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A Comparative Analysis of RCEP and Pre-Existing Preferential Trade Agreements in ASEAN

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Evaluating Tariff Efficiency:

A Comparative Analysis of RCEP and Pre-Existing Preferential Trade Agreements in ASEAN

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Abstract:

The Regional Comprehensive Economic Partnership (RCEP) is a mega-regional preferential trade agreement (PTA) designed to strengthen regional economic integration. RCEP emerges in a region with various PTAs in place. This study explores RCEP's contribution to the region's PTA network with a focus on a conventional trade provision—tariff reductions. By comparing RCEP tariffs against the lowest tariffs available before RCEP's effectuation, the study found that the RCEP tariff regime is not preferential for most of the member states in comparison to other tariff regimes. With further discussions on the tariff regime of the RCEP, this study reveals that the RCEP should upgrade and deepen its provisions to better serve the goal of regional trade integration.

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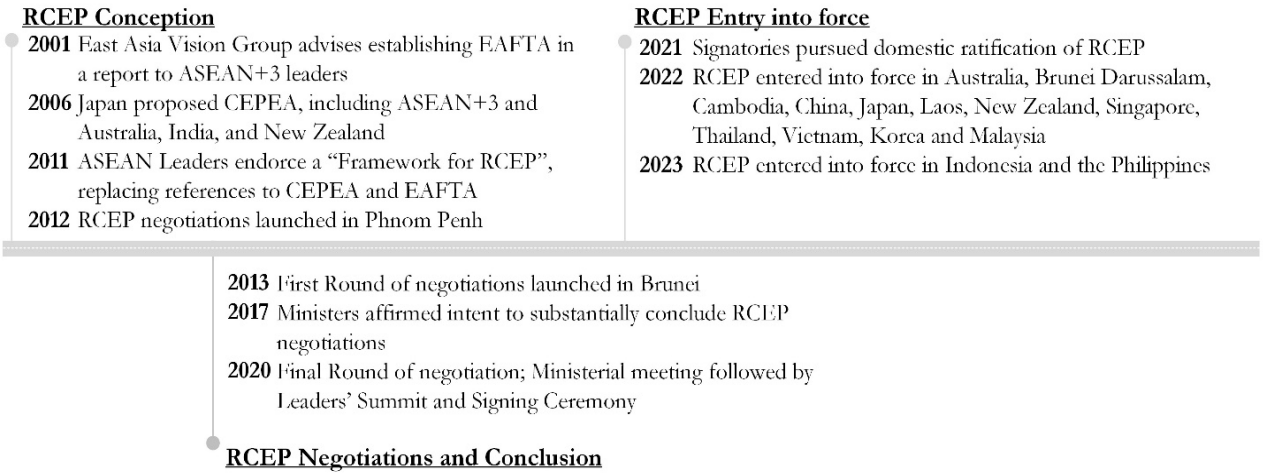
1. Introduction

Effectuated on 1 January 2022, RCEP is a landmark mega-regional trade agreement with the expectation to broaden and deepen regional economic integration and strengthen parties' participation in economic development. The membership consists of ten Association of Southeast Asian Nations (ASEAN) member states and ASEAN's five dialogue partners: Australia, China, Japan, New Zealand, and the Republic of Korea (hereafter, "Korea"), which accounts for approximately one-third of the world's population and 30 per cent of the global GDP (The ASEAN Secretariat, 2022).

The RCEP signatories have high expectations for the RCEP. Building on the existing agreements with ASEAN "plus-one" (hereafter, "ASEAN+1") partners, the RCEP is set to establish a modern and comprehensive economic partnership that will facilitate the expansion of regional trade and investment (Singapore Ministry of Trade and Industry, n.d.)[2]. Figure 1 exhibits the development timeline of RCEP. The negotiating parties spent almost a decade and 31 full rounds of negotiations to finalise the legal text. Comprising twenty chapters, RCEP emerges as a major trade agreement in the region, which addresses a wide array of emerging trade realities beyond traditional trade issues. The agreement touches upon nascent topics such as electronic commerce, micro, small and medium enterprises (MSMEs), and competition. Notably, these issue areas are largely absent in most of the ASEAN-plus agreements, including their upgrades.[3]

Figure 1 RCEP Timeline



Source: Compiled by the authors based on New Zealand Ministry of Foreign Affairs and Trade.

This paper investigates the impact of RCEP on regional trade liberalisation from the perspective of tariff reduction. Given the expansive market size of RCEP and the strong trade and investment connections within the trade bloc, even modest reductions in trade barriers are expected to generate substantial increases in trade advantages for member countries (Suvannaphakdy, 2021). Under the RCEP framework, businesses stand to benefit from a tariff elimination of ultimately 92% for goods traded

[2] ASEAN +1 FTAs including the ASEAN-Australia and New Zealand Free Trade Area (AANZFTA), the ASEAN-Japan Comprehensive Economic Partnership (AJCEP), the ASEAN- China Free Trade Area (ACFTA), and ASEAN-Republic of Korea Comprehensive Economic Cooperation Agreement (AKFTA).

[3] AANZFTA broadly required cooperation on trade issues such as electronic commerce and competition. Its 2023 upgrade is said to enhance the commitments and expand to cover areas such as Trade and Sustainable Development, Government Procurement, and MSMEs (New Zealand Ministry of Foreign Affairs and Trade, 2023).

within the bloc over a period of 20 years (Park, 2022). According to a report by the United Nations Conference on Trade and Development (2021), intra-RCEP trade was valued at approximately US$2.3 trillion in 2019. The report projects that RCEP's tariff concessions will further boost intraregional exports within the newly formed alliance by nearly 2 per cent, equivalent to approximately US$42 billion.

However, prior to the RCEP, ASEAN and its dialogue partners had already established an intricate network of overlapping bilateral and plurilateral PTAs. Most of these already-implemented agreements, especially ASEAN and ASEAN+1 agreements, pledge tariff eliminations as well. In light of the simultaneous presence of multiple trade pacts, prospects for further tariff reductions under the RCEP appear constrained. Therefore, a comparison of the available tariff regimes within the bloc is necessary to fully appreciate the desirability of RCEP tariff concessions to regional trade liberalisation. The result will assist stakeholders and businesses within RCEP in optimising the utilisation of available PTAs and provide insights to trade policymakers.

The comparison of tariffs aims to evaluate the extent to which the RCEP tariff regime is the most preferential option among available tariff regimes. Specifically, this study examines the conditions—defined by country pairs and years—under which RCEP tariffs confer advantages. RCEP allows flexibility in tariff concessions, permitting members to impose different tariffs on different member countries based on preferred schedules. Thus, the comparison is conducted based on the trade partners and country-specific schedules.

Our study departs from the existing literature by (1) using 2021 as a benchmark year to more accurately capture the majority of available tariffs within the RCEP trade bloc, and (2) sourcing tariff data from both the legal texts of PTAs and comprehensive databases to ensure data integrity and completeness. Our methodology aligns closely with the approach outlined by Hayakawa (2022). We use the lowest tariffs available (excluding those within the RCEP framework) for comparison, while they substituted any RCEP tariffs that are higher than the lowest tariffs from other regimes. Consequently, we contribute to relevant RCEP studies by including more datasets and employing a rigorous benchmarking approach to assess RCEP's tariff concession.

The paper finds that RCEP tariff elimination is not preferential for most RCEP members, apart from three Northeast Asia economies, namely China, Japan, and Korea. This is because the existing agreements between RCEP members have already provided in-depth tariff elimination. Nevertheless, due to an absence of bilateral FTAs between Japan-China and Japan-Korea, RCEP tariffs are the sole preferential tariffs these two country pairs could enjoy when trading with each other.

The remaining of the paper is organised as follows. The next section presents the state of trade integration among RCEP participating countries prior to RCEP's effectuation. Section 3 details the methodology employed to assess the RCEP tariff concessions. Section 4 provides the results of the comparison between the tariffs of RCEP and other PTAs and discusses factors affecting the utilisation of RCEP. The paper concludes with the Section 5.

2. Trade integration and tariff reduction in RCEP

The RCEP trade bloc demonstrates a high degree of integration (Table 1). Apart from China, the share of intra-RCEP trade constitutes around 50 per cent of each RCEP country's total trade. In 2022, the top contributors to intra-RCEP trade, in terms of value, were China, Japan, and Korea. China's merchandise trade within the bloc amounted to approximately USD $714 billion in imports and USD $944 billion in exports, constituting almost one-third of its total trade. Japan followed with around USD $420 billion in imports and USD $318 billion in exports. The intra-RCEP trade of Japan made up almost half of its total trade. Comparable values and shares are observed in the case of Korea. Although the volume of intra-RCEP trade contributed by other ASEAN countries is smaller compared to that of non-ASEAN countries, these ASEAN countries exhibit a greater dependency on intra-RCEP trade for their economic activities. To illustrate, Lao PDR's intra-RCEP imports amounted to about USD $7.77 billion, representing approximately 97 per cent of its total imports. Overall, RCEP economies demonstrate a substantial presence in each other's trade.

Table 1 Merchandise trade among RCEP member economies, 2022

	Intra-RCEP trade (US$ bn)		Share of intra-RCEP trade in RCEP member's total trade (%)	
Country	**Imports**	**Exports**	**Imports**	**Exports**
Australia	175.68	297.45	60.24	70.25
Brunei	4.60	13.32	51.97	94.95
Cambodia	39.29	9.80	87.00	27.29
China	714.17	944.64	35.12	26.17
Indonesia	159.03	179.20	69.14	56.06
Japan	420.29	318.85	51.30	43.80
Korea	323.27	330.30	48.51	46.85
Lao PDR	7.77	8.15	96.92	87.03
Malaysia	192.99	203.04	65.70	53.66
Myanmar	26.55	16.55	89.29	61.52
New Zealand	33.82	28.35	65.80	61.07
Philippines	124.06	49.15	74.37	44.62
Singapore	220.40	195.10	51.95	51.47
Thailand	178.09	154.18	61.97	49.99
Vietnam	279.36	151.29	77.95	37.94

Note: In the table, Intra-RCEP trade (US$ bn) denotes trade volume measured in US dollars (billions)
Source: Compiled by the authors from the BACI database.

