Box A: RCEP's Impact on Trade and Growth in the Asia Pacific[1]

Introduction

In a world beset by the recent tide of rising protectionist pressures, the conclusion of the Regional Comprehensive Economic Partnership (RCEP) negotiations last November was a strong statement of the Asia Pacific region's commitment to openness. RCEP brings together the ten ASEAN countries with the Oceanian economies (Australia and New Zealand), and the three North Asian countries of China, Japan and South Korea. It forms the world's largest trade bloc, covering around 30% each of global GDP, population, and merchandise trade flows.

The benefits from RCEP fall into two main categories. The first is tariff reductions, scheduled under the agreement over a 25-year period (although the bulk of the reductions occur within 20 years). RCEP constitutes the first formal trade agreement between Japan and each of the other two North Asian countries. The direct impact of the tariff reductions on ASEAN countries will be more limited, given that RCEP consolidates ASEAN's existing trade agreements with other RCEP signatories.

The second category of gains comes from harmonisation of "rules of origin". These rules govern the assessment of locally-produced content in a product, from the perspective of eligibility to benefit from preferential tariff rates. The availability of a common set of rules of origin (CRO) among the 15 countries is expected to facilitate cross-border integration of supply chains and to draw FDI flows into the region. The ASEAN countries, in particular, may offer a favourable proposition both to Chinese firms and to multinational corporations seeking to diversify their production centres. Some signatories have additionally committed to raise foreign shareholding limits in certain domestic services sectors such as telecommunications and financial services.

This Box explores the impact of tariff reductions and the adoption of CRO under the RCEP agreement for signatory countries. First, it takes account of the lengthy scheduling of tariff reductions to reach a more detailed estimate of their impact. Second, it employs an event study methodology to examine the effect of the inclusion of CRO in previous trade agreements on trade flows, to inform an assessment of the importance of this part of RCEP.

Impact of RCEP tariff reductions: a CGE model simulation

This section aims to estimate the effects of the phased reduction in preferential duty rates on trade in goods on the economic growth of RCEP signatories, using a multi-country, multi-sector computable general equilibrium (CGE) model developed by the Global Trade Analysis Project (GTAP).[2]

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[1]   This Box is a collaborative project between the economists in EPG, MAS and the ASEAN+3 Macroeconomic Research Office (AMRO), and does not necessarily represent the official views of AMRO or MAS.

[2]   The model utilises the GTAP10 database, which has 2014 as the reference year. While the CGE modelling approach may not perfectly incorporate firm behaviour and significant production adjustments, it provides a consistent representation of the interlinkages within and between economies. As such, the results of this analysis should be interpreted in terms of the potential gains and losses under the prevailing economic structure of every country. Please also see Box A on "Regional Trade Diversion and Production Relocation: A Simulation from a CGE Model" in the April 2019 issue of the *Macroeconomic Review*, which provides a more detailed description of the GTAP model.

Model and assumptions

The model specifications and definitions underpinning the analysis are set out in **Table A1**. The simulations cover 14 of the 15 RCEP signatories,[3] which were analysed as individual economies, while the rest of the world is represented as a bloc.

The study aggregates the thousands of individual products whose tariff schedules were defined in the RCEP agreement into 15 goods-related sectors. 10 services sectors are also included for a comprehensive assessment of the impact of tariff reduction to the economy. To simulate the impact of the reductions in tariffs on goods imports, the simple average of tariff rates (at the 6-digit level of the Harmonised System) for all goods within each sector is computed. The impact of tariff reduction is simulated on the basis of five-year periods, to identify the impact across different product groups for each country over time.

Bilateral tariffs were obtained from Annex 1 of the respective RCEP Schedules of Tariffs for each economy. Starting tariff rates were obtained from the Consolidated Tariff Schedules Database of the World Trade Organisation (WTO). In instances where economies have a trade agreement, but preferential tariff data is not available from the WTO, the base year rate is assumed to be equal to the Year 1 rate under the RCEP Schedules of Tariffs.[4] This study focuses on the impact of tariff reductions over time, at years 5, 10, 15, and 20 after the agreement comes into force.

