and Peru. At the same time, declines in exports and production are expected for Chemical, rubber, plastic products in Vietnam, and for Transport equipment in the US and Vietnam. All Services sectors will have growth, especially Trade and transport services (mostly in Japan and the US).

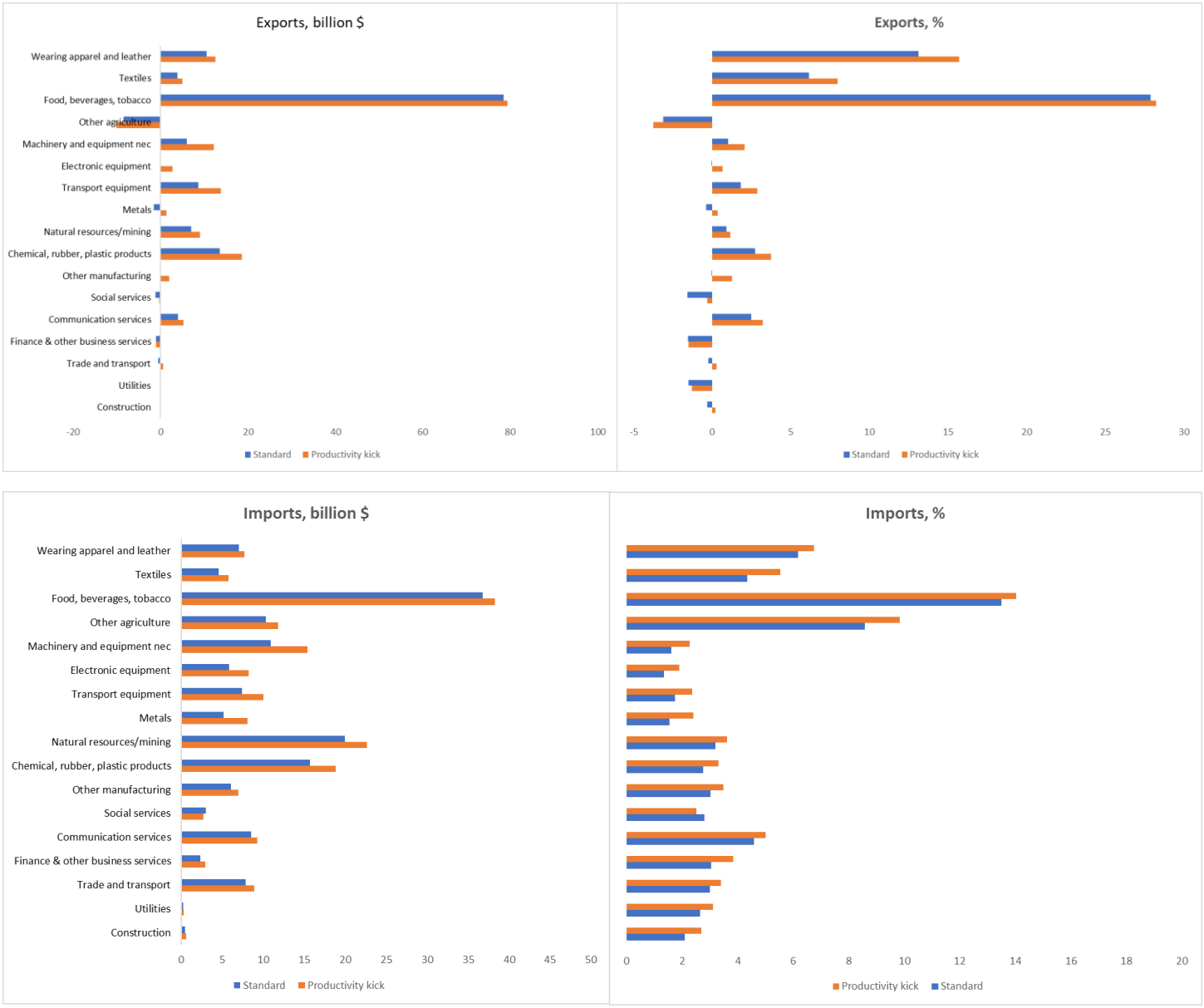
The model simulations suggest that due to better access to large RCEP markets the most dynamic export growth will be experienced by the following sectors: Food and beverages – up by 23.4%, driven by increases in Korea, Australia, Malaysia, Indonesia, and China; Textiles – by 6.7%, driven by in Japan, China, and India; Natural resources/mining – by 6.2%, driven by in Japan, China, and India; Metals – by 5.8%, driven by China, India, and Australia; Chemical, rubber, plastic products – by 5.5% driven byn

China, Japan, India, and Malaysia. In addition, the increase in exports of Machinery and equipment nec. (by 4% or $77 billion) will be largely captured by China ($55 billion), followed by Japan, India, Malaysia as they will experience the greatest declines in faced trade barriers on the RCEP markets; while exports and production in Korea is projected to decline. The RCEP will boost significant expansion of Trade and transport services that are projected to obtain the largest production increase in absolute terms (by $235 billion as to the baseline in 2030), mostly in China, India, and Japan. This is explained by the significant role of these services in total output of these member states (for instance, 18% in Japan and India).

The FTAAP is projected to facilitate the substantial growth of Wearing apparel and Textiles sectors due to significant declines of trade barriers in the US market – their exports will go up by 27% while total production will increase by 7.7% and 6.3%. The major increases in these sectors will happen in Vietnam, Philippines, China, and Indonesia (and Japan for Textiles). At the same time, there will be a reduction of Textiles and Wearing apparel production in Mexico, Canada, and US markets by 12%, 35% and 21% due to strong increase of imports in these sectors after trade liberalization (the US textile and apparel exports are still projected to grow). Trade and transport services are the leader in absolute gains of output ($443 billion), with large contributions from China, the US, and Russia. The exports of Food and beverages may expand by $298 billion (by 35.5%) mostly in the US, Korea, Russia, and Canada as they will experience the greatest declines in faced trade barriers on the FTAAP markets, while it may decline in Mexico, Chile, Thailand, and Indonesia as they faced relatively low trade barriers prior to the FTAAP (relative competitiveness of their products will be undermined). Other sectors and countries that are projected to benefit from the FTAAP: Transport equipment (China, Japan, Mexico, and Thailand), Metals (China, Japan, and Malaysia), and Chemical, rubber, plastic products (China, Japan, and Singapore). Compared to other simulated FTAs, the FTAAP offers a more balanced distribution of sectoral growth among sectors.

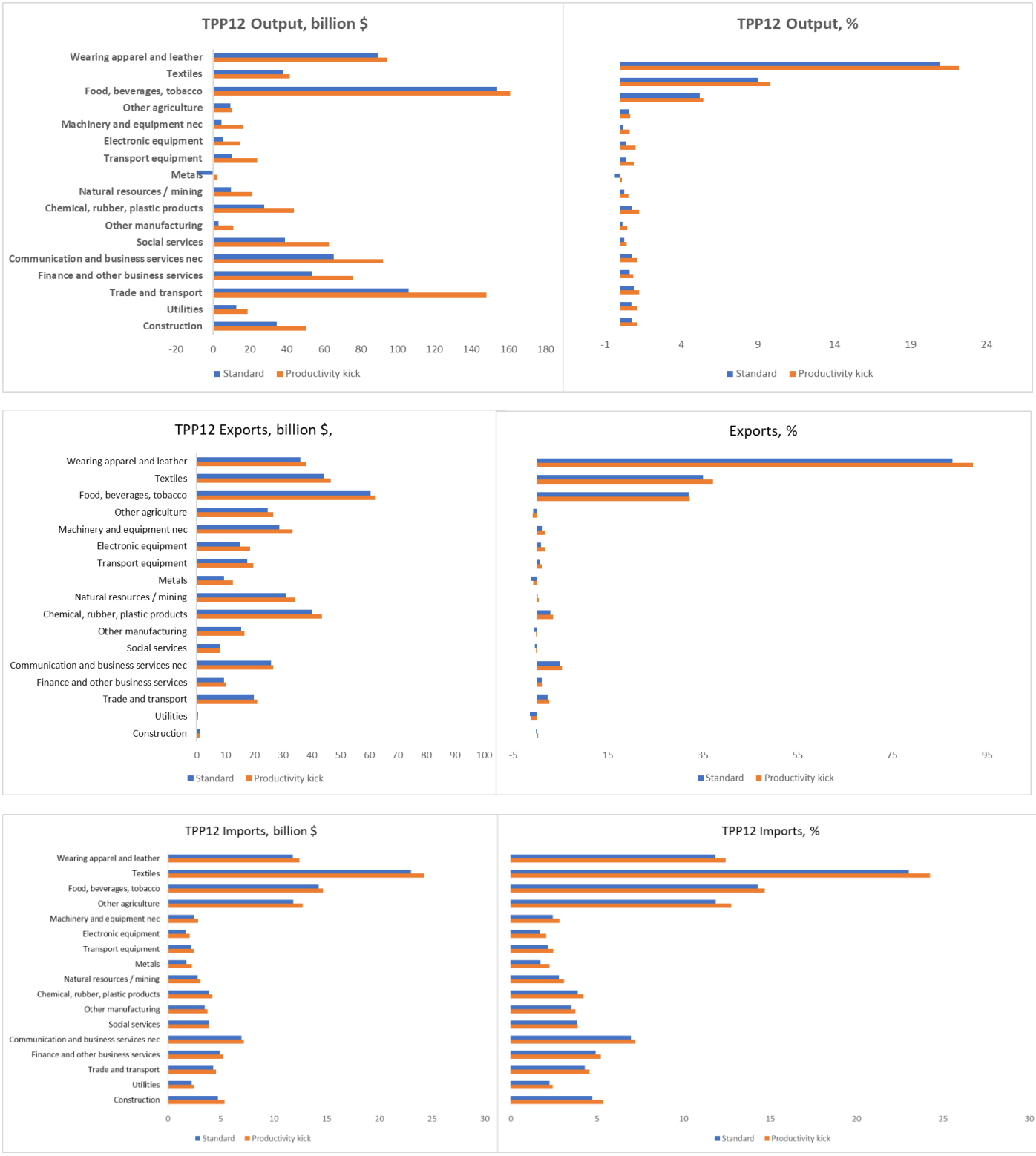
Figure 15. Sectoral changes under the CPTPP, % relative to the baseline in 2030