Prior to the establishment of RCEP, the trade bloc had already accomplished extensive integration through existing trade agreements, with ASEAN playing a pivotal role. In 1992, AMS initiated the ASEAN Free Trade Area (AFTA) to facilitate regional economic integration. Subsequently, ASEAN introduced the ASEAN Trade in Goods Agreement (ATIGA) in 2010, featuring comprehensive tariff concessions to reinforce the integration scheme (Malaysia Ministry of Investment, Trade and Industry, n.d.). All ASEAN+1 FTAs were introduced between 2000 and 2010, and several have since been upgraded to more effectively address trade issues. Several RCEP members have also established bilateral PTAs to augment cooperation alongside ASEAN and ASEAN+1 frameworks. These PTAs

provide legal frameworks to enhance trade cooperation on various trade issues and facilitate the free flow of goods among signatories (The ASEAN Secretariat, n.d.).

RCEP consolidates the existing PTA partnerships by creating an overarching FTA. Table 2 illustrates the existing bilateral and multilateral regional trade agreements between ASEAN and five dialogue partners as of 2022, excluding the RCEP itself. Notably, Japan had no prior PTAs with China or Korea. The three Northeast Asian economies launched negotiations for a China–Japan–Korea Free Trade Agreement (CJKFTA) in 2012, but to date, a concrete agreement has not been achieved. RCEP addresses this gap by bringing these large economies under a single PTA for the first time, thereby complementing and enhancing the regional PTA network.

Table 2 Existing trade agreements between RCEP signatories (as of 2022)

	AUS	CHN	JPN	KOR	NZL	BRN	IDN	KHM	LAO	MMR	MYS	PHL	SGP	THA	VNM
AUS		ChAFTA (2015)	JAEPA (2015) CPTPP (2018)	KAFTA (2014)	ANZCERTA (1983) AANZFTA (2010) CPTPP (2018) PACER Plus (2020)	AANZFTA (2010)	AANZFTA (2010) IA-CEPA (2020)	AANZFTA (2011)	AANZFTA (2011)	AANZFTA (2010)	AANZFTA (2010) MAFTA (2013)	AANZFTA (2010)	SAFTA (2003) AANZFTA (2010) CPTPP (2018)	TAFTA (2005) AANZFTA (2010)	AANZFTA (2010) CPTPP (2019)
CHN				APTA (1975) CN-KR FTA (2015)	NZ-CN FTA (2008)	ACFTA (2005)	ACFTA (2005)	ACFTA (2005) CN-KH FTA (2022)	APTA (1975) ACFTA (2005)	ACFTA (2005)	ACFTA (2005)	ACFTA (2005)	ACFTA (2005) CSFTA (2009)	ACFTA (2005)	ACFTA (2005)
JPN					CPTPP (2018)	BJEPA (2008) AJCEP (2008) CPTPP (2018)	IJEPA (2008) AJCEP (2008)	AJCEP (2008)	AJCEP (2008)	AJCEP (2008)	MJEPA (2006) AJCEP (2008) CPTPP (2018)	PJEPA (2008) AJCEP (2008)	JSEPA (2002) AJCEP (2008) CPTPP (2018)	JTEPA (2007) AJCEP (2008)	AJCEP (2008) JVEPA (2009) CPTPP (2018)
KOR					KNZFTA (2015)	AKFTA (2007)	AKFTA (2007) IK-CEPA (2019)	AKFTA (2007) KH-KR FTA (2022)	APTA (1975) AKFTA (2007)	AKFTA (2007)	AKFTA (2007)	AKFTA (2007)	KSFTA (2006) AKFTA (2007)	AKFTA (2007)	AKFTA (2007) VKFTA (2015)
NZL						TPSEP (2006) AANZFTA (2010)	AANZFTA (2010)	AANZFTA (2010)	AANZFTA (2010)	AANZFTA (2010)	MNZFTA (2010) AANZFTA (2010) CPTPP (2018)	AANZFTA (2010)	ANZSCEP (2001) TPSEP (2006) AANZFTA (2010) CPTPP (2018)	NZ-TH CEP (2005) AANZFTA (2010)	AANZFTA (2010) CPTPP (2018)

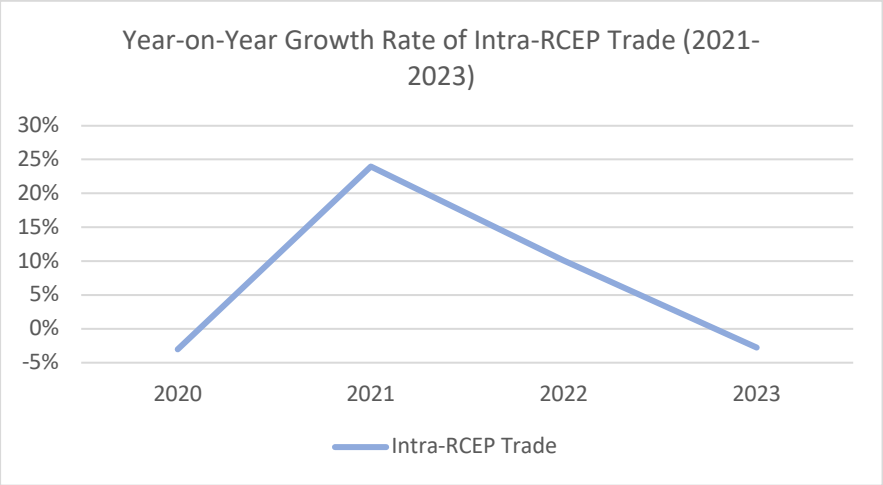
Notes:
AUS is Australia; CHN is China; JPN is Japan; KOR is Korea; NZL is New Zealand; BRN is Brunei; IDN is Indonesia; KHM is Cambodia; LAO is Laos; MMR is Myanmar; MYS is Malaysia; PHL is the Philippines; SGP is Singapore; THA is Thailand; VNM is Vietnam.

ChAFTA = China-Australia Free Trade Agreement; JAEPA = Japan-Australia Economic Partnership Agreement; CPTPP = Comprehensive and Progressive Agreement for Trans-Pacific Partnership; KAFTA = Korea–Australia Free Trade Agreement; ANZCERTA = Australia-New Zealand Closer Economic Relations Trade Agreement; AANZFTA = ASEAN-Australia-New Zealand Free Trade Agreement; PACER Plus = Pacific Agreement on Closer Economic Relations Plus; IA-CEPA = Indonesia-Australia Comprehensive Economic Partnership Agreement; MAFTA = Malaysia-Australia Free Trade Agreement; SAFTA = Singapore-Australia Free Trade Agreement; TAFTA = Thailand-Australia Free Trade Agreement; APTA = Asia-Pacific Trade Agreement; CN-KR FTA = China-Korea Free Trade Agreement; NZ-CN FTA = New Zealand-China Free Trade Agreement; ACFTA = ASEAN-China Free Trade Agreement; CN-KH FTA = China-Cambodia Free Trade Agreement; CSFTA = China-Singapore Free Trade Agreement; BJEPA = Japan-Brunei Economic Partnership Agreement; AJCEP = ASEAN-Japan Comprehensive Economic Partnership; IJEPA = Indonesia-Japan Economic Partnership Agreement; MJEPA = Malaysia-Japan Economic Partnership Agreement; PJEPA = Japan-Philippines Economic Partnership Agreement; JSEPA = Japan-Singapore Economic Partnership Agreement; JTEPA = Japan-Thailand Economic Partnership Agreement; JVEPA = Japan-Vietnam Economic Partnership Agreement; KNZFTA = Korea-New Zealand Free Trade Agreement; AKFTA = ASEAN-Korea Free Trade Area; IK-CEPA = Indonesia-Korea Comprehensive Economic Partnership Agreement; KH-KR FTA = Korea-Cambodia Free Trade Agreement; KSFTA = Korea-Singapore Free Trade Agreement; VKFTA = Vietnam-Korea Free Trade Agreement; TPSEP = Trans-Pacific Strategic Economic Partnership Agreement (P4 Agreement); MNZFTA = Malaysia-New Zealand Free Trade Agreement; ANZSCEP = Australia-New Zealand Closer Economic Partnership; NZ-TH CEP = New Zealand-Thailand Closer Economic Partnership. In parenthesis is the date of entry in the force in particular countries.

Source: Compiled by the authors based on ARIC Free Trade Agreement Database.

Despite the expectations to have a significant impact on regional trade, RCEP's performance in the first two years is mild. Data indicates that RCEP has yet to achieve a substantial increase in internal trade two years post-effectuation. The year-on-year growth of intra-RCEP trade from 2020 to 2023 reveals a fluctuating pattern, reflecting the varying impacts of global economic conditions on the RCEP region (Figure 2). In 2021, trade surged by 24%, demonstrating a strong recovery as regional economies adapted to post-pandemic conditions. However, this momentum slowed in 2022, with growth decelerating to 10%. By 2023, intra-RCEP trade experienced a 3% contraction. Notably, according to a UNCTAD report(2024), similar trends were observed across most RTAs in both intra-regional and extra-regional trade during the first half of 2023.

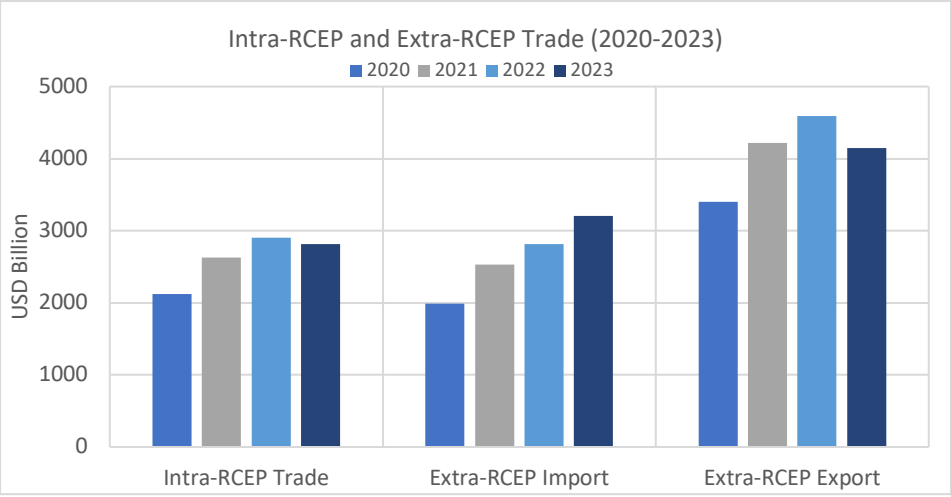
Figure 2 Year-on-Year growth of Intra-RCEP Trade from 2020 to 2023



Source: Computed by the authors based on BACI, ITC, and IMF data.