Table A1 GTAP model specifications

Categories	Details
Countries	Australia (AU); Brunei Darussalam (BN); Cambodia (KH); China (CN); Indonesia (ID); Japan (JP); South Korea (KR); Malaysia (MY); New Zealand (NZ); the Philippines (PH); Lao PDR (LA); Singapore (SG); Thailand (TH); Vietnam (VN); and rest of the world (ROW)
Sectors	Agricultural products (AGR); animal products (ANI); forestry and fishing; chemicals, rubbers and plastics (CHP); (FOF); energy and mining (ENE); food and beverages (FDB); textiles and garments (TXG); leather, wood, and paper (LWP); refined oil and coal (MIN); metals (MEM); electronics (ELE); electrical equipment and machinery (EMQ); motor vehicles and transport (TPQ); other manufacturing goods (OMF); utilities (UTI). The model specification also included the following non-goods sectors: construction; trade services; hotel and accommodation services; transportation services; logistics services; communication services; financial services; real estate and dwellings; business services; and other services. However, these are not directly subject to tariff reductions.
Factor endowments	Land and natural resources, labor (skilled and unskilled), and capital

Under RCEP, 13% of goods categories (by 6-digit Harmonised System code) will see some decline in tariffs in the next 20 years. Average tariff reductions are low, with an average

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[3]   Myanmar is not represented in the GTAP model.

[4]   This adjustment is used because the base year rate provided in the RCEP tariff schedules are the Most Favoured Nation (MFN) applied rates of customs duty in effect on 1 January 2014, which would be higher than actual prevailing tariff rates. The adjustment was applied to the import tariffs of Malaysia and Brunei for all RCEP partners, for China for all RCEP partners except for Japan, for South Korea for all RCEP partners except for China and Japan, for Myanmar's imports from Australia, Japan, South Korea, and New Zealand, for Cambodia and Lao PDR's imports from Japan, and for Japan's imports from New Zealand.

decline of 0.7% by the 10th year, and 1.0% by the 20th year after the agreement comes into force.

Tariff reductions differ significantly across products and economies **(Chart A1)**, in part reflecting differences in pre-RCEP tariff rates **(Chart A2)**. Only 8.4% of ASEAN countries' goods exports will see tariff reductions, with an average tariff reduction of only 0.7% by the 20th year, reflecting the fact that the bloc has existing "ASEAN+1" bilateral free trade agreements (FTAs) with all the other RCEP signatories. The North Asian countries will cut tariff rates more significantly in the early years, while for ASEAN, reductions in tariffs are smaller but pick up pace in the later years. The relatively slow decline in tariffs in ASEAN in part reflects the more gradual pace of reduction in CLV (Cambodia, Lao PDR, and Vietnam), to allow more time for these lower-income economies to adapt to increased competition.

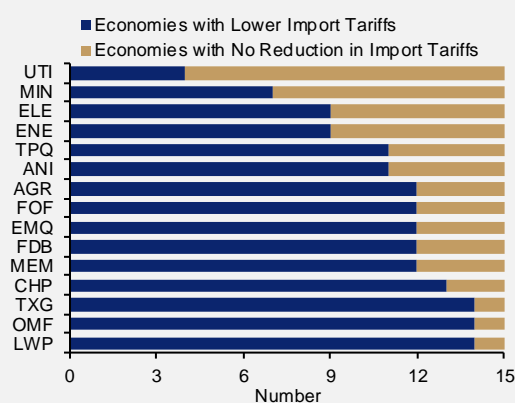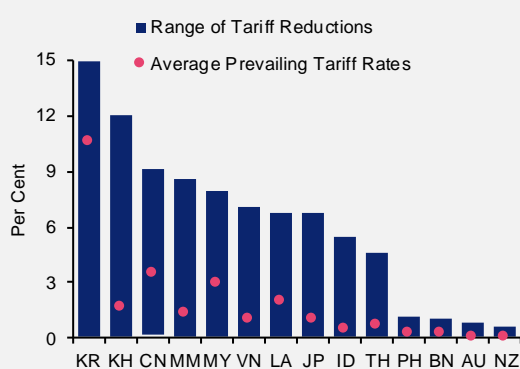**Chart A1** Number of reporting economies with lower import tariffs

Chart A2 Range of tariff reductions across sectors by reporting economy

Source: WTO; Annex I of the RCEP Agreement; AMRO staff and EPG, MAS estimates.

Note: For **Chart A2**, products that will not see any reduction in tariffs are omitted. The range of tariff reduction refers to the minimum and maximum tariff reduction implemented across goods sectors in each reporter country. Singapore is excluded as the starting tariff rate is effectively zero.