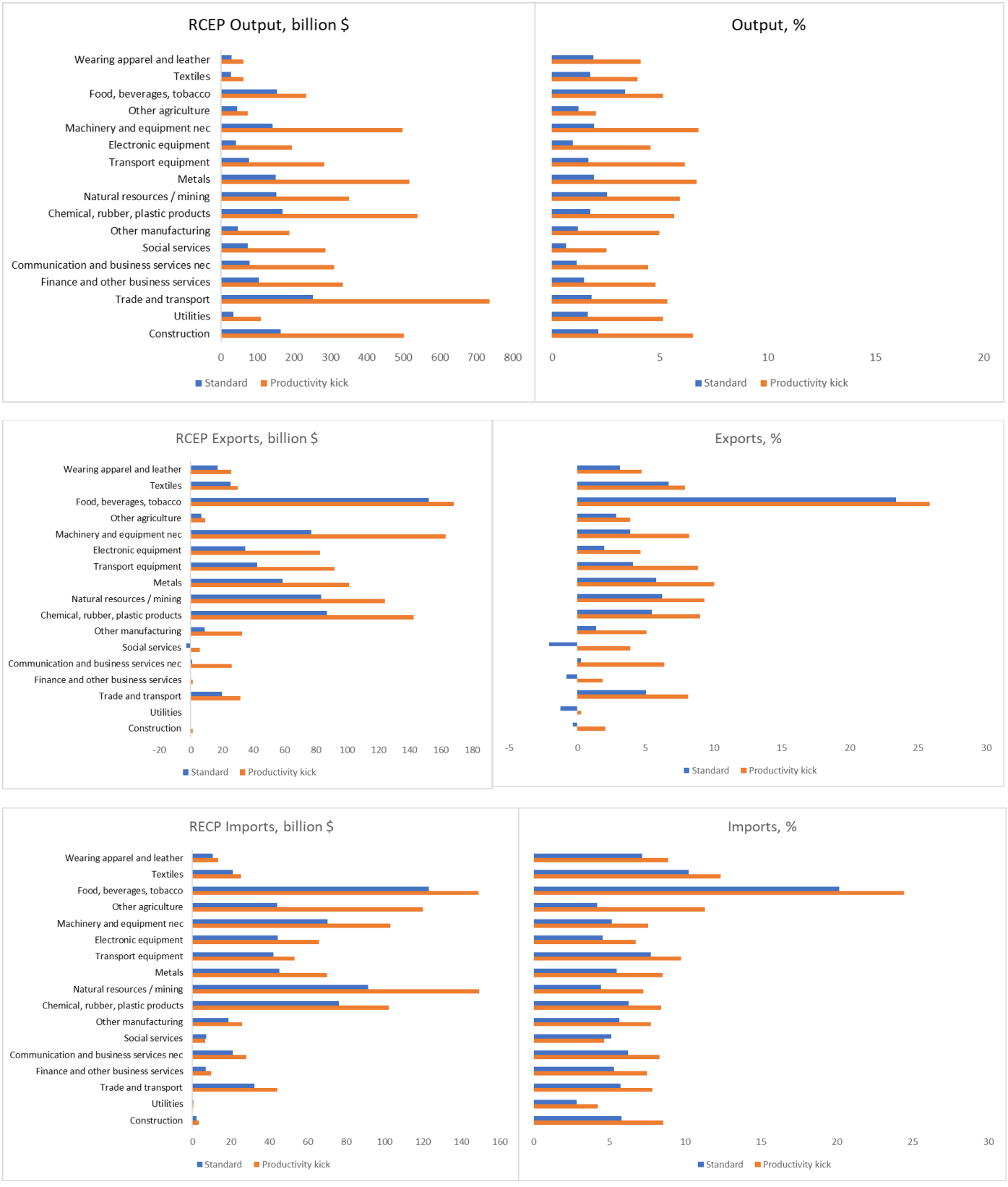
Source: Authors' estimates

Figure 16. Sectoral changes under the TPP12, % relative to the baseline in 2030



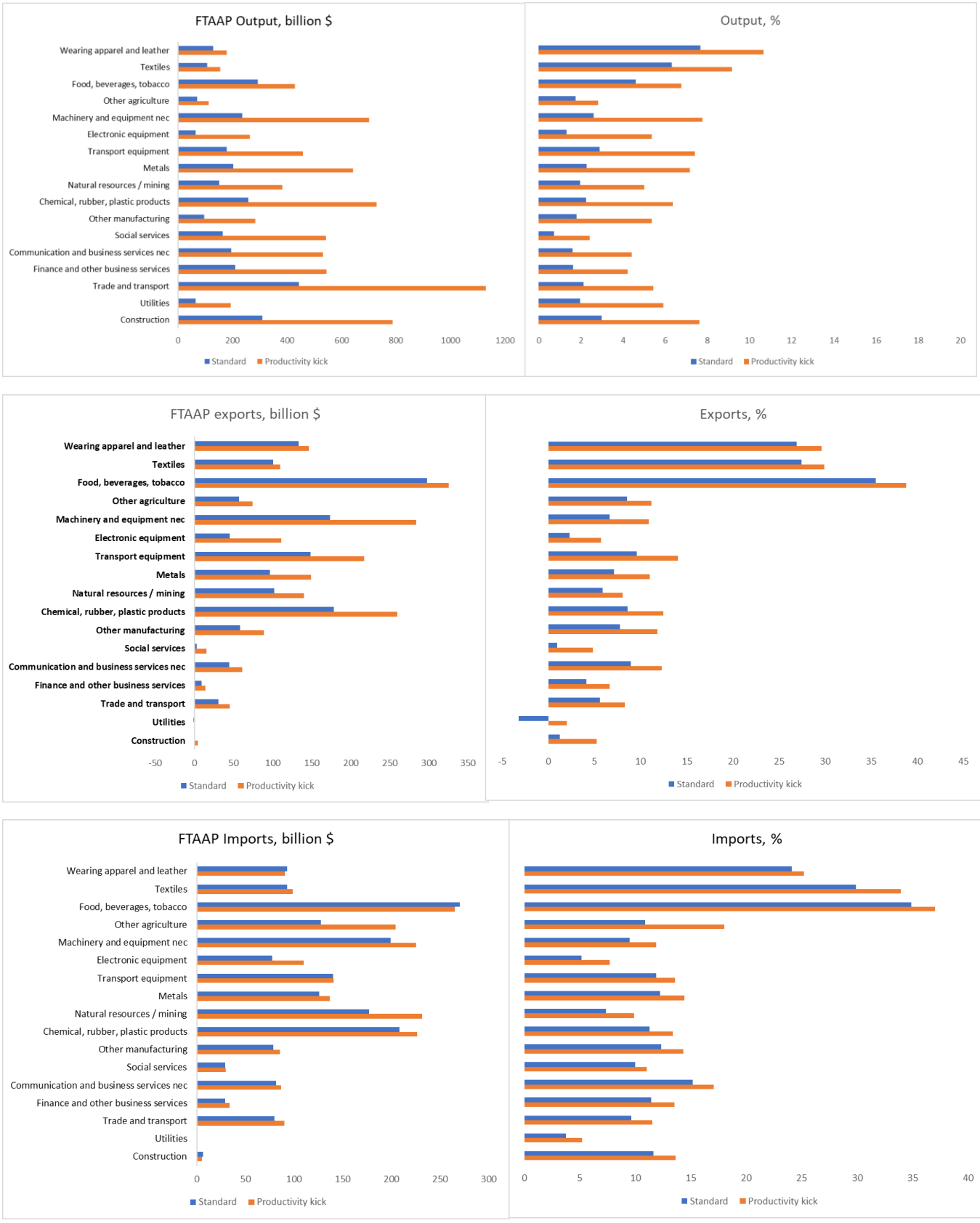
Source: Authors' estimates

Figure 17. Sectoral changes under the RCEP, % relative to the baseline in 2030



Source: Authors' estimates

Figure 18. Sectoral changes under the FTAAP, % relative to the baseline in 2030



Source: Authors' estimates

Trade creation and diversion

Tables 2, 3, and 8 and Figures 19-22 show the decomposition of export changes by destinations and sectors in absolute and relative terms with respect to the baseline in 2030. As can be seen, the simulation results confirm that FTAs tend to increase export flows toward signatory countries: exports within the CPTPP will increase by 27% as compared to the baseline scenario in 2030, TPP12 – by 15.4% RCEP – by 11.7%, FTAAP – by 18.1%.