A similar trend from 2020 to 2023 was observed in RCEP's exports to the rest of the world (RoW) (Figure 3), with the year-on-year growth rate peaking at 24% between 2020 and 2021. This growth rate slowed to 8% in 2022 before contracting by 9% in 2023. In contrast, RCEP's imports from RoW experienced continuous growth throughout the period, maintaining a relatively stable rate of around 11-27%. Notably, RCEP's exports to RoW still represent a significant portion of the bloc's total exports, highlighting the enduring importance of its member countries' established trade relationships with major economies outside the bloc.

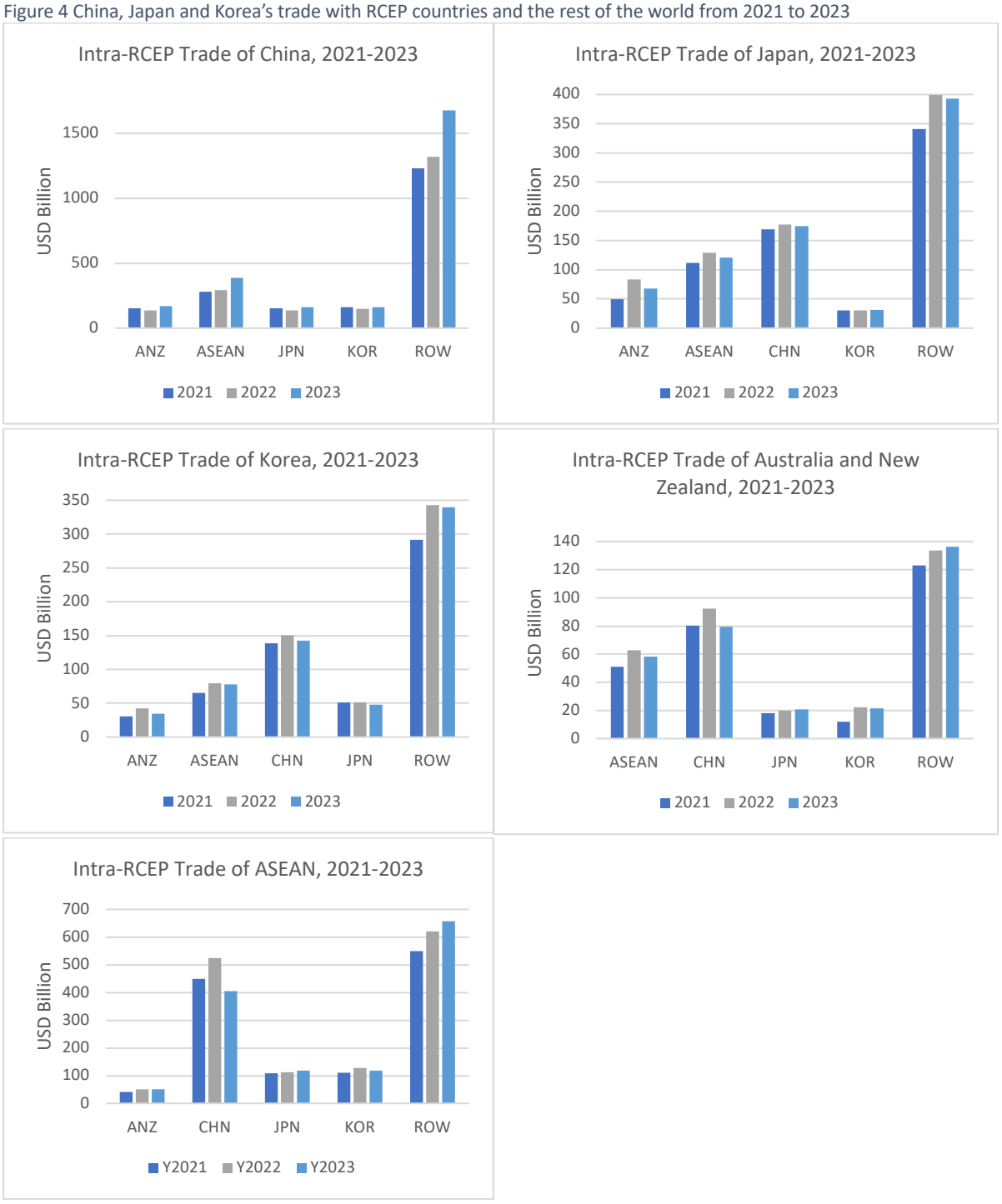
Figure 3 Intra-RCEP and Extra-RCEP Trade from 2020 to 2023



Source: Computed by the authors based on BACI, ITC, and IMF data.

RCEP's impact on regional trade has been limited thus far, with some members experiencing a contraction in intra-RCEP trade. In 2022, China saw a slight decrease in trade, which rebounded with all RCEP partners in 2023. Japan and Korea's trade with both RCEP and global partners followed similar patterns, increasing in 2022 and slightly declining in 2023 (Figure 4). Despite filling the RTA gap between China, Japan, and Korea, RCEP's contribution to integration among these countries remains minimal and requires further observation (Appendix 1). Notably, ASEAN and Australia-New Zealand experienced steady growth in their trade with both RCEP countries and the rest of the world. However, after an increase in intra-RCEP trade in 2022, their trade levels declined in 2023, returning to 2021 levels.

Figure 4 China, Japan and Korea's trade with RCEP countries and the rest of the world from 2021 to 2023

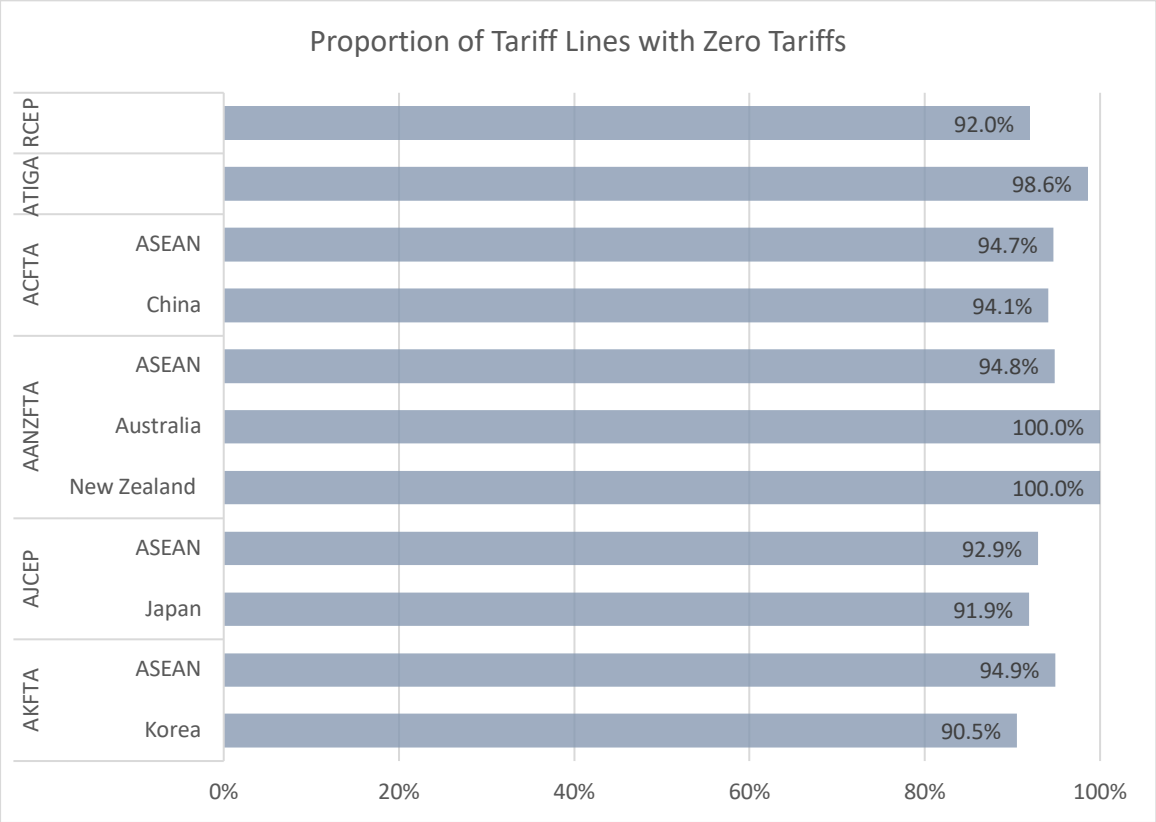


Note: ANZ = Australia and New Zealand, CHN = China, JPN = Japan, KOR = Korea, ROW = Rest of the World
Source: Computed by the authors based on BACI, ITC, and IMF data.

The observations suggest that RCEP has not yet significantly impacted regional trade. However, it is crucial to acknowledge that RCEP has only recently come into effect, and the full implementation of its tariff concession schedules will extend over more than two decades. The review period has been marked by considerable global disruptions, including the COVID-19 pandemic and ongoing geopolitical tensions, which have likely influenced trade patterns and may obscure the true impact of RCEP. Therefore, assessing RCEP's influence requires a comprehensive examination of the regional RTA landscape and the provisions of the RCEP agreement, with careful consideration of the tariff schedules.

Notably, RCEP's tariff reduction rate pales in comparison to those of the other PTAs already available in the trade bloc. The existing multilateral ASEAN and ASEAN +1 agreements, in particular, provide a variety of preferential tariff regimes for intra-RCEP trade. Figure 5 depicts the coverage of tariff concessions under RCEP, ASEAN, and ASEAN +1 FTAs. With full implementation, RCEP eliminates tariffs on nearly 92 per cent of merchandise trade among its member countries. In contrast, the proportion of zero tariffs under ATIGA averaged 98.6 per cent in 2019 (The ASEAN Secretariat, n.d.). The tariff concessions under ASEAN +1 agreements are also substantial. For instance, under the ASEAN-Australia-New Zealand Free Trade Agreement (AANZFTA), Australia and New Zealand each removed 100 per cent of the tariffs on average (Suvannaphakdy, 2021). Furthermore, several RCEP signatories are members of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP).[4] The CPTPP, an RCEP's counterpart PTA, eliminates 99 per cent of tariff lines upon full implementation (Park, 2022). In brief, the substantial tariff concessions achieved through the existing PTAs among RCEP members overshadow those provided by RCEP.