At a sectoral level, "bilateral import flows" are defined as the reporting country's imports of goods from a partner country in one of the goods sectors listed in **Table A1**. The distribution of bilateral import flows that will be affected by tariff reductions is highly uneven. South Korea, China, Malaysia, Lao PDR, and Cambodia will reduce tariffs on imports in the highest number of partner-sector categories **(Chart A3)**. On average across all countries, tariff reductions for the utilities and transport equipment sectors are the largest, at an average of 2.6%, affecting 9 and 103 bilateral import flows, respectively. The sector with the largest number of import flows that will be lifted by the agreement is the leather, wood, and paper sector, which will benefit 195 bilateral trade pairings **(Chart A4)**.

Chart A3 Number of bilateral import flows by reporting economy with lowered tariffs versus average tariff reductions by Year 20
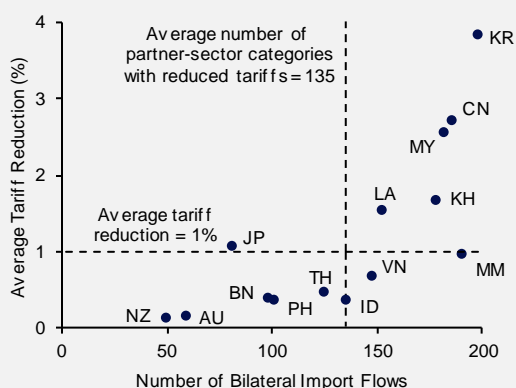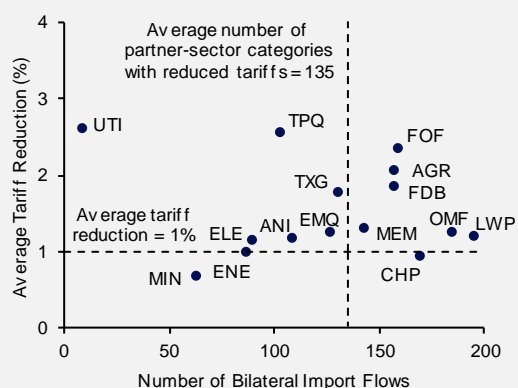
Chart A4 Number of bilateral import flows by product with lowered tariffs and average tariff reductions in Year 20

Source: WTO; Annex I of the RCEP Agreement; AMRO staff and EPG, MAS estimates.

Note: Products that will not see any reduction in tariffs are omitted from Charts A3 and A4. Bilateral import flows refer to trade in beneficiary product between reporting country and its trading partner.

Empirical findings

Tariff reductions are estimated to have a positive, albeit small, impact on the RCEP bloc's GDP. The trade agreement is expected to add 0.4% to the aggregate annual GDP level of the participating economies after the first 10 years, similar to the result obtained by Petri and Plummer (2020). After 20 years, the gains increase to about 0.5% of the grouping's aggregate output level **(Chart A5)**.

Chart A5 RCEP members' aggregate GDP and increment to GDP from RCEP participation
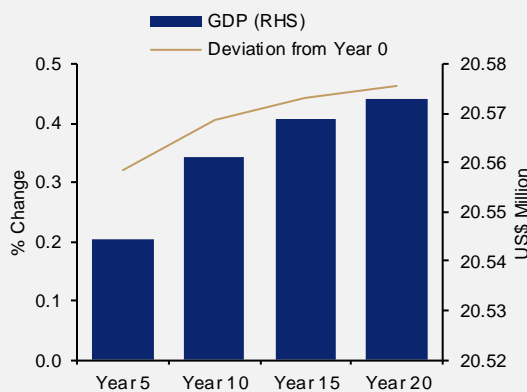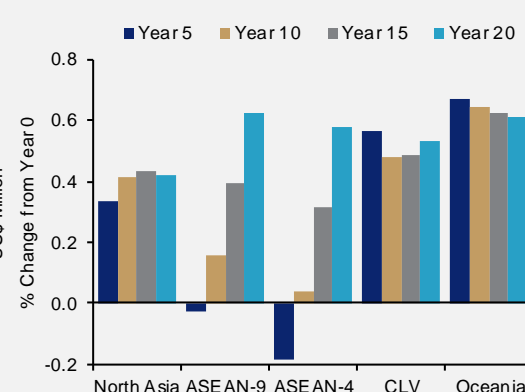
Chart A6 Increment to RCEP economies' GDP by sub-region

Source: WTO; Annex I of the RCEP Agreement; and AMRO staff calculations.