The importance of FTA markets as destination for its members' exports is growing both at the aggregate and country level (see Tables 2, 3 and 8) as exporters from signatory countries gain more competitive advantage in the member markets compared to the non-members, as well as exports from non-members become relatively less competitive. On the aggregate level, signatory countries' share in total members' trade will expand from 14.8% to 18.3% under the CPTPP; from 35.7% to 39.5% under the TPP12; from 45.4% to 48.3% under the RCEP; from 59.9% to 64.7% under the FTAAP. Therefore, exports from non-members tend to divert from member markets countries. However, the changes in trade for all considered FTAs are projected to be significantly larger, both in dollar and percentage terms, that any trade diversion observed by non-members. For example, CPTPP exports within the treaty will go up by $185 billion, while non-members exports to the CPTPP markets will go down by $63 billion. Gains in total exports of FTAs members are also much higher compared to exports losses of non-members (see Tables 6 and 7), exceeding them in more than five times. As a result, all FTAs are expected to boost the global exports, with larger FTAs having greater positive impact on global trade.

Table 2. Exports of FTA Members by destinations (FTA Members vs Non-members markets) compared to the baseline in 2030

		CPTPP		TPP12		RCEP		FTAAP	
		Members	**Non-members**	**Members**	**Non-members**	**Members**	**Non-members**	**Members**	**Non-members**
Members' exports in 2030	$ billion	869.0	3,882	3,207.1	4,907.4	5,867.4	6,288.8	10,998.2	6,011.1
	share, %	*18.3*	*81.7*	*39.5*	*60.5*	*48.3*	*51.7*	*64.7*	*35.3*
Change to baseline in 2030	$ billion	184.9	-57.3	427.6	-104.8	616	-27.7	1,685.3	-225.8
	in shares in p.p.	*3.5*	*-3.5*	*3.9*	*-3.9*	*2.9*	*-2.9*	*4.8*	*-4.8*

Source: Authors' estimates (*share in total FTA members' exports)

Table 3. Exports of Non-members by destinations (FTA Members vs Non-members markets) compared to the baseline in 2030

		CPTPP		TPP12		RCEP		FTAAP	
		Members	Non-members	Members	Non-members	Members	Non-members	Members	Non-members
Non-members' exports in 2030	$ billion	3,756.6	24,087.0	5,497.1	19,149.3	5,292.1	15,573.8	5,718.6	11,011.3
	share, %	*13.5*	*86.5*	*22.3*	*77.7*	*25.4*	*74.6*	*34.2*	*65.8*
Change to baseline in 2030	$ billion	-63.2	38.3	-117.2	63.3	-65.8	7.7	-276.7	64.5
	in shares in p.p.	*-0.2*	*0.2*	*-0.4*	*0.4*	*-0.2*	*0.2*	*-1.2*	*1.2*

Source: Authors' estimates (*share in total Non-members' exports)

Under CPTPP exports to signatory countries would increase from $684 to $869 billion by 2030 as compared to the baseline, however, there will be some trade diversion with a reduction of CPTPP exports to non-member countries by $57.3 billion. The CPTPP countries that benefit the most from this export creation are New Zealand, Australia, Vietnam, Canada, and Singapore (their exports to CPTPP will increase by more than 25%) –as a result of facing the highest reductions in trade barriers on CPTPP markets. As to major destination markets, there will be the greatest increases of flows to RCEP/TPP joint members (as the most numerous group) in absolute terms ($141 billion), and to Other TPP members - Canada, Chile, Mexico, and Peru - in relative terms (by 31.7%). At the same time, CPTPP exports will decline for China, EU, US, Russia, and the Rest of the world. CPTPP exports directed to CPTPP markets would increase the most in Food, Beverages, and Tobacco - up by 143.6%, Wearing apparel and leather by 93%, Chemical, rubber, plastic products by 29%, and Textiles by 55%. Exports of services (Trade and transport, and Communication) will also observe a growth to CPTPP markets – by 29% and 12.7% respectively. Noticeable, exports of Food, Beverages, and Tobacco will enjoy growth to both member and non-member countries. At the same time, trade diversion from non-members are expected mostly in sectors such as Agriculture (e.g. -9% from China), Electronics (-2% from Other RCEP countries), Machinery and equipment (-1.8% from Rest of the world), and Other manufacturing (-2.7% from the US).

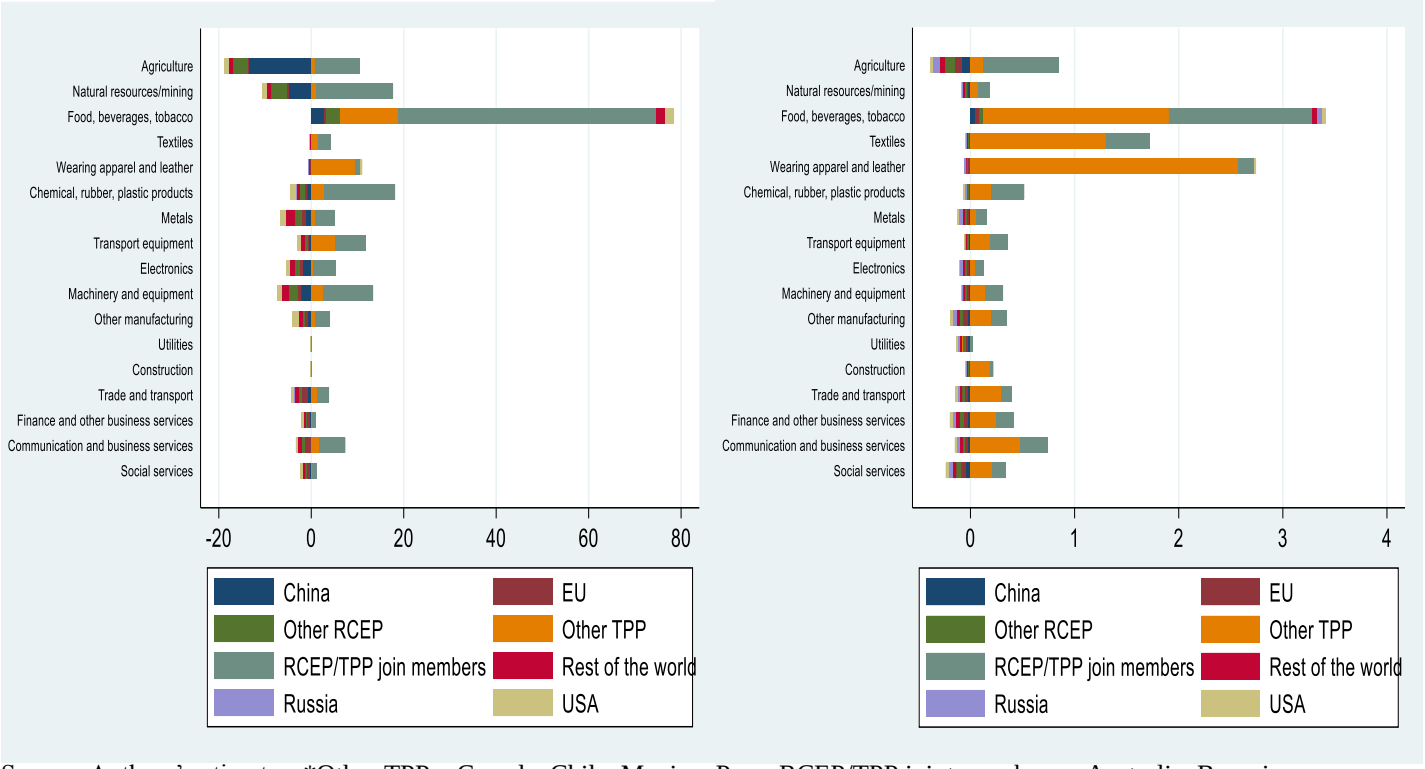
The TPP12 is projected to boost exports to signatory countries from $2,779.5 to $3,207.1 billion by 2030 as compared to the baseline, while exports to non-members will go down by 105$ billion. Vietnam is expected to observe the largest reorientation of exports to member states (mostly to the US) – by more than 20 percentage points. The importance of TPP12 markets as export destinations will also noticeably increase for New Zealand, Australia, and Malaysia. For the US, 35.7% of its exports would be directed to TPP12 members by 2030 as compared to 32.4% under baseline conditions. In turn, more exports of member countries will be destined to the US market – the US share in total exports of member states will elevate from 13.7% to 14.9%. As to other export destinations, TPP12 members will increase their exports the most at RCEP/TPP joint members market – by 27%, the US - by 13.8% (mostly, wearing apparel and textiles), and Other TPP market – by 5.6%, while contracting to all other regions. Exports directed to TPP12 members would increase in all sectors, with the greatest increases in Wearing apparel