Figure 5 Coverage of tariff concessions under RCEP, ASEAN, and ASEAN +1 FTAs



Notes: RCEP = Regional Comprehensive Economic Partnership; ATIGA = ASEAN Trade in Goods Agreement; ACFTA = ASEAN-China Free Trade Agreement; AANZFTA = ASEAN-Australia-New Zealand Free Trade Agreement; AJCEP = ASEAN-Japan Comprehensive Economic Partnership; AKFTA = ASEAN-Korea Free Trade Area.

[4] These members are Australia, Brunei, Japan, Malaysia, New Zealand, and Vietnam.

Source: Authors' compilation using data from the Economic Research Institute for ASEAN and East Asia (2021) and Suvannaphakdy (2021).

Despite the region's already significant trade integration and substantial tariff reductions, the RCEP encompasses a broader range of parties compared to existing PTAs. As an umbrella PTA for a highly integrated regional market, the RCEP tariff may have a distinct impact on intra-RCEP trade in the long term. The varying levels of tariff reductions in ASEAN+1 PTAs indicate a potential for the RCEP to further reduce tariffs on imports among its members. Furthermore, the RCEP has a key institutional feature that allows the agreement to evolve to accommodate rising global uncertainties and contemporary issues (Thangavelu et al., 2022). This particular feature suggests RCEP's potential to bridge the gap in tariff concessions.

The observations in this section motivate the following examination of how RCEP's tariff concessions contribute to member countries' objective of facilitating the liberalisation of regional merchandise trade.

3. Analysis of RCEP Tariff Reduction

This section examines the preferential tariffs under RCEP in comparison to other tariffs available between RCEP members. Specifically, we conduct a comparative analysis to investigate whether RCEP tariffs are more favourable than the lowest existing tariffs when exporting to another RCEP member country. While there are three forms of tariff rates – ad-valorem, specific, and compound, this paper focuses exclusively on ad-valorem tariffs (World Bank, 2010a).[5]

3.1 Methodology

Following Hayakawa (2022), we conduct a country-year comparison between the RCEP tariff and the lowest existing tariff imposed by member countries in 2021. Specifically, we calculate the "RCEP preference margin" as the difference between these tariffs. This comparison quantitatively assesses the disparities between RCEP tariffs and the lowest existing tariffs over time.

The year 2021 was chosen as the reference point for this study because it immediately precedes the effectuation of RCEP. At this time, the majority of FTAs among RCEP members were already in force. This choice enables the research to capture a comprehensive scope of available tariffs for each country, thus offering a more accurate representation of the region's tariff landscape. However, this choice of benchmarking year might also result in an overestimation of the magnitude of the RCEP tariff reductions, as it excludes tariffs scheduled in existing FTAs after 2021.

Under RCEP, the depth and schedule of tariff reduction differ by country, resulting in 38 different schedules in total. Thirteen member states implemented RCEP in 2022, with Indonesia and the Philippines following suit in 2023.[6] Our analysis adheres to the specific tariff schedules of each member state to ensure accuracy. Therefore, the analysis timeframe varies among member states. For instance, "Year 1" in Australia's analysis refers to 2022, while for Indonesia, it refers to 2023. The analysis

[5] An ad valorem tariff is a common form of customs duty, which is calculated as a percentage of the value of the product; a specific tariff is calculated as a fixed amount of money per unit of the imported item; and a compound tariff includes both ad valorem and a specific component (World Bank, 2010b).

[6] Even countries where RCEP effectuated in the same year might subscribe to different implementation modalities of schedules of tariff commitments. For instance, for Australia, the subsequent year after entry refers to the 12-month period starting on 1 January of that year, while for Japan, the 12-month period starting on 1 April of that year.

excludes Singapore as the country eliminates all customs duties on originating goods under RCEP from the date of entry. The length of the remaining members' schedules ranges from 20 to 36 years.

The comparison measures the degree of differences, referred to as the "RCEP preference margin", over time. This provides insights into the depth of RCEP tariff reduction. To conduct our comparison, we required three types of data: 1) RCEP tariff schedules, 2) PTA tariff data of RCEP members in 2021, and 3) data on the MFN tariffs of RCEP members in 2021. We obtained RCEP tariffs directly from the RCEP legal text. The second category, namely the PTA tariff data, was sourced from the most recent available versions of the legal texts of the agreements and the World Integrated Trade Solution (WITS) database managed by the World Trade Organisation. WITS data, which is based on reports from the statistical offices of each country to relevant international organisations, often has incomplete and variable availability (World Bank, 2011). In contrast, the legal texts of FTAs provide a more accurate presentation of tariffs, though extracting this data can sometimes be challenging.[7] Hence, we utilised a combination of data from both the legal texts and WITS data, with a primary emphasis on the legal texts for their accuracy. If data could not be extracted from the respective legal texts, we supplemented it with WITS data, provided it had high coverage.[8] Finally, the 2021 MFN data was obtained from WITS and used for all substitutions. We ensured the integrity of our dataset by removing any observations with non-existent product codes, missing ad-valorem values, or other inconsistencies across all data sources.

Comparison between tariffs over time mandates consistency in the Harmonised Systems (HS) version used for the product codes adopted by the data sources. However, the tariff schedules under RCEP are based on the global HS 2012 edition, while some MFN tariffs use the HS 2017 edition (Singapore Ministry of Trade and Industry, n.d.). The preferential tariff data are based on multiple HS editions across different agreements. When there are multiple HS versions available within one PTA due to revisions in the tariff schedule, we consistently utilised the most recent version of the HS edition.[9]

To ensure consistency, the study converts all studied tariffs to the HS 2012 version using the conversion table provided by the United Nations Statistics Division (2022). Since we only have the 10-digit MFN data in HS 2017 format, we must employ concordance tables to retroactively convert the HS codes in the MFN data to HS 2002/2012. However, our access to these concordance tables is limited to the 6-digit level for these nomenclatures. This limitation presents a challenge in extending the matching process beyond the 6-digit level. Consequently, we calculate the average ad-valorem MFN for all 10-digit HS codes under each 6-digit HS code to derive the average ad-valorem for each instance of the 6-digit HS Code. To convert from HS 2002 to HS 2012, we first merged all 6-digit HS 2002 codes with the corresponding 6-digit HS 2012 codes using the concordance tables, which is an m:m merge. After the merging, we computed the average ad-valorem tariff for each 6-digit HS 2012 code.

Grounded on the above conversion approach, the tariff data collection process and cleaning process methodology are detailed as follows. To extract data from the legal texts, which were provided in PDF format, we employed the R programming language, specifically utilising the tabulizer package. Structural comparisons between the documents and their representations are conducted to validate data integrity. For each document, we construct a comprehensive data frame encompassing all information and execute data cleaning procedures to eliminate extraneous rows and columns, ensuring the dataset

[7] For the PDF files, there are some cases where imputing the data row-wise becomes impossible. Some cases of non-ad valorem tariff, for example, "5% and RM80", may be included as "5%" due to the way the PDFs are sectioned. In most cases, where the lines in the table are clearly drawn, this should not occur. However, in PDFs like the tariff schedules under AJCEP, this is much more likely.

[8] We use WITS data if it covers at least 75%-80% of the HS 6-digit products. We give some allowance due to the exclusion of non-ad valorem tariffs such as specific and compound tariffs.

[9] For example, if a tariff schedule was available in both HS 2012 and HS 2017, we took the HS 2017 version since it would be the newest version of the tariff schedule.

contains only relevant information. Non-ad-valorem tariffs are removed from the dataset to streamline analysis.

Imputation of missing MFN and Unbound/General Elimination Level (U/GEL) data[10] is carried out to supplement tariff lines excluded from the agreement. This process involves utilising 2021 MFN rates and adhering to WTO guidelines. Subsequently, a secondary verification process is undertaken to ascertain the accuracy and consistency of the imputed MFN data. We then aggregate and compute average ad-valorem rates at the 6-digit HS code level, assessing the computation process for accuracy. The cleaning process concludes with the output data in HS 2012 format; any data in alternative HS versions undergo further conversion using the direct concordance method, with unconvertible HS codes excluded from the analysis.

In order to compare the existing tariffs with the RCEP tariffs across all years of reduction, we utilise a measure of comparison – the difference between the lowest existing tariffs and the RCEP tariffs, the so-called "RCEP preference margin" we mentioned above. This difference is on a product-importer-exporter basis and is calculated as follows for all specifications:

$$Difference_{i,j,k,t} = PTA_{i,j,k,2021} - RCEP_{i,j,k,t} \quad (1)$$

Where $PTA_{i,j,k,2021}$ is the existing tariff of the product k in 2021 that importer j imposes on exporter i, and $RCEP_{i,j,k,t}$ is the RCEP tariff of the product k that importer j imposes on exporter i in the year of reduction t. The average difference value is then calculated for a more direct comparison:

$$Average\ difference_{i,j,t} = \sum_{k} \frac{Difference_{i,j,k,t}}{n}$$

Where n is the total number of product codes in the importer j's tariff schedule for exporters i. A negative difference value would indicate that for the specifications of importer, exporter and RCEP year of reduction, the average RCEP tariff is higher than the average existing tariffs.

4. Analysis of RCEP tariff liberalisation

4.1. Comparative analysis of RCEP tariffs

Following the methodology outlined in the previous section, we conduct the comparison by calculating the RCEP preference margins, which represent the differences between the RCEP tariff and the lowest available tariffs in 2021. The figures below visualise the time-series changes in the average RCEP preference margin across different groupings of member countries. Specifically, a negative margin in any year signifies that in that year of a country's reduction schedule, the RCEP tariff is higher than the existing tariff in 2021. Conversely, a positive margin denotes that the RCEP tariff is lower than the lowest available tariff, positioning RCEP as the most preferential tariff implemented by that member for that year. A zero margin indicates that the RCEP tariff is equal to the lowest available tariff, suggesting no additional tariff advantage under the RCEP for that particular year.

We divided the tariff-imposing countries into three groups— 1) AMS with a single schedule for all tariff reductions, 2) AMS with multiple tariff schedules, and 3) ASEAN dialogue partners.

[10] Unbound/General Elimination Level (U/GEL) data refers to tariff categories within international trade agreements where tariffs are either set at levels subject to eventual elimination or are completely unbound, allowing countries to impose tariffs without specified limits.

4.1.1. AMS with single tariff schedules

Figure 6 depicts the margins of six AMS with one tariff reduction schedule for all RCEP parties, including Brunei Darussalam, Cambodia, Lao PDR, Myanmar, Thailand, and Malaysia. Despite an upward trend over time, the RCEP preference margins remain negative for the majority of country pairs in this group. In other words, the commitment to tariff concessions by these ASEAN countries under RCEP is less favourable compared to their commitments in existing ASEAN and ASEAN+1 agreements.