Note: "North Asia" refers to China, Japan and South Korea, while the ASEAN-4 are Indonesia, Malaysia, the Philippines and Thailand. CLV refers to Cambodia, Lao PDR and Vietnam. The ASEAN-9 comprise ASEAN-4, CLV, Singapore and Brunei. Oceania comprises Australia and New Zealand.

The benefit to RCEP signatories, assessed in terms of GDP increment by the projection horizon at Year 20, is broadly similar across the major sub-regions, at between 0.4% and 0.6% of GDP **(Chart A6)**. Most of the sub-regions realise the bulk of the gain quickly. This is largely

because of the substantial initial effects of tariff reductions on trade between Japan and those economies with which it did not previously have trade agreements, both directly for the economies concerned and via spillovers.

The aggregate GDP gain for the North Asian grouping masks significant variation between substantial net gains for Japan and South Korea, and a marginal impact for China. The difference is partly explained by the large gains Japan and South Korea realise from their first bilateral trade deal. China's GDP is estimated to be only marginally affected by the particular pattern of trade liberalisation embodied in the RCEP agreement. The finding provides a perspective from which to view the impact on China, as a mid-cost producer, of closer integration with both higher-productivity advanced countries and low-cost economies.

The ASEAN-9 bloc's estimated end-point gains (+0.6%) are similar to RCEP signatories overall, but the dynamics are different, with an initial estimated loss moving into net gain only by Year 10. These dynamics are driven by two key factors. First, the near-term gains for this group from RCEP tariff reductions are limited, as these countries already enjoy low tariff rates through existing trade agreements. Second, the benefits to the larger ASEAN-4 economies (Indonesia, Malaysia, the Philippines, and Thailand) are delayed as sluggish growth in exports and capital formation of the ASEAN-4 in the early years of the agreement suggests the likelihood of trade diversion in favour of the more efficient exporters in the RCEP group (Banga *et al.*, 2021),[5] although this is later offset by higher investment inflows from the rest of the world. In comparison, the CLV economies, with their lower manufacturing costs, are better positioned to immediately gain from improved market access and lower tariffs on their exports.

Australia and New Zealand are expected to see gains of 0.6% and 0.5%, respectively, from the tariff reductions by Year 20, frontloaded in the early years of the agreement. These relatively large gains partly reflect the significant reductions in tariffs on primary products exported by these economies. Large though these impacts are, the potential benefits to Australia and New Zealand could still be understated by these estimates. The simulations do not incorporate the impact of RCEP in certain services activities where advanced countries may have comparative advantage, such as financial services and telecommunications. Australia and New Zealand may also benefit disproportionately from RCEP's provisions to promote e-commerce, which will facilitate online sales among signatories.

The RCEP agreement is also expected to have uneven effects across industries. Given the varying pace of tariff reductions across product groups, several sectors could benefit from higher production. For example, regional output in sectors like textiles and garments, as well as in leather, wood and paper, will grow faster during the first ten years of the agreement, coinciding with the initial reduction in sectoral tariffs, before expanding at a slower pace thereafter. In comparison, production for sectors such as agriculture, energy and mining, chemicals, as well as electronics, are expected to expand at a faster pace in the longer term. Some of these goods may be less sensitive to tariff reductions, while for others any relocation of production to other lower cost economies could incur substantial costs and resources[6] **(Chart A7)**.

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[5]   A partial equilibrium analysis using the World Bank's WITS-SMART model by Banga *et al.* (2021) showed that tariff revenue losses in the ASEAN are estimated to reach a total of US$3.8 billion annually. The losses would be highest for Malaysia (US$2.2 billion); followed by Thailand (US$801 million); then by Cambodia (USD 334 million), Vietnam (US$192 million), and Indonesia (US$151 million).

[6]   See AMRO (2021) for further discussion on the costs of switching location and business partners.

Chart A7 Growth in sector value-added
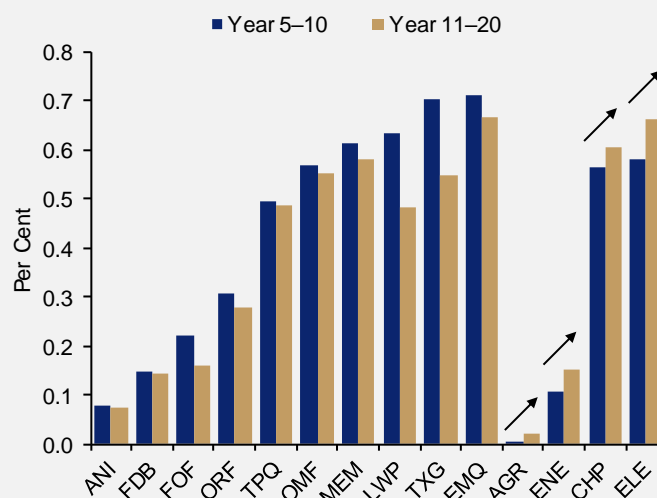
Source: WTO; Annex I of the RCEP Agreement; and AMRO staff calculations.