and leather 171%, textiles 91%, Food, beverages, tobacco 64%, Agriculture 26%, as well as Communication and Trade/Transport services 26% and 14.5% with respect to the baseline. It can be seen from the Figure 15 that most of the market reallocation of TPP12 exports would take place in Agriculture, Natural resources/mining, Machinery and equipment, and Chemical, rubber, plastic products shifting from other regions to most RCEP/TPP joint members. For the Food, Beverages, and Tobacco, the Wearing apparel and leather, and the Textiles sectors, there will be strong export creation effect with increasing export flows within the TPP12 (without significant decreases to other markets). Particularly, increased exports of Wearing apparel and Textiles will be directed mostly to the US and Other TPP markets, while Food, Beverages, and Tobacco products will be more supplied to RCEP/TPP joint members and Other TPP markets.

Under the RCEP, export flows of signatory countries to RCEP markets will increase by $616 billion compared to the baseline in 2030. Japan, India, and China – are expected to reorient their exports towards RCEP members the most. For instance, Japan will increase the RCEP share in its total exports by 7.8 percentage points. By major destination markets, increased members' exports will be directed the most to China (export increase of 13.5%) and to RCEP/TPP joint members (13.3%) followed by Other RCEP (9%). However, RCEP member exports to non-members in total will be almost unchanged as compared to the baseline (-0.4%) revealing the low trade diversion effect. Moreover, RCEP exports will even slightly increase to such non-member markets as Other TPP and the US (mostly, in Wearing apparel, Textiles, and Chemical, rubber, plastic products). Exports directed to RCEP members would increase in all sectors compared to baseline conditions, with the greatest expansions in Food, beverages, tobacco (by 26.6%), Textiles (25.8%), Transport equipment (15.4%), Wearing apparel and leather (13.6%), Metals (12%), Trade and transport services (16.6%), and Chemical, rubber, plastic products (11.4%). The relocation of export flows towards RCEP markets from other markets will be the most evident in Agriculture, Natural resources/mining, Transport equipment, Other manufacturing, and Services. At the same time, exports of Food, beverages, tobacco, Textiles, Wearing apparel and leather, and Chemical, rubber, plastic products will grow at almost all destinations.

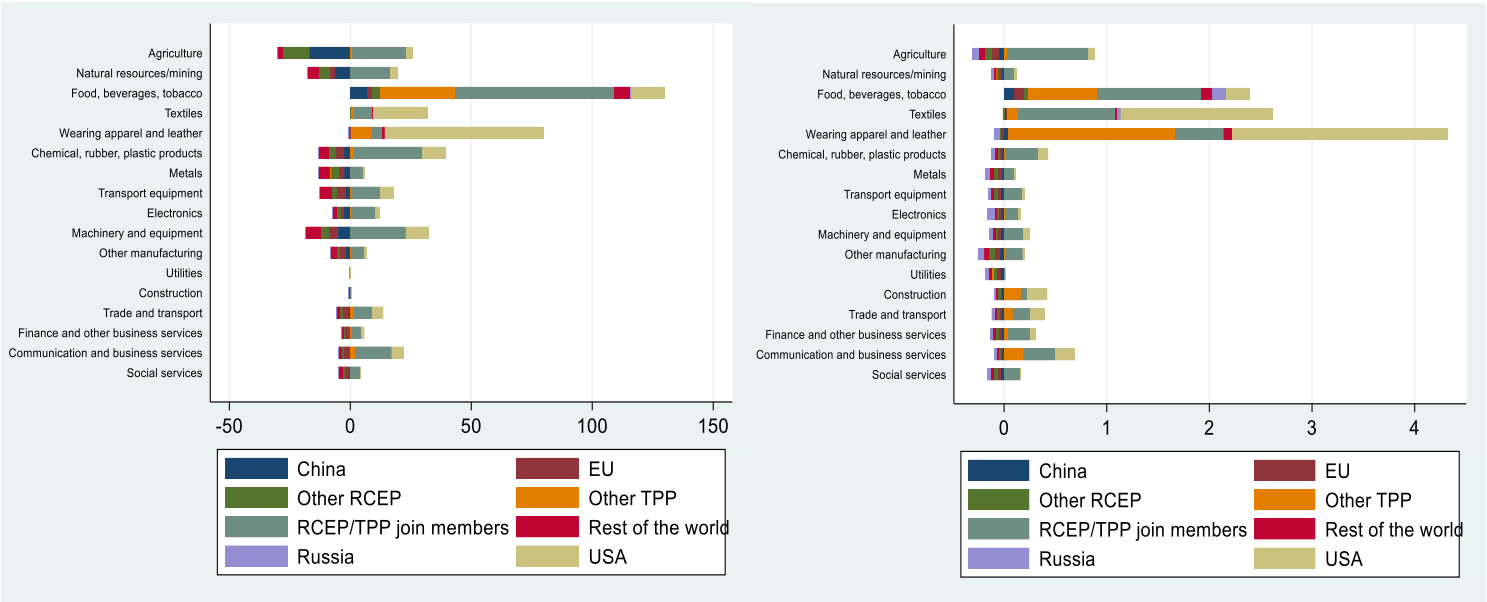
The FTAAP will boost the largest shift of member exports towards the signatory countries. Exports within the treaty will grow by $1,685 billion in total, while exports to non-members will go down by $225.8 billion. Japan, Russian Federation, Vietnam, US, and China will orient most of their exports toward FTAAP markets – FTAAP shares will grow by more than 5 percentage points in their total exports. Exports destinations for these growing export flows would be located within Other TPP (increase of 36.5%), China (20%), RCEP/TPP joint members (15.7%), and US (15%), diverting from Rest of the world (-2.4%), and the EU (-3.5%). The greatest increase of exports from the FTAAP will occur in the Russian market – up by 87% as compared to the baseline in 2030 due to the high initial level of trade protection for FTAAP countries and highest expected reductions of trade barriers that used to restrict trade with FTAAP members. Compared to other simulated FTAs, FTAAP sectoral changes and exports destinations will be much more diversified.

Figure 19. Export changes by sectors and destinations under the CPTPP compared to the baseline in 2030, in billion $ and %