Notably, among this group of importers, the exporting countries experience varying liberalisation levels contingent upon their respective PTAs. This leads to discrepancies in the lowest available tariffs for exporters, contributing to the differing magnitudes of margins observed in Figure 6. It shall be noted that some margins of Brunei and Malaysia might be underestimated. This is partly due to the exclusion of future tariffs under the CPTPP. CPTPP came into effect in Brunei in 2023, yet this analysis includes only the lowest existing tariffs in 2021 for comparison.

In this group of AMS, Brunei presents a unique pattern. The overlapping lines reflect that Brunei's RCEP margins against existing tariffs imposed on different RCEP members are almost identical in values. The magnitude of its margin is approximately 1.06%, which is trivial compared to other AMS importers. Table 3a indicates that apart from the ATIGA, tariffs imposed on other exporters are largely eliminated under the existing ASEAN+1 PTAs. As shown in Table 3b, by the twentieth year of the RCEP's effectuation, almost 99% of tariffs are zero when RCEP members export to Brunei. Figure 3 also indicates that Brunei's RCEP margin against all existing FTAs will approach zero only after 25 years from the RCEP's implementation. This indicates a substantial reduction in the tariff gap between RCEP and other existing PTAs over time.

Figure 6 Average RCEP preference margin (%) in ASEAN countries with one tariff schedule

Note: 1) "Y" denotes the "Year" outlined in the schedule of RCEP tariff reduction, e.g., "Y5" = "Year Five" after RCEP comes into effect in the respective schedule; 2) Given that the AMS impose identical tariffs on each other, this analysis treats ASEAN as a unified entity and does not distinguish among its members as exporters.
Source: Compiled by the authors.

Table 3 Summary statistics of tariffs: Brunei

a. PTA tariffs summary statistics

Importer	Exporter	PTA	min	mean	median	75th percentile	max	standard deviation
Brunei	ASEAN	ATIGA	0	0	0	0	0	0
	AUS	AANZFTA	0	0.004	0	0	5	0.133
	NZL	AANZFTA	0	0.004	0	0	5	0.133
	CHN	ACFTA	0	0.026	0	0	5	0.356
	JPN	AJCEP	0	0.003	0	0	5	0.110
	KOR	AKFTA	0	0.002	0	0	5	0.098

b. RCEP tariffs summary statistics

Importer	Exporter	Year	min	max	Percentage of non-zero tariff
Brunei	RCEP	1	0.38	30.00	19.53
	RCEP	5	0.23	25.00	19.53
	RCEP	10	0.29	19.00	10.26
	RCEP	15	0.50	10.00	5.88
	RCEP	20	0.63	7.00	1.19
	RCEP	25	0.63	5.00	1.19

Note: AUS is Australia; CHN is China; JPN is Japan; KOR is Korea; NZL is New Zealand; RCEP = Regional Comprehensive Economic Partnership; ATIGA = ASEAN Trade in Goods Agreement; ACFTA = ASEAN-China Free Trade Agreement; AANZFTA = ASEAN-Australia-New Zealand Free Trade Agreement; AJCEP = ASEAN-Japan Comprehensive Economic Partnership; AKFTA = ASEAN-Korea Free Trade Area.
Source: Calculation of the authors.

Similar to Brunei, Malaysia's margins against existing PTAs remain negative even upon full implementation of RCEP. However, unlike Brunei, Malaysia's margins never approach zero. This indicates that the RCEP tariff rates remain less favourable than those of other PTAs for RCEP partners exporting to Malaysia.

Table 4a shows that in Cambodia, the average tariff against each partner country varies depending on the PTAs. For example, ASEAN exporters enjoy almost zero tariffs, while Japan faces an average tariff of approximately 2.9% when exporting to Cambodia. The RCEP margin against existing tariffs imposed on Japan also maintains the highest and eventually becomes positive after 13 years of RCEP's entry into effect, while other margins remain negative. Similar trends could be found for Lao PDR, Myanmar, and Thailand. Japan, in particular, benefits significantly under RCEP when exporting to Myanmar and Thailand, with positive margins appearing just 5 years after RCEP enters into effect. Thus, except for exports from Japan, existing PTAs generally offer more preferential tariffs to exporters in these AMS.

Table 4 Summary statistics of tariffs: Cambodia

a. PTA tariffs

Importer	Exporter	PTA	min	mean	median	75th percentile	max	standard deviation
Cambodia	ASEAN	ATIGA	0	0.17	0	0	35	1.96
	AUS	AANZFTA	0	1.41	0	0	35	4.74
	NZL	AANZFTA	0	1.41	0	0	35	4.74
	CHN	ACFTA	0	0.66	0	0	35	2.84
	JPN	AJCEP	0	2.89	2.5	5	35	2.94
	KOR	AKFTA	0	0.99	0	0	35	3.82

b. RCEP tariffs

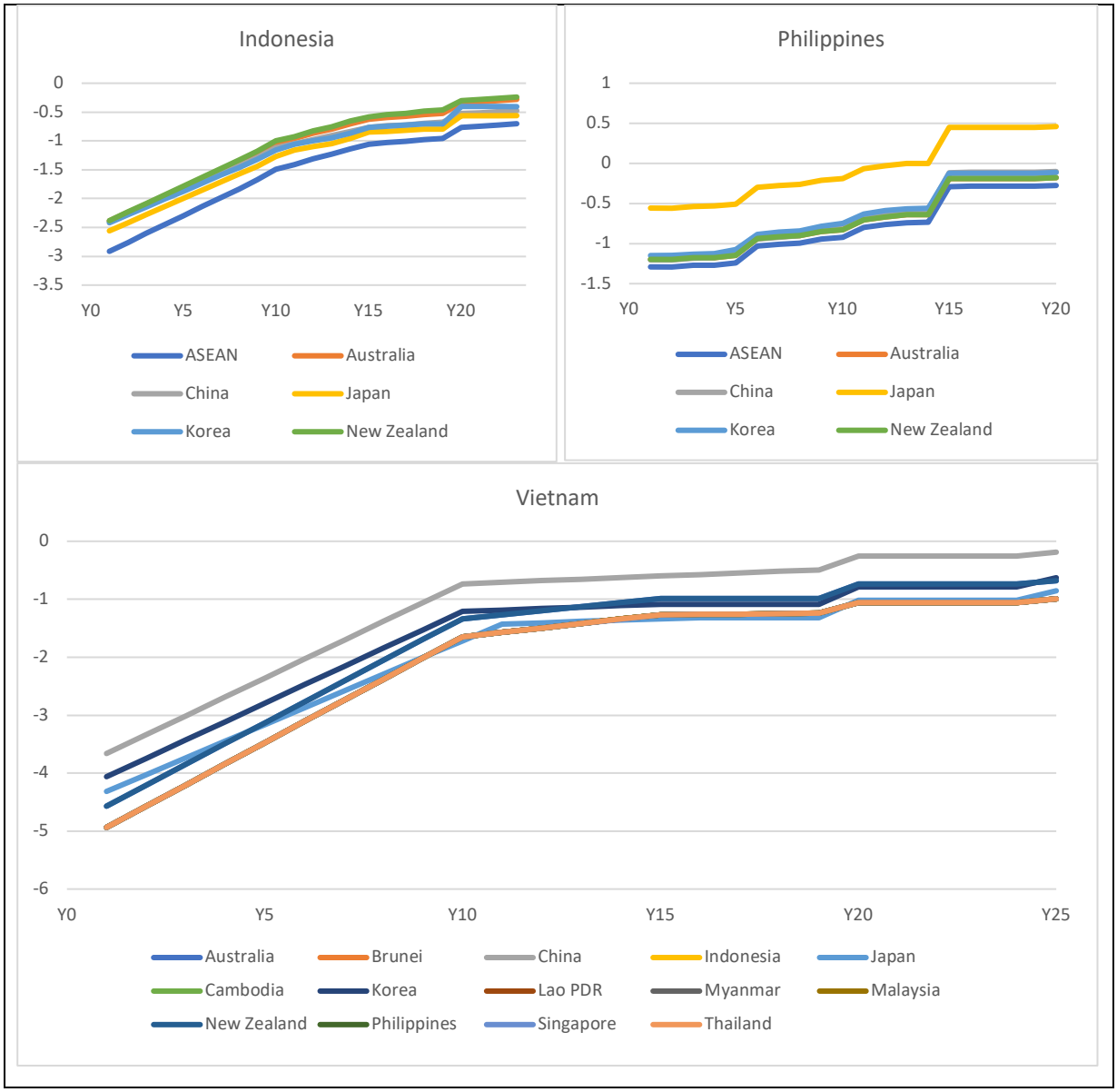
Importer	Exporter	Year	min	max	Percentage of non-zero tariff
Cambodia	RCEP	1	0.70	35	67.31
	RCEP	5	0.50	35	67.31
	RCEP	10	0.36	35	67.31
	RCEP	15	0.06	35	21.25
	RCEP	20	0.04	35	16.54

Note: AUS is Australia; CHN is China; JPN is Japan; KOR is Korea; NZL is New Zealand; RCEP = Regional Comprehensive Economic Partnership; ATIGA = ASEAN Trade in Goods Agreement; ACFTA = ASEAN-China Free Trade Agreement; AANZFTA = ASEAN-Australia-New Zealand Free Trade Agreement; AJCEP = ASEAN-Japan Comprehensive Economic Partnership; AKFTA = ASEAN-Korea Free Trade Area.
Source: Calculation of the authors.

4.1.2. AMS with multiple tariff schedules

Figure 7 below depicts the results of ASEAN countries that adopt different schedules for RCEP exporters, including Indonesia, the Philippines, and Vietnam. The graphs indicate no major difference between RCEP margins against existing tariffs imposed on ASEAN and non-ASEAN countries. A relatively large margin can be found for the Philippines's tariff imposed on exports from Japan, which will surpass zero since the fourteenth year of RCEP. All other margins in this group increase over time but remain negative upon the completion of the RCEP tariff reduction schedule.