Impact of common rules of origin

One significant achievement of the RCEP is that it has harmonised important trading rules across a vast economic area. The availability of CRO, in particular, is expected to boost the growth of regional production networks. Rules of origin constitute the information requirements and local content standards for products to be eligible for preferential import tariff rates. With CRO under RCEP, companies can more optimally source raw materials and intermediate inputs from member countries, while benefiting from lower tariff rates. Although the Asia Pacific region already has a large number of trade agreements, the RCEP brings together key upstream high-tech manufacturers such as Japan and South Korea, midstream producers including Thailand and the Philippines, and countries with relatively low labour costs such as Cambodia, Lao PDR and Myanmar, providing greater opportunities for firms to enhance supply and trade linkages.

Event study methodology and assumptions

Trade agreements often combine more than one type of policy change aiming at increasing trade among signatories. Reductions in tariffs may receive most of the attention, but other features such as removal of non-tariff barriers, establishment of common regulatory standards and CRO also play an important role.

The fact that several trade-enhancing measures are introduced concomitantly creates a challenge for the quantitative evaluation of any of the measures individually. A researcher may observe an increase in bilateral trade between parties in a trade agreement, but in most cases will not be able to identify how much of the increase in trade could be assigned to CRO or reductions in tariffs, or whether the two measures are complementary.

There are a few exceptional cases where one can gauge the effects of specific components of trade agreements. For instance, if a country enters a trade agreement from a starting point with no tariffs on certain goods, any increase in trade could be assigned to non-tariff trade-enhancing measures. That is the case for Singapore, which had zero MFN tariffs

in practically all product lines before ASEAN entered into trade agreements with key regional trading partners such as China and Japan.

Another way to identify the effect of CRO is by comparing the difference in the effects of trade agreements on intermediate and consumption goods. All other things equal, CRO should facilitate the development of regional supply chains, and thereby have a stronger trade-enhancing effect on intermediate goods.

The equation that is estimated takes the following form:

$$y_{ijkt} = treaty_{jkt}\beta_{jk} + treaty_{jkt} \times interm_i \times \gamma_{jk} + tariff_{ijkt}\theta + \varphi_i + \omega_{jk} + \mu_t + u_{ijkt}$$

Where y_{ijkt} is the exports, imports or total trade of product aggregate i, between reporting country j and partner country k at year t; $treaty_{jkt}$ is an indicator equal to 1 when there is a trade agreement between countries j and k at time t, $interm_i$ is an indicator equal to 1 for intermediate goods, β_{jk} is the impact of the trade agreement on all product lines that are not intermediate goods; $\beta_{jk} + \gamma_{jk}$ is the impact of the trade agreement on intermediate goods; $tariff_{ijkt}$ is the average tariff rate for product i, between countries j and k at time t; φ_i is a product aggregate specific effect; ω_{jk} is a country-pairs fixed effect; μ_t is a time fixed effect and u_{ijkt} is the residual of the equation.

The hypothesis on the positive impact of bilateral trade agreements on regional goods trade can be tested by estimating the impact of the 2008 ASEAN-Japan Comprehensive Economic Partnership (AJCEP) on bilateral ASEAN-Japan trade flows, controlling for the concomitant impact of tariff reductions; and on intermediate trade flows of electronics, transport equipment and electrical machinery. The regression was estimated for trade flows between Japan, ASEAN countries and a selected group of trading partners over the period 2002−2018.[7] The coefficients of interest are the β_{jk} 's which measures the impact of the trade agreement on all product lines that are not intermediate goods and $\beta_{jk} + \gamma_{jk}$ which estimates the impact of the trade agreement on intermediate goods. Statistically significant and positive values indicate that the trade agreement had a positive impact on trade flows. The estimated results show that AJCEP has had an insignificant effect on Japanese imports from ASEAN, while boosting ASEAN imports of intermediate goods from Japan **(Table A2)**. This is consistent with the hypothesis that regional trade agreements boost the development of regional supply chains, with Japan being a producer of upstream high-tech intermediate inputs, which are exported to ASEAN countries for further processing and assembly. The results hold with or without controls for tariffs, which suggests that regional trade agreements have a positive effect on trade beyond that of tariff reductions.