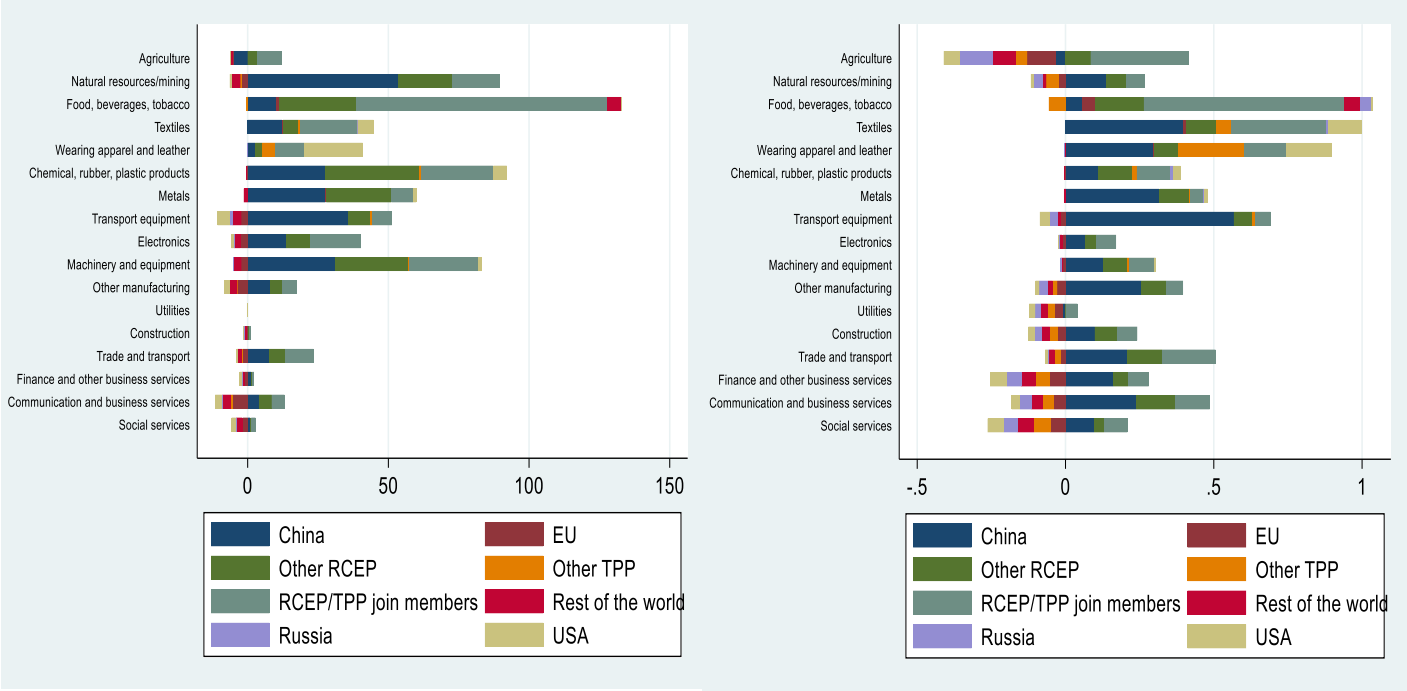
Source: Authors' estimates. *Other TPP – Canada, Chile, Mexico, Peru; RCEP/TPP joint members – Australia, Brunei, Japan, Malaysia, New Zealand, Singapore, Vietnam; Other RCEP – Indonesia, South Korea, Philippines, Thailand, Cambodia, India, Lao PDF, Myanmar.

Figure 20. Export changes by sectors and destinations under the TPP12 compared to the baseline in 2030, in billion $ and %



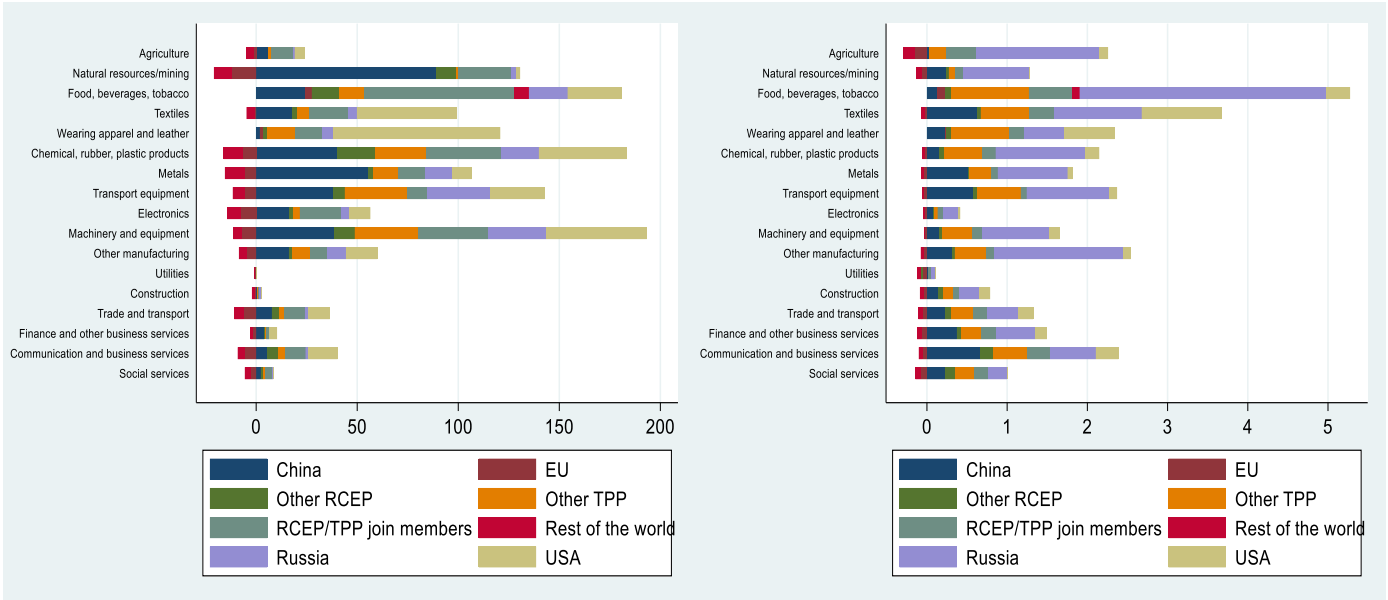
Source: Authors' estimates. *Other TPP – Canada, Chile, Mexico, Peru; RCEP/TPP joint members – Australia, Brunei, Japan, Malaysia, New Zealand, Singapore, Vietnam; Other RCEP – Indonesia, South Korea, Philippines, Thailand, Cambodia, India, Lao PDF, Myanmar.

Figure 21. Export changes by sectors and destinations under the RCEP compared to the baseline in 2030, in billion $ and %



Source: Authors' estimates. *Other TPP – Canada, Chile, Mexico, Peru; RCEP/TPP joint members – Australia, Brunei, Japan, Malaysia, New Zealand, Singapore, Vietnam; Other RCEP – Indonesia, South Korea, Philippines, Thailand, Cambodia, India, Lao PDF, Myanmar.

Figure 22. Export changes by sectors and destinations under the FTAAP compared to the baseline in 2030, in billion $ and %



Source: Authors' estimates. *Other TPP – Canada, Chile, Mexico, Peru; RCEP/TPP joint members – Australia, Brunei, Japan, Malaysia, New Zealand, Singapore, Vietnam; Other RCEP – Indonesia, South Korea, Philippines, Thailand, Cambodia, India, Lao PDF, Myanmar.

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Annexes

Annex 1. Methodology

Building on recent work of Petri and Plummer (2016), Petri et. al. (2012) and World Bank (2016), East Asia Economic Update (2016) the backbone of the economic modelling would be obtained by using a global dynamic computable general equilibrium model called LINKAGE.

This modelling framework allows to incorporate the complex interactions of productivity differences at the country, sector or factor level, shifts in demand as income rises, as well changes in comparative advantage and trade flows following trade liberalization. The applied multi-regional dynamic CGE model accounts simultaneously for interactions among producers, households and governments in multiple product markets and across several countries and regions of the world.

Although incorporating well-developed dynamic features such as accumulation of capital through changes in savings and investment, the model, however, lacks positive dynamic feedback loops concerning the accumulation of knowledge and the absorption of foreign technology through TPP-facilitated FDI, it also does not allow for modeling of extensive margins in exports. Therefore, the gains illustrated here may underestimate the eventual impact and represent the lower bound of potential benefits. In contrast, TPP-driven productivity increases in member countries could undermine the competitiveness of non-member countries and exacerbate the detrimental effects on non-member countries. Moreover, the intended harmonization of labor and environmental standards within the TPP has important implications for participating developing countries, but these processes are not explicitly incorporated in the model. While such harmonization has social and environmental benefits, it may also reduce competitiveness of firms that currently do not meet such standards, reducing the potential economic gains.

LINKAGE: GLOBAL DYNAMIC COMPUTEBLE GENERAL EQUILIBRIUM (CGE) MODEL

The core specification of the model replicates largely a standard global dynamic CGE model. Production is specified as a series of nested constant elasticity of substitution (CES) functions for the various inputs – unskilled and skilled labor, capital, land, natural resources (sector-specific), energy and other material inputs. LINKAGE uses a vintage structure of production that allows for putty-semi putty capital. In the labor market we assume fixed unemployment and labor participation rates.

Demand by each domestic agent is specified at the so-called Armington level, i.e., demand for a bundle of domestically produced and imported goods. Armington demand is aggregated across all agents and allocated at the national level between domestic production and imports by region of origin.

The standard scenario incorporates three closure rules. First, government expenditures are held constant as a share of GDP, fiscal balance is exogenous while direct taxes adjust to cover any changes in the revenues to keep the fiscal balance at the exogenous level. The second closure rule determines the investment-savings balance. Households save a portion of their income, with the average propensity to save influenced by elderly and youth dependency rates, as well as GDP per capita growth rates. The savings function specification follows Loayza, Schmidt-Hebbel, and Serven (2000) with different coefficients for developed and developing countries. In the case of China and Russia, we target projections of investment or savings rates up to 2030 from World Bank regional reports. Since

government and foreign savings are exogenous, investment is savings driven. The last closure determines the external balance. We fix the foreign savings and therefore the trade balance, hence changes in trade flows result in shifts in the real exchange rate.