Figure 7 Average RCEP preference margin (%) in ASEAN countries with multiple tariff schedules



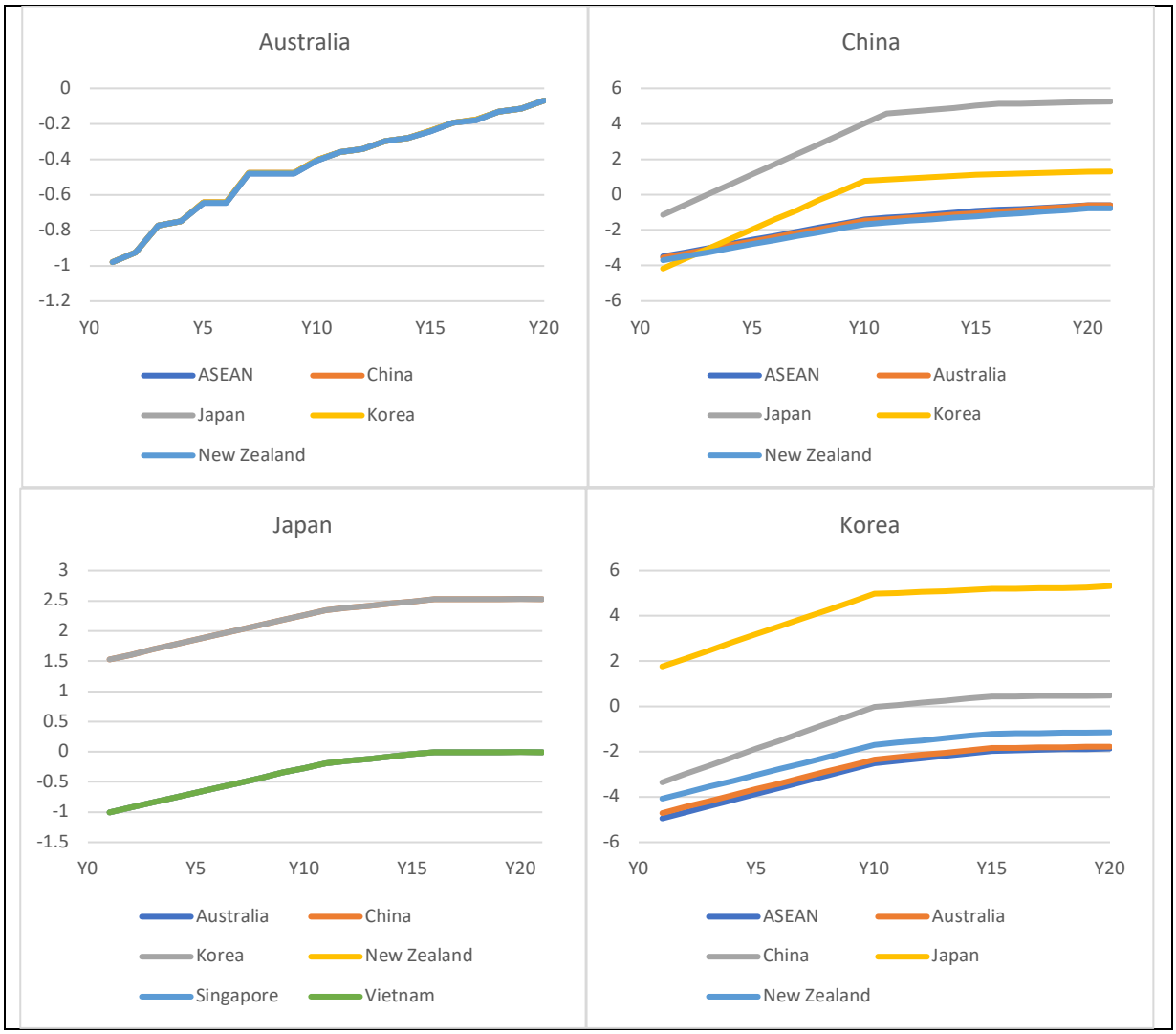
Note: 1) "Y" denotes the "Year" outlined in the schedule of RCEP tariff reduction, e.g., "Y5" = "Year five" after RCEP comes into effect in the respective schedule. 2) Given that the AMS impose identical tariffs on each other, this analysis treats ASEAN as a unified entity and does not distinguish among its members as exporters.
Source: Compiled by the authors.

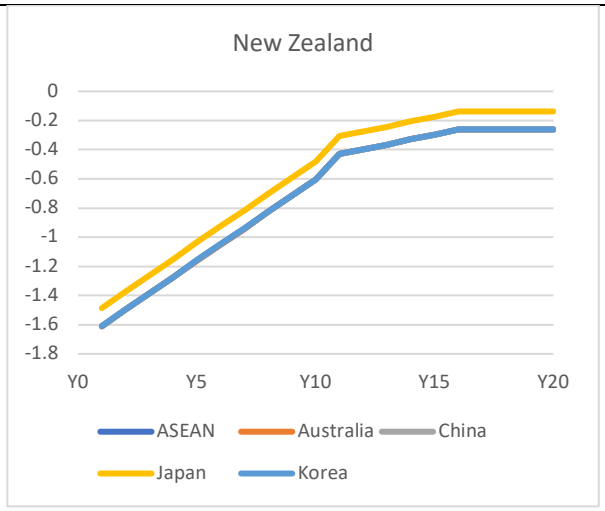
Notably, Vietnam has the largest magnitude of margin within the group. Interestingly, its margin against existing tariffs imposed on Japan is not as high as seen with most AMS. This reflects Japan's significance as a trading and investment partner to Vietnam, and the fact that Vietnam's existing PTAs have already granted Japan low tariffs. Consequently, the additional benefit from RCEP for Japan's exports to Vietnam is less pronounced compared to other countries.

4.1.3. ASEAN dialogue partners

Figure 8 illustrates the margins of "plus-one" countries, encompassing Australia, China, Japan, South Korea, and New Zealand. The results of non-ASEAN members show diverse patterns. The magnitudes of Australia and New Zealand are relatively trivial. Australia's RCEP margins show consistent growth yet remain negative throughout the reduction period. Likewise, New Zealand's RCEP margins also persist in the negative range throughout the RCEP schedule, with the upward trend stopping in the fourteenth year and subsequently plateauing. This indicates that the tariff reductions under RCEP are less favourable compared to the existing tariffs imposed by Australia and New Zealand.

Figure 8 Average RCEP preference margin (%) in ASEAN+1 countries





Note: 1) "Y" denotes the "Year" outlined in the schedule of RCEP tariff reduction, e.g., "Y5" = "Year five" after RCEP comes into effect in the respective schedule; 2) "ASEAN+1" refers to five dialogue partners of ASEAN; 3) Given that the AMS impose identical tariffs on each other, this analysis treats ASEAN as a unified entity and does not distinguish among its members as exporters.
Source: Compiled by the authors.

China's margins display a bifurcated growth pattern: margins against existing tariffs imposed on Japan and South Korea increase steeply, while the margins against existing tariffs imposed on other countries remain negative. This highlights significant differentiation in the tariff benefits Japan and South Korea gain compared to other countries when exporting to China. Specifically, starting from the third year of RCEP's implementation, when RCEP margins become positive, the RCEP tariff emerges as the most preferential regime for Japan's exports to China. For Korea, this favourability shift occurs in the ninth year of the schedule. The margins against the existing tariff regimes in the Northeast Asian states also have greater magnitude while that of the rest are trivial.

Comparable observations are noted in Korea's results. Throughout the reduction period, Korea's RCEP margin against Japan's existing tariffs remains positive, indicating that RCEP tariffs become the most preferential immediately upon entry. However, the margin against China's existing tariffs will only become positive from the tenth year of RCEP's implementation.

Despite the mild upward trend, Japan's RCEP preference margins relative to the existing tariffs imposed on China and Korea remain positive throughout the reduction period. Notably, the margins for China and Korea are represented by overlapping lines due to their identical values (Figure 8).[11] The margins grow from approximately 1.5% in the first year to 2.5% by the end of the period. This progression indicates that employing RCEP tariffs will be advantageous for China and Korea when exporting to Japan.

Table 5a reveals that Japan's average MFN tariffs for China and Korea are 3.11%. Under MFN, a quarter of products from China, Korea, and Japan face tariffs of over 4.45% when exporting to each other. Table 5b shows that after fifteen years of effectuation, merely 18.81% of products will face tariffs under RCEP. In the final year, the proportion of non-zero tariffs drop further to 12.32%. Hence, although the magnitude of Japan's margins is smaller than that of China and Korea, the significance of Japan's tariff elimination under RCEP is non-trivial.

[11] The bottom lines are also overlapped due to the identical values for margins of Australia, New Zealand, Singapore, and Vietnam.

Table 5 Summary statistics of tariffs: Japan

a. PTA tariffs

Importer	Exporter	PTA	min	mean	median	75th percentile	max	standard deviation
Japan	AUS	CPTPP	0	0.57	0	0	40	2.50
	CHN	MFN	0	3.11	0	4.45	40	4.72
	KOR	MFN	0	3.11	0	4.45	40	4.72
	NZL	CPTPP	0	0.57	0	0	40	2.50
	SGP	CPTPP	0	0.57	0	0	40	2.50
	VNM	CPTPP	0	0.57	0	0	40	2.50

b. RCEP tariffs

Importer	Exporter	Year	min	max	Percentage of non-zero tariff
Japan	RCEP	1	0.06	40	35.65
	RCEP	5	0.06	40	35.65
	RCEP	10	0.03	40	35.65
	RCEP	15	0.01	40	18.81
	RCEP	20	0.02	40	12.34
	RCEP	21	0.02	40	12.32

Note: AUS is Australia; CHN is China; JPN is Japan; KOR is Korea; NZL is New Zealand; SGP is Singapore; VNM is Vietnam; CPTPP = Comprehensive and Progressive Agreement for Trans-Pacific Partnership; RCEP = Regional Comprehensive Economic Partnership; MFN = Most-Favoured Nations (MFN) Clause.
Source: Calculation of the authors.

The above observations suggest that China, Japan, and Korea are the major beneficiaries of RCEP's tariff reductions. RCEP marks Japan's first trade agreement with both China and Korea. Consequently, significant tariff reductions are observed for China and Korea's imports from Japan, as no prior tariff concessions other than normal rates of duty (i.e., MFN tariff) existed in bilateral trade between China-Japan and Korea-Japan. This is subsequently reflected in the margins against the existing tariffs imposed on Japan by China and Korea. In the final year, RCEP provides the most preferential tariffs to Japan when exporting to China and Korea, with margins reaching above 5%. This substantial reduction highlights the significant trade benefits Japan could gain through RCEP, particularly in its trade relationships with China and Korea. In a reciprocal nature, Japan's tariffs against Korea and China are also reduced under RCEP.