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[7]   The selected economies included in the regression are Australia, China, India, South Korea and New Zealand.

Table A2 Impact of AJCEP on Japan's trade with ASEAN

	Japan imports		Japan exports		Japan total trade	
AJCEP treaty						
All goods	0	0	0	0	0	0
Intermediate goods	0	0	+	+	+	0
Import tariffs		0		0		–

Note: This table reports the sign and statistical significance of the treaty effect and tariff rates. "0" means that the effect is not statistically significant at the 90 per cent significance level; "+" means that the estimated effect is statistically significant and positive; "–" means that the estimated effect is statistically significant and negative.

A similar exercise can be performed for Singapore trade flows, considering the effects of four treaties to which ASEAN was a signatory, with China (2005), South Korea (2007), Japan (2008), and Australia and New Zealand (2010). The estimates show that, even controlling for tariffs, the trade treaties with China and South Korea had a significant effect on Singapore's exports of intermediate goods, suggesting that Singapore became more integrated into the supply chains centred on these countries. However, no statistically significant effect could be detected for the other trade treaties, with Japan, and Australia and New Zealand **(Table A3).**

Table A3 Impact of ASEAN bilateral and regional trade agreements for Singapore

	Singapore imports		Singapore exports		Singapore total trade	
ASEAN-China FTA						
All goods	0	0	0	0	0	0
Intermediate goods	0	0	+	+	+	+
ASEAN-Korea FTA						
All goods	0	0	0	0	0	0
Intermediate goods	0	0	+	+	+	+
AJCEP treaty						
All goods	–	–	–	–	–	–
Intermediate goods	–	–	0	0	0	0
ASEAN-Australia-New Zealand FTA						
All goods	0	0	0	0	0	0
Intermediate goods	0	0	0	0	0	0
Import tariffs		0		0		0

Note: See note to **Table A2**.

Finally, the exercise can be replicated for ASEAN countries[8], examining the effects of the same four treaties. The estimates show that the trade treaty with China boosted ASEAN exports and total trade of intermediate goods, and the trade treaty with South Korea boosted total trade of intermediate goods between ASEAN and South Korea. The results show mixed effects of the trade treaties with Japan, and Australia and New Zealand **(Table A4).** All in all,

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[8]   Due to data availability and quality issues, the ASEAN countries included in this analysis are Indonesia, Malaysia, Philippines, Singapore and Thailand.

the evidence confirms the previous results about the importance of bilateral or regional trade treaties for the establishment and strengthening of regional value chains in manufacturing.

Table A4 Impact of ASEAN bilateral and regional trade agreements for ASEAN-5 countries

	ASEAN imports		ASEAN exports		ASEAN total trade	
ASEAN-China FTA						
All goods	+	+	0	0	+	+
Intermediate goods	0	0	+	+	+	+
ASEAN-Korea FTA						
All goods	0	0	0	0	0	0
Intermediate goods	0	0	0	0	+	+
AJCEP treaty						
All goods	–	–	–	0	–	–
Intermediate goods	–	–	0	0	0	0
ASEAN-Australia-New Zealand FTA						
All goods	0	–	0	0	0	0
Intermediate goods	–	–	–	–	–	–
Import tariffs		–		–		–

Note: See note to **Table A2**.

Sum-up

RCEP is expected to yield material gains to the region in the longer term, although short-term benefits are likely to be relatively modest. Simulations using an applied CGE model show that tariff reductions will boost the region's GDP by about 0.5% after 20 years, with Japan and South Korea as important beneficiaries. The positive impact of RCEP, however, is expected to go beyond the gains from lower tariffs. Econometric analyses based on past trade agreements suggest that adopting CRO within the region would also have a beneficial impact, increasing regional flows of intermediate products, and deepening cross-border production linkages.

The RCEP will provide a boost to the region's competitiveness as a location for supply chains. It should therefore help to draw in investments, offering companies a broad array of production locations with differing comparative advantages, and the opportunity to export at preferential tariff rates to a wide economic area comprising both high-income consumers and a large and growing middle-income segment.

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