We first generate the long-term baseline, then run a number of counterfactual scenarios. By comparing them, we can isolate the impacts of various policy changes.

Baseline

The GTAP database is benchmarked to 2011. We run the model to 2018, replicating the key macroeconomic aggregates from the World Bank's *Global Economic Prospects* (GEP 2016)[9] report. Population growth is based on the medium fertility variant of the 2012 UN's population projections Labor force growth follows the growth of the working age population – defined here as the demographic cohort between 15 and 64 years of age. The evolution of supply of skilled and unskilled workers is consistent with the IIASA constant educational trends (CER) scenario, where growth rates of the supply of skilled workers exceed that of unskilled. Capital accumulation is equated to the previous period's (depreciated) capital stock plus investment. Productivity growth in the baseline is "calibrated" to achieve the growth rates for the baseline scenario (as in the GEP (2016)) up to 2018, then we fix the productivity growth for 2018-2030 to be consistent with historical trends. These productivity growth rates remain fixed in the counterfactual scenarios. The baseline scenario also incorporates tariff reductions in existing FTAs. These are based on the data set provided by International Trade Center, including all TPP members FTA commitments up to 2030 (ITC and MAcMap, 2015).

CPTPP and TPP12

The results rest on planned tariff cuts in accordance with the provisions of TPP among the members and on several key assumptions about the theoretically desirable and politically feasible ("actionable") cuts in NTMs and the actual cuts likely to follow from the implementation of the TPP. Although the agreement has to be ratified by all member countries, executed simulations assume its implementation will begin in 2018. Moreover, the effects of the TPP are evaluated relative to a baseline scenario that includes pre-existing trade agreements among member countries (e.g., NAFTA, AFTA, the ASEAN-Japan FTA, the ASEAN-Australia-New Zealand FTA and the P4 Agreement among Brunei Darussalam, Chile, Singapore and New Zealand).

Tariff cuts under the existing FTAs as well as tariff commitments under the TPP follow the published schedules under the agreements as documented in ITC and MAcMap (2015) and MAcMap (2016). The authors document tariff reductions due to the existing FTAs signed by TPP members up to 2031 as well as the TPP commitments up to 2046 at the HS6 digit level.

Reductions in actionable non-tariff measures (NTMs) follow the approach of Petri and Plummer (2016) and are assumed to be similar to the agreement between Korea and the US (KORUS), including some modifications based on analysis of the TPP text. NTMs for goods are based on estimates by Kee, Nicita, & Olarreaga (2008) updated in 2012 and the services barriers are based on estimates by Fontagné, Mitaritonna, & Signoret (2016). Only three-quarters of measured barriers are considered as actual trade barriers, the rest is assumed to represent quality-increasing regulations (e.g., product safety standards). Further, only three-quarters of the remaining NTMs in the case of goods and one-half in the case of

[9] For China, we replicate the growth projections of World Bank (2014).

services are assumed to be actionable (i.e., politically feasible in a trade agreement), the rest is assumed to be beyond the reach of politically viable trade policies.10 NTMs are modelled as iceberg trade cost. These are non-revenue generating costs, which allow for trade to expand if these costs are reduced. For example, if iceberg trade costs are equal to 0.9 for some transport node, that means that if 100 units leave port r, the destination port, r', receives only 90 units.

RCEP and FTAAP

Initial tariffs are based on the GTAP data whereas NTMs are provided by Petri and Plummer (2016). For the countries that are also TPP members we use the TPP tariff schedules from MAcMap (2015) and MAcMap (2016). In case of RCEP, the implementation of agreement is assumed to start in 2017 and import tariffs among the 16 members[11] are gradually reduced starting with a decline by 24% in 2017 up to 89% in 2027. In case of FTAAP, its implementation is assumed to start in 2021 and import tariffs among the member countries are also gradually reduced starting with a decline by 46% in 2021 up to 94% in 2030.

Table A1. Sectors and countries/regions included in the global CGE model

Sectors	Countries/Regions
Agriculture	Australia
Natural resources / mining	Brunei Darussalam
Food, beverages, tobacco	Canada
Textiles	Chile
Wearing apparel and leather	Japan
Chemical, rubber, plastic products	Malaysia
Metals	Mexico
Transport equipment	New Zealand
Electronic equipment	Peru
Machinery and equipment	Singapore
Other manufacturing	United States of America
Utilities	Viet Nam
Construction	Brazil
Trade and transport	Russian Federation
Finance and other business services	India
Communication and business services	China
Social services	South Africa
	EU28
	Egypt
	Colombia
	Turkey
	Thailand
	Korea

[10] The fraction of actual NTM reductions is derived for 21 separate issues areas, based on a score from 0 to 100 with a higher score indicating larger reductions in trade barriers by TPP compared with existing FTAs. See World Bank (2016), p. 236 (Figure A.4.1.1).

[11] The member countries of RCEP include: Australia, Japan, Malaysia, New Zealand, Vietnam, Singapore, Brunei Darussalam, China, Korea, Indonesia, Philippines, Thailand, India, Cambodia, Laos and Myanmar (due to the aggregation of regions in GTAP we also include Timor Leste together with Myanmar).

	Philippines
	Indonesia
	Bangladesh
	Cambodia
	Laos
	Kenya
	Ethiopia
	Sri Lanka
	Tanzania
	Southeast Asia
	Rest of South African Customs Union
	Rest of the world

Annex 2. Tables

Table 4. Impact of FTAs on GDP, Standard simulations

	Baseline 2030 GDP, million $	Change to baseline in 2030, million $				Change to baseline in 2030, %			
		TPP12	CPTPP	RCEP	FTAAP	TPP12	CPTPP	RCEP	FTAAP
Canada	2,670,562	20,319	9,981	923	25,393	0.8	0.4	0.0	1.0
Chile	429,697	522	524	623	599	0.1	0.1	0.1	0.1
Mexico	2,033,064	4,016	2,594	-327	7415	0.2	0.1	0.0	0.4
Peru	380,384	4,689	3,620	615	2,967	1.2	1.0	0.2	0.8
Australia	2,385,405	8,257	10,794	12,364	12,965	0.3	0.5	0.5	0.5
Brunei Darussalam	25,513	631	479	433	568	2.5	1.9	1.7	2.2
Japan	7,678,787	106,659	31,310	56,653	123,993	1.4	0.4	0.7	1.6
Malaysia	696,877	12,548	6,897	5,559	10,413	1.8	1.0	0.8	1.5
New Zealand	246,872	1,656	1,093	-772	-812	0.7	0.4	-0.3	-0.3
Singapore	435,494	3,513	3,505	1,954	2,413	0.8	0.8	0.4	0.6
Viet Nam	313,203	11,313	3,530	1,237	4,991	3.6	1.1	0.4	1.6
USA	23,099,842	87,011	10,889	16,304	133,566	0.4	0.0	0.1	0.6
Thailand	622,241	2,732	1,493	514	4,723	0.4	0.2	0.1	0.8
Korea	2,313,561	-6,860	-860	38,929	38,943	-0.3	0.0	1.7	1.7
Philippines	623,882	1,070	236	4,652	13,982	0.2	0.0	0.7	2.2
Indonesia	2,074,745	3,363	1,485	3,730	18,384	0.2	0.1	0.2	0.9
Cambodia	37,638	-14	-2	198	-142	0.0	0.0	0.5	-0.4
Laos	25,146	10	16	150	9	0.1	0.0	0.0	0.0
India	5,112,406	10,005	3,234	89,250	11,457	0.2	0.1	1.7	0.2
Southeast Asia	73,827	35	16	206	126	0.0	0.0	0.1	-0.1
China	22,119,932	6,227	14,200	438,406	682,172	0.0	0.1	2.0	3.1
Russian Federation	2,481,550	1,009	449	1,323	69,254	0.0	0.0	0.1	2.8
EU28	22,418,463	3,582	1,479	-417	1,119	0.0	0.0	0.0	0.0
Egypt	519,637	329	26	157	286	0.1	0.0	0.0	0.1
Colombia	668,773	315	377	521	134	0.0	0.1	0.1	0.0
Turkey	1,563,755	1,123	472	906	449	0.1	0.0	0.1	0.0
Bangladesh	302,567	2,150	258	439	4,166	0.7	0.1	0.1	1.4
South Africa	564,708	90	47	22	-393	0.0	0.0	0.0	-0.1
Brazil	3,021,844	1,158	555	847	1,504	0.0	0.0	0.0	0.0
Kenya	99,604	105	18	58	107	0.0	0.1	0.1	0.1
Ethiopia	122,291	34	12	95	41	0.1	0.0	0.1	0.0
Sri Lanka	132,344	856	113	286	1,453	0.4	0.2	0.1	1.1
Tanzania	84,856	-3	15	52	-83	0.6	0.1	0.2	-0.1
Rest of SACU	9,890	-10	2	-2	-27	0.0	0.0	0.3	0.2
Rest of the world	15,328,496	421	1,013	-2,340	-10,349	-0.1	0.0	0.0	-0.3
World	**120,717,854**	**288,863**	**109,870**	**673,548**	**1,161,787**	**0.2**	**0.1**	**0.6**	**1.0**
FTAs members		**261,135**	**74,328**	**653,464**	**1,151,928**	**0.6**	**0.4**	**1.5**	**1.6**
Non-members		**27,728**	**35,542**	**20,085**	**9,859**	**0.0**	**0.0**	**0.0**	**0.0**