In brief, the findings indicate that RCEP's tariff commitments are not favourable compared to the existing PTAs for most RCEP members. Further, China, Korea, and Japan are three countries that will benefit from tariff reduction under RCEP. The plus-one countries' RCEP margins against their existing tariffs imposed on AMS are largely below zero even after the completion of the scheduled tariff reduction under RCEP. Similarly, AMS' RCEP margins against their existing tariffs imposed on plus-one countries, reflect the same trend. Put simply, compared to bilateral agreements, ASEAN+1 agreements, and another megaregional agreement – CPTPP, RCEP falls short in its tariff elimination. China, Japan and Korea are the major beneficiaries of RCEP. The agreement is particularly beneficial for Japan, as most RCEP members' margins against their existing tariffs imposed on Japan are notably larger than those imposed on other plus-one countries and AMS.

4.2. Discussion on RCEP's tariff utilisation

4.2.1. Rules of origin (RoO)

The favourability of tariff rates is not the only factor which influences the utilisation of PTAs in practice. The trade in goods provisions in PTAs often extend beyond mere tariff liberalisation and cover various aspects such as RoO and technical barriers to trade (TBT) (The ASEAN Secretariat, n.d.). Specifically, the utilisation of PTA is found to be largely determined by an appropriate cumulative rules of origin (RoO) regime (Chung et al., 2022). RoO are criteria used to determine the national source of a product (World Trade Organization, n.d.). When two countries have multiple PTAs in place, firms typically use only one PTA tariff when exporting goods from their home country to another country. To qualify for preferential treatment, firms must comply with the RoO set out by the selected PTA.

RoO of RCEP is widely considered a potential advantage for the utilisation of RCEP tariffs (European Union, 2021; APEC Policy Support Unit, 2022; Estrades et al., 2023). Studies show that exporters likely prefer PTA tariffs associated with less restrictive RoO (Hayakawa, 2022; Estrades et al., 2023). RCEP's Rules of Origin chapter (Chapter 3) consolidates RoO under the ASEAN and ASEAN+1 agreements with a theoretically less restrictive regime, offering a common platform for RoO, which aims to simplify compliance costs and procedures for firms operating in the region (Hayakawa, 2022).

While the RCEP has potential advantages in providing a unified rules of origin framework, it does not offer substantial incremental value over existing ASEAN+1 FTAs. According to Asian Development Bank (2023), the RCEP fares better in terms of the leniency of product-specific RoO compared to older ASEAN+1 FTAs like the ACFTA and the AJCEP. However, it does not surpass the leniency of the AANZFTA, which was reviewed and updated in 2015. Additionally, the completed tariff dismantling under ASEAN+1 FTAs and the complexity of RCEP's tariff phase-out schedules might prevent RCEP from offering better preferential tariffs than the existing ASEAN+1 FTAs for many years to come. Furthermore, RCEP does not necessarily set a new standard for RoO or operational certification procedures (Asian Development Bank, 2023). Although RCEP improves upon ATIGA and CPTPP in some areas, it still falls short of significant PSRO simplification, with notable leniency observed primarily in the textile and garments sector, which represents only a small fraction of intra-RCEP trade (Asian Development Bank, 2022). Further negotiations and adjustments are required to unlock its potential fully.

4.2.2. Non-tariff measures (NTMs)

RCEP also enhances provisions on NTMs. United Nations Conference on Trade and Development (UNCTAD) defines NTMs as policy measures other than tariffs that can potentially have an economic effect on international trade in goods (UNCTAD, 2019). This includes rules and provisions on TBTs and restrictions on foreign providers of services, as well as on government procurement (GP), among others. The Economic and Social Commission for Asia and the Pacific (ESCAP) and UNCTAD estimate that the trade expenses associated with Non-Tariff Measures (NTMs) surpass those of standard customs tariffs by more than twofold (UNCTAD, 2019). Compared to the previous agreements, RCEP enhances provisions to address NTMs, including providing a platform to allow RCEP member countries to conduct technical consultations and enter into stronger binding commitments to improve the transparency of import regulations. These provisions aim to better facilitate preferential market access and reduce trade transaction costs for businesses.

In summary, while the RCEP aims to simplify the complex landscape of FTAs in Asia by offering a unified set of rules of origin, it does not currently provide significantly more preferential treatment compared to existing agreements like ATIGA, CPTPP, and ASEAN+1 FTAs. The potential benefits of the RCEP will require further harmonisation and simplification efforts to become fully effective.

5. Conclusion

This paper studies whether the RCEP tariff regime is preferential compared to other available tariff regimes. By observing the RCEP preference margin over the RCEP reduction period, we conclude that overall, the RCEP tariff is not preferential even upon full implementation. The only RCEP members benefiting from the RCEP tariff reductions are China, Japan, and Korea. Notably, the determinants of utilisation of tariffs are not exclusive to tariff rates. RCEP is said to stand out in the RoO and cumulation provisions, which heavily affect exporters' decisions regarding their choice of PTA tariff. Nevertheless, current studies suggest that the improvements are not as significant as perceived.

In conclusion, the RCEP complements the regional PTA network by providing an umbrella agreement to consolidate the existing commitments to regional trade liberalisation and integration. Nevertheless, given that the majority of ASEAN+ 1 agreements have yet to achieve full elimination of tariffs, RCEP has the potential to further improve from the perspective of tariff reduction.

This study underscores the imperative for policymakers to leverage RCEP's institutional feature, i.e., the "living nature," to negotiate deeper commitments in tariff reductions and related procedures. Concluded in 2020, the RCEP agreement is approaching its five-year mark. In the interim, ASEAN+1 agreements such as AANZFTA and ACFTA have undergone upgrades or upgrade negotiations. The potential revival of an "RCEP Plus"[12] China–Japan-South Korea Free Trade Agreement (CJKFTA) further demonstrates the ongoing commitment of RCEP members to trade liberalization and integration. The evolving landscape of trade and the acceleration of regional integration necessitates a more ambitious and forward-looking RCEP 2.0.

[12] The term "RCEP Plus" indicates that CJKFTA's level of liberalisation shall exceed that of the RCEP.

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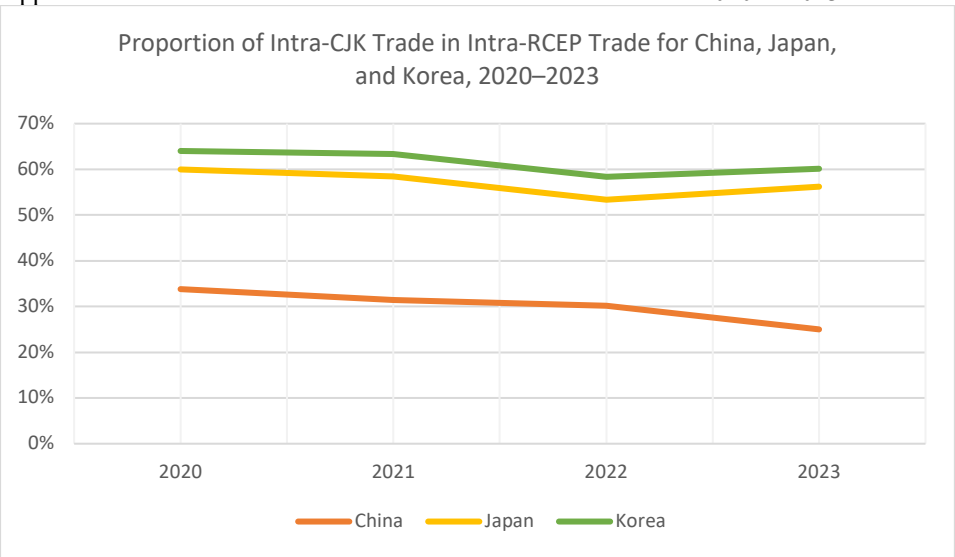
Appendices

Appendix 1 Growth of Intra-CJK trade in Intra-RCEP trade from 2020 to 2023



Note: CJK = China, Japan, and Korea
Source: Computed by the authors based on BACI, ITC, and IMF data.

Appendix 2 Summary statistics of Lao PDR

a. PTA tariffs

Importer	Exporter	PTA	min	mean	median	75th percentile	max	standard deviation
Lao PDR	ASEAN	ATIGA	0	0.31	0	0	30	2.10
	AUS	AANZFTA	0	0.85	0	0	30	3.09
	NZL	AANZFTA	0	0.85	0	0	30	3.09
	CHN	ACFTA	0	0.24	0	0	40	2.23
	JPN	AJCEP	0	4.13	3.33	5	21.90	2.43
	KOR	AKFTA	0	1.08	0	0	40	4.18

b. RCEP tariffs

Importer	Exporter	Year	min	max	Percentage of non-zero tariff
Lao PDR	RCEP	1	0.56	40	74.02
	RCEP	5	0.44	40	74.02
	RCEP	10	0.22	40	74.02
	RCEP	15	0.56	40	18.90
	RCEP	20	0.38	40	13.74

Source: Calculation by the authors.

Appendix 3 Summary statistics of Myanmar

a. PTA tariffs

Importer	Exporter	PTA	min	mean	median	75th percentile	max	standard deviation
Myanmar	ASEAN	ATIGA	0	0.05	0	0	10	0.65
	AUS	AANZFTA	0	1.26	0	0	40	4.02
	NZL	AANZFTA	0	1.26	0	0	40	4.02
	CHN	ACFTA	0	0.28	0	0	30	1.26
	JPN	AJCEP	0	4.12	3	5	40	2.94
	KOR	AKFTA	0	0.62	0	0	40	2.75

b. RCEP tariffs

Importer	Exporter	Year	min	max	Percentage of non-zero tariff
Myanmar	RCEP	1	0.20	40	67.22
	RCEP	5	0.20	40	67.22
	RCEP	10	0.20	40	67.22
	RCEP	15	0.07	40	17.85
	RCEP	20	0.07	40	13.20

Source: Calculation by the authors.

Appendix 4 Summary statistics of Malaysia

a. PTA tariffs

Importer	Exporter	PTA	min	mean	median	75th percentile	max	standard deviation
Malaysia	ASEAN	ATIGA	0	0.07	0	0	30	1.23
	AUS	AANZFTA	0	0.13	0	0	40	1.59
	NZL	AANZFTA	0	0.13	0	0	40	1.59
	CHN	ACFTA	0	0.42	0	0	40	2.41
	KOR	AKFTA	0	0.47	0	0	32	2.38

b. RCEP tariffs

Importer	Exporter	Year	min	max	Percentage of non-zero tariff
Malaysia	RCEP	1	0.08	50	30.29
	RCEP	5	0.08	50	30.29
	RCEP	10	0.00	50	15.06
	RCEP	15	0.00	40	9.51
	RCEP	20	0.00	40	8.74
	RCEP	23	0.00	40	8.74

Source: Calculation by the authors.