Source: Authors' estimates

Table 5. Impact of FTAs on GDP, Simulations with productivity kick

	Baseline 2030 GDP, million $	Change to baseline in 2030, million $				Change to baseline in 2030, %			
		TPP12	CPTPP	RCEP	FTAAP	TPP12	CPTPP	RCEP	FTAAP
Canada	2,670,562	26,928	44,238	136	44,973	1.0	1.7	0.0	1.7
Chile	429,697	545	608	362	1,228	0.1	0.1	0.1	0.3
Mexico	2,033,064	5,871	16,151	392	34,272	0.3	0.8	0.0	1.7
Peru	380,384	5,054	4,291	285	3,364	1.3	1.1	0.1	0.9
Australia	2,385,405	9,668	12,813	55,877	16,533	0.4	0.5	2.3	0.7
Brunei Darussalam	25,513	693	484	481	611	2.7	1.9	1.9	2.4
Japan	7,678,787	162,754	80,047	229,442	261,777	2.1	1.0	3.0	3.4
Malaysia	696,877	18,169	9,307	6,850	11,820	2.6	1.3	1.0	1.7
New Zealand	246,872	1,864	1,187	-142	-482	0.8	0.5	-0.1	-0.2
Singapore	435,494	3,545	3,518	1,504	1,955	0.8	0.8	0.3	0.4
Viet Nam	313,203	20,803	10,975	3,057	6,515	6.6	3.5	1.0	2.1
USA	23,099,842	117,677	10,905	9,773	580,527	0.5	0.0	0.0	2.5
Thailand	622,241	2,758	1,495	2,746	10,399	0.4	0.2	0.4	1.7
Korea	2,313,561	-6,711	-784	89,779	115,257	-0.3	0.0	3.9	5.0
Philippines	623,882	1,071	235	5,462	17,731	0.2	0.0	0.9	2.8
Indonesia	2,074,745	3,429	1,546	8,246	33,395	0.2	0.1	0.4	1.6
Cambodia	37,638	-5	1	457	-117	0.0	0.0	1.2	-0.3
Laos	25,146	12	18	297	57	0.1	0.0	0.0	0.2
India	5,112,406	10,027	3,185	417,436	12,485	0.2	0.1	8.2	0.2
Southeast Asia	73,827	34	14	191	66	0.0	0.0	0.0	-0.2
China	22,119,932	7,236	14,265	1253,112	1,662,478	0.0	0.1	5.7	7.5
Russian Federation	2,481,550	1,031	501	776	424,548	0.0	0.0	0.0	17.1
EU28	22,418,463	3,437	1,215	-4,574	-3,103	0.0	0.0	0.0	0.0
Egypt	519,637	334	28	0	-27	0.1	0.0	0.0	0.0
Colombia	668,773	309	363	298	33	0.0	0.1	0.0	0.0
Turkey	1,563,755	1,141	467	620	1,077	0.1	0.0	0.0	0.1
Bangladesh	302,567	2,170	258	536	4,248	0.7	0.1	0.2	1.4
South Africa	564,708	102	55	12	-146	0.0	0.0	0.0	0.0
Brazil	3,021,844	1,133	524	1,272	1,598	0.0	0.0	0.0	0.1
Kenya	99,604	105	16	-13	1	0.0	0.1	0.0	0.0
Ethiopia	122,291	37	17	219	98	0.1	0.0	0.0	0.1
Sri Lanka	132,344	867	117	314	1,492	0.4	0.2	0.4	1.1
Tanzania	84,856	-6	13	-8	-133	0.7	0.1	0.2	-0.2
Rest of SACU	9,890	-9	3	11	-19	0.0	0.0	0.3	0.1
Rest of the world	15,328,496	874	1,389	3,904	-2,300	-0.1	0.0	0.1	-0.2
World	**120,717,854**	**402,946**	**219,464**	**2,089,109**	**3,242,210**	**0.3**	**0.2**	**1.7**	**2.7**
FTAs members		**373,570**	**183,618**	**2,074,793**	**3,226,900**	**0.9**	**1.1**	**4.6**	**4.6**
Non-members		**29,376**	**35,846**	**14,316**	**15,310**	**0.0**	**0.0**	**0.0**	**0.0**

Source: Authors' estimates

Table 6. Impact of FTAs on exports, Standard simulations

	Baseline 2030 GDP, million $	Change to baseline in 2030, million $				Change to baseline in 2030, %			
		TPP12	CPTPP	RCEP	FTAAP	TPP12	CPTPP	RCEP	FTAAP
Canada	678,453	24,091	10,255	-2,046	38,856	3.6	1.5	-0.3	5.7
Chile	139,369	615	1,002	-1,347	2,033	0.4	0.7	-1.0	1.5
Mexico	518,304	9,052	8,289	-1,139	30,909	1.7	1.6	-0.2	6.0
Peru	84,310	2,077	1,511	-734	4,568	2.5	1.8	-0.9	5.4
Australia	472,906	17,109	20,639	26,682	26,548	3.6	4.4	5.6	5.6
Brunei Darussalam	11,820	344	202	154	360	2.9	1.7	1.3	3.0
Japan	1,391,648	57,299	25,821	144,028	213,393	4.1	1.9	10.3	15.3
Malaysia	517,385	41,880	23,987	24,402	56,943	8.1	4.6	4.7	11.0
New Zealand	70,057	5,271	4,456	4,376	7,386	7.5	6.4	6.2	10.5
Singapore	454,259	15,780	17,221	7,420	14,582	3.5	3.8	1.6	3.2
Viet Nam	284,978	59,117	14,158	9,994	41,529	20.7	5.0	3.5	14.6
USA	3,168,188	90,137	-8,535	-23,046	254,254	2.8	-0.3	-0.7	8.0
Thailand	452,141	-2,933	-1,850	1,368	18,320	-0.6	-0.4	0.3	4.1
Korea	1,235,328	-8,147	-3,709	42,455	79,100	-0.7	-0.3	3.4	6.4
Philippines	222,193	-1,193	-158	7,890	25,430	-0.5	-0.1	3.6	11.4
Indonesia	485,066	-4,188	-1,940	7,731	24,108	-0.9	-0.4	1.6	5.0
Cambodia	29,003	-1,176	-122	688	-3,326	-4.1	0.0	2.4	-11.5
Laos	11,491	32	37	331	-137	-0.2	0.0	-0.2	-1.2
India	1,124,559	-997	-290	80,363	-15,952	-0.1	0.0	7.1	-1.4
Southeast Asia	15,512	70	53	560	-11	-0.2	0.0	-0.4	-1.2
China	4,789,638	-13,930	-4,095	202,624	544,153	-0.3	-0.1	4.2	11.4
Russian Federation	573,882	171	150	-1,949	76,986	0.0	0.0	-0.3	13.4
EU28	9,023,086	-11,202	-4,006	-42,587	-112,548	-0.1	0.0	-0.5	-1.2
Egypt	147,617	-355	30	-364	-1,712	-0.2	0.0	-0.2	-1.2
Colombia	84,761	-318	-120	-235	-911	-0.4	-0.1	-0.3	-1.1
Turkey	346,612	-251	69	-1,224	-4,205	-0.1	0.0	-0.4	-1.2
Bangladesh	78,886	-1,341	-188	-492	-4,741	-1.7	-0.2	-0.6	-6.0
South Africa	168,030	19	60	-922	-1,299	0.0	0.0	-0.5	-0.8
Brazil	375,694	-567	50	-222	-2,553	-0.2	0.0	-0.1	-0.7
Kenya	33,151	-51	3	-108	-268	-0.4	-0.1	-0.3	-0.8
Ethiopia	15,812	-36	3	-32	-159	-0.1	0.0	-0.4	-1.0
Sri Lanka	36,356	-313	-22	-133	-1,077	-0.6	-0.4	0.3	-3.0
Tanzania	21,480	-48	-6	-78	-254	-0.9	-0.1	-0.4	-1.2
Rest of SACU	3,932	-49	-4	-20	-126	0.4	0.3	3.6	-0.1
Rest of the world	5,426,086	-7,043	-316	-29,573	-62,846	-1.2	-0.1	-0.5	-3.2
World	**32,491,990**	**268,925**	**102,632**	**454,815**	**1,247,335**	**0.8**	**0.3**	**1.4**	**3.8**
FTAs members		**322,771**	**127,538**	**561,067**	**1,459,459**	**4.1**	**2.8**	**4.9**	**9.4**
Non-members		**-53,846**	**-24,906**	**-106,252**	**-212,125**	**-0.2**	**-0.1**	**-0.5**	**-1.2**

Source: Authors' estimates

Table 7. Impact of FTAs on exports, Simulations with productivity kick

	Baseline 2030 GDP, million $	Change to baseline in 2030, million $				Change to baseline in 2030, %			
		TPP12	CPTPP	RCEP	FTAAP	TPP12	CPTPP	RCEP	FTAAP
Canada	678,453	25,763	17,299	-1,686	47,061	3.8	2.5	-0.2	6.9
Chile	139,369	671	1,078	-736	2,949	0.5	0.8	-0.5	2.1
Mexico	518,304	9,667	11,281	-1,831	38,569	1.9	2.2	-0.4	7.4
Peru	84,310	2,164	1,652	-24	5,713	2.6	2.0	0.0	6.8
Australia	472,906	17,653	21,263	38,314	33,736	3.7	4.5	8.1	7.1
Brunei Darussalam	11,820	372	208	231	436	3.1	1.8	2.0	3.7
Japan	1,391,648	67,447	34,423	177,472	245,579	4.8	2.5	12.8	17.6
Malaysia	517,385	45,674	25,736	27,691	59,860	8.8	5.0	5.4	11.6
New Zealand	70,057	5,361	4,531	5,455	8,344	7.7	6.5	7.8	11.9
Singapore	454,259	16,129	17,466	6,893	13,661	3.6	3.8	1.5	3.0
Viet Nam	284,978	68,003	20,604	12,531	44,383	23.9	7.2	4.4	15.6
USA	3,168,188	95,302	-4,566	-14,579	319,648	3.0	-0.1	-0.5	10.1
Thailand	452,141	-2,622	-1,594	3,557	22,965	-0.6	-0.4	0.8	5.1
Korea	1,235,328	-7,487	-3,143	70,845	119,905	-0.6	-0.3	5.7	9.7
Philippines	222,193	-1,106	-84	8,637	27,789	-0.5	0.0	3.9	12.5
Indonesia	485,066	-3,967	-1,740	13,302	29,158	-0.8	-0.4	2.7	6.0
Cambodia	29,003	-1,174	-105	877	-3,316	-4.0	0.0	3.0	-11.4
Laos	11,491	39	45	516	2	-0.2	0.0	-0.2	0.0
India	1,124,559	-781	-81	150,956	-11,044	-0.1	0.0	13.4	-1.0
Southeast Asia	15,512	74	57	746	80	-0.2	0.0	-0.2	-1.3
China	4,789,638	-11,634	-2,100	385,051	780,386	-0.2	0.0	8.0	16.3
Russian Federation	573,882	317	300	55	145,101	0.1	0.1	0.0	25.3
EU28	9,023,086	-10,338	-2,836	-48,933	-114,346	-0.1	0.0	-0.5	-1.3
Egypt	147,617	-339	58	-326	-1,775	-0.2	0.0	-0.2	-1.2
Colombia	84,761	-292	-87	-122	-561	-0.3	-0.1	-0.1	-0.7
Turkey	346,612	-210	120	-961	-3,003	-0.1	0.0	-0.3	-0.9
Bangladesh	78,886	-1,376	-197	-831	-4,855	-1.7	-0.2	-1.1	-6.2
South Africa	168,030	75	113	238	-85	0.0	0.1	0.1	-0.1
Brazil	375,694	-317	313	7,604	7,137	-0.1	0.1	2.0	1.9
Kenya	33,151	-49	7	-68	-295	-0.3	-0.1	-0.1	-0.9
Ethiopia	15,812	-31	9	104	-97	-0.1	0.0	-0.3	-0.6
Sri Lanka	36,356	-318	-21	-114	-1,067	-0.6	-0.4	0.8	-2.9
Tanzania	21,480	-45	-2	-50	-269	-0.9	-0.1	-0.3	-1.3
Rest of SACU	3,932	-48	-3	-5	-110	0.5	0.4	4.8	0.5
Rest of the world	5,426,086	-5,474	1,318	-6,098	-33,655	-1.2	-0.1	-0.1	-2.8
World	**32,491,990**	**307,102**	**141,323**	**834,711**	**1,777,987**	**0.9**	**0.4**	**2.6**	**5.5**
FTAs members		**354,205**	**155,543**	**903,073**	**1,945,244**	**4.5**	**3.4**	**7.8**	**12.5**
Non-members		**-47,103**	**-14,219**	**-68,362**	**-167,257**	**-0.2**	**-0.1**	**-0.3**	**-0.9**

Source: Authors' estimates

Table 8. Changes in exports shares in percentage points compared to the baseline in 2030

	TPP12		CPTPP		RCEP		FTAAP	
	to members	to non-members	to members	to non-members	to members	to non-members	to members	to non-members
Canada	1.2	-1.2	2.5	-2.5	-0.1	0.1	2.4	-2.4
Chile	0.5	-0.5	1.3	-1.3	-1.0	1.0	2.1	-2.1
Mexico	0.2	-0.2	0.8	-0.8	-0.2	0.2	0.7	-0.7
Peru	2.7	-2.7	2.3	-2.3	-0.8	0.8	3.5	-3.5
Australia	5.4	-5.4	7.7	-7.7	2.4	-2.4	2.3	-2.3
Brunei Darussalam	1.9	-1.9	1.2	-1.2	-0.2	0.2	1.4	-1.4
Japan	3.6	-3.6	2.1	-2.1	7.8	-7.8	7.8	-7.8
Malaysia	4.3	-4.3	3.1	-3.1	0.7	-0.7	2.9	-2.9
New Zealand	10.8	-10.8	11.8	-11.8	1.8	-1.8	4.8	-4.8
Singapore	3.9	-3.9	4.9	-4.9	1.4	-1.4	2.3	-2.3
Vietnam	20.1	-20.1	7.5	-7.5	-6.8	6.8	6.2	-6.2
USA	3.3	-3.3	-0.5	0.5	0.1	-0.1	5.8	-5.8
Thailand	-2.2	2.2	-1.5	1.5	0.2	-0.2	2.5	-2.5
Korea	-0.8	0.8	-0.7	0.7	2.1	-2.1	3.5	-3.5
Philippines	-1.2	1.2	-0.2	0.2	1.4	-1.4	3.3	-3.3
Indonesia	-1.2	1.2	-0.6	0.6	1.6	-1.6	3.7	-3.7
Cambodia	-5.2	5.1	-4.0	4.0	-0.4	0.4	-12.3	12.3
Laos	-0.1	0.1	0.3	-0.3	0.2	-0.2	-0.3	0.3
India	-0.5	0.5	-0.2	0.2	3.6	-3.6	-1.6	1.6
Southeast Asia	-0.8	0.8	-0.4	0.4	-0.1	0.1	-0.6	0.6
China	-0.4	0.4	-0.2	0.2	2.9	-2.9	5.4	-5.4
Russian Federation	-0.1	0.1	-0.1	0.1	-0.4	0.4	6.9	-6.9
EU28	-0.2	0.2	-0.1	0.1	-0.4	0.4	-1.4	1.4
Egypt	-0.7	0.7	0.0	0.0	-0.1	0.1	-1.5	1.5
Colombia	-0.5	0.5	-0.5	0.5	-0.4	0.4	-0.6	0.6
Turkey	-0.2	0.2	0.0	0.0	-0.3	0.3	-1.4	1.4
Bangladesh	-4.3	4.3	-0.5	0.5	-0.7	0.7	-11.0	11.0
South Africa	-0.2	0.2	-0.1	0.1	-0.6	0.6	-0.7	0.7
Brazil	-0.7	0.7	-0.4	0.4	0.5	-0.5	0.3	-0.3
Kenya	-0.9	0.9	-0.1	0.1	-0.4	0.4	-1.7	1.7
Ethiopia	-0.4	0.4	-0.1	0.1	0.1	-0.1	0.2	-0.2
Sri Lanka	-2.5	2.5	-0.3	0.3	-0.6	0.6	-5.3	5.3
Tanzania	-0.8	0.8	-0.3	0.3	-0.4	0.4	-1.5	1.5
Rest of SACU	-2.9	2.9	-0.4	0.4	-0.4	0.4	-6.0	6.0
Rest of the world	-0.3	0.3	-0.1	0.1	-0.3	0.3	-0.7	0.7