Appendix 5 Summary statistics of Thailand

a. PTA tariffs

Importer	Exporter	PTA	min	mean	median	75th percentile	max	standard deviation
Thailand	ASEAN	ATIGA	0	0	0	0	0	0
	AUS	AANZFTA	0	0.24	0	0	109	2.67
	NZL	AANZFTA	0	0.24	0	0	109	2.67
	CHN	ACFTA	0	0.59	0	0	50	3.50
	JPN	AJCEP	0	3.05	2.63	5	40	3.34
	KOR	AKFTA	0	0.32	0	0	59.43	2.14

b. RCEP tariffs

Importer	Exporter	Year	min	max	Percentage of non-zero tariff
Thailand	RCEP	1	0.63	226	26.54
	RCEP	5	0.50	226	26.54
	RCEP	10	0.07	226	14.53
	RCEP	15	0.07	226	8.34
	RCEP	20	0.07	226	5.98

Source: Calculation by the authors.

Appendix 6 Summary statistics of Indonesia

a. PTA tariffs

Importer	Exporter	PTA	min	mean	median	75th percentile	max	standard deviation
Indonesia	ASEAN	ATIGA	0	0.47	0	0	77.33	2.54
	AUS	AANZFTA	0	0.50	0	0	77.33	2.62
	NZL	AANZFTA	0	0.50	0	0	77.33	2.62
	CHN	ACFTA	0	0.50	0	0	40.00	2.56
	JPN	AJCEP	0	0.39	0	0	37.40	1.68
	KOR	AKFTA	0	0.50	0	0	33.89	1.97

b. RCEP tariffs

Importer	Exporter	Year	min	max	Percentage of non-zero tariff
Indonesia	ASEAN	1	0.01	150	38.12
	ASEAN	5	0.01	150	38.12
	ASEAN	10	0.01	150	21.36
	ASEAN	15	0.01	150	10.89
	ASEAN	20	0.01	150	9.13
	ASEAN	23	0.01	150	9.13
	AUS	1	0.01	150	38.14
	AUS	5	0.01	150	38.14
	AUS	10	0.01	150	22.15
	AUS	15	0.01	150	12.41
	AUS	20	0.01	150	10.59
	AUS	23	0.01	150	10.59
	CHN	1	0.01	150	38.04
	CHN	5	0.01	150	38.04
	CHN	10	0.01	150	22.11
	CHN	15	0.01	150	13.64
	CHN	20	0.01	150	11.51
	CHN	23	0.01	150	11.51
	JPN	1	0.01	150	38.12
	JPN	5	0.01	150	38.12
	JPN	10	0.01	150	22.19
	JPN	15	0.01	150	12.87
	JPN	20	0.01	150	11.32
	JPN	23	0.01	150	11.32
	KOR	1	0.01	150	38.27
	KOR	5	0.01	150	38.27
	KOR	10	0.01	150	22.21
	KOR	15	0.01	150	14.20
	KOR	20	0.01	150	11.37
	KOR	23	0.01	150	11.37
	NZL	1	0.01	150	38.14
	NZL	5	0.01	150	38.12
	NZL	10	0.01	150	21.38
	NZL	15	0.01	150	11.59
	NZL	20	0.01	150	9.72
	NZL	23	0.01	150	9.72

Source: Calculation by the authors.

Appendix 7 Summary statistics of Philippines

a. PTA tariffs

Importer	Exporter	PTA	min	mean	median	75th percentile	max	standard deviation
Philippines	ASEAN	ATIGA	0	0.01	0	0	5	0.13
	AUS	AANZFTA	0	0.10	0	0	10.75	0.59
	NZL	AANZFTA	0	0.10	0	0	10.75	0.59
	CHN	ACFTA	0	0.17	0	0	11.76	0.78
	JPN	AJCEP	0	0.74	0.33	0.95	11.76	1.00
	KOR	AKFTA	0	0.16	0	0	12.88	0.78

b. RCEP tariffs

Importer	Exporter	Year	min	max	Percentage of non-zero tariff
Philippines	ASEAN	1	0.01	45	12.41
	ASEAN	5	0.01	45	12.41
	ASEAN	10	0.01	45	12.41
	ASEAN	15	0.01	30	4.34
	ASEAN	20	0.01	30	4.30
	AUS	1	0.01	45	12.43
	AUS	5	0.01	45	12.43
	AUS	10	0.01	45	12.43
	AUS	15	0.01	30	4.34
	AUS	20	0.01	30	4.30
	CHN	1	0.01	45	12.78
	CHN	5	0.01	45	12.78
	CHN	10	0.01	45	12.78
	CHN	15	0.01	30	4.46
	CHN	20	0.01	30	4.43
	JPN	1	0.01	45	12.50
	JPN	5	0.01	45	12.50
	JPN	10	0.01	45	12.50
	JPN	15	0.01	30	4.41
	JPN	20	0.01	30	4.37
	KOR	1	0.01	45	12.77
	KOR	5	0.01	45	12.77
	KOR	10	0.01	45	12.77
	KOR	15	0.00	30	4.51
	KOR	20	0.00	30	4.47

Source: Calculation by the authors.

Appendix 8 Summary statistics of Vietnam

a. PTA tariffs

Importer	Exporter	PTA	min	mean	median	75th percentile	max	standard deviation
Vietnam	ASEAN	ATIGA	0	0.02	0	0	5	0.32
	AUS	AANZFTA	0	0.62	0	0	100	3.99
	NZL	AANZFTA	0	0.62	0	0	100	3.99
	CHN	ACFTA	0	0.96	0	0	50	4.28
	JPN	CPTPP	0	0.91	0	0	75	4.54
	KOR	VKFTA	0	0.75	0	0	50	4.00

b. RCEP tariffs

Importer	Exporter	Year	min	max	Percentage of non-zero tariff
Vietnam	ASEAN	1	0.29	100	28.60
	ASEAN	5	0.16	100	28.60
	ASEAN	10	0.17	100	13.63
	ASEAN	15	0.35	100	6.97
	ASEAN	20	0.35	100	6.28
	ASEAN	25	0.35	100	6.28
	AUS	1	0.11	100	28.60
	AUS	5	0.11	100	28.60
	AUS	10	0.11	100	13.63
	AUS	15	0.11	100	6.97
	AUS	20	0.11	100	6.97
	AUS	25	0.11	100	6.97
	CHN	1	0.11	100	28.60
	CHN	5	0.11	100	28.60
	CHN	10	0.11	100	13.63
	CHN	15	0.11	100	13.63
	CHN	20	0.11	100	11.19
	CHN	25	0.11	100	11.19
	JPN	1	0.11	100	28.60
	JPN	5	0.11	100	28.60
	JPN	10	0.03	100	28.60
	JPN	15	0.03	100	13.63
	JPN	20	0.11	100	9.94
	JPN	25	0.11	100	9.94
	KOR	1	0.11	100	28.60
	KOR	5	0.11	100	28.60
	KOR	10	0.11	100	13.63
	KOR	15	0.11	100	9.94
	KOR	20	0.11	100	9.94
	KOR	25	0.11	100	9.94
	NZL	1	0.11	100	28.60
	NZL	5	0.11	100	28.60
	NZL	10	0.11	100	13.63
	NZL	15	0.11	100	6.97
	NZL	20	0.11	100	6.97
	NZL	25	0.11	100	6.97

Source: Calculation by the authors.

Appendix 9 Summary statistics of China

a. PTA tariffs

Importer	Exporter	PTA	min	mean	median	75th percentile	max	standard deviation
China	ASEAN	ACFTA	0	0.43	0	0	50	2.77
	AUS	AUS	0	0.49	0	0	57	3.10
	JPN	MFN	0	7.40	6.5	8	65	5.26
	KOR	AKFTA	0	3.31	2.9	4.5	57	4.56
	NZL	NZ-CN FTA	0	0.30	0	0	37.5	2.41

b. RCEP tariffs

Importer	Exporter	Year	min	max	Percentage of non-zero tariff
China	ASEAN	1	0.01	150	38.12
	ASEAN	5	0.01	150	38.12
	ASEAN	10	0.01	150	21.36
	ASEAN	15	0.01	150	10.89
	ASEAN	20	0.01	150	9.13
	ASEAN	23	0.01	150	9.13
	AUS	1	0.01	150	38.14
	AUS	5	0.01	150	38.14
	AUS	10	0.01	150	22.15
	AUS	15	0.01	150	12.41
	AUS	20	0.01	150	10.59
	AUS	23	0.01	150	10.59
	CHN	1	0.01	150	38.04
	CHN	5	0.01	150	38.04
	CHN	10	0.01	150	22.11
	CHN	15	0.01	150	13.64
	CHN	20	0.01	150	11.51
	CHN	23	0.01	150	11.51
	JPN	1	0.01	150	38.12
	JPN	5	0.01	150	38.12
	JPN	10	0.01	150	22.19
	JPN	15	0.01	150	12.87
	JPN	20	0.01	150	11.32
	JPN	23	0.01	150	11.32
	KOR	1	0.01	150	38.27
	KOR	5	0.01	150	38.27
	KOR	10	0.01	150	22.21
	KOR	15	0.01	150	14.20
	KOR	20	0.01	150	11.37
	KOR	23	0.01	150	11.37
	NZL	1	0.01	150	38.14
	NZL	5	0.01	150	38.12
	NZL	10	0.01	150	21.38
	NZL	15	0.01	150	11.59
	NZL	20	0.01	150	9.72
	NZL	23	0.01	150	9.72

Source: Calculation by the authors.

Appendix 10 Summary statistics of Korea

a. PTA tariffs

Importer	Exporter	PTA	min	mean	median	75th percentile	max	standard deviation
Korea	ASEAN	AKFTA	0	3.42	0	0	709.9	28.51
	AUS	KATIGA	0	3.69	0	0	800.3	36.10
	CHN	AKFTA	0	6.46	0	3	800.3	39.96
	JPN	MFN	0	12.22	8	8	800.3	45.26
	NZL	KNZFTA	0	4.32	0	0	800.3	39.39

b. RCEP tariffs

Importer	Exporter	Year	min	max	Percentage of non-zero tariff
Korea	ASEAN	1	0.21	800.3	42.87
	ASEAN	5	0.15	800.3	42.87
	ASEAN	10	0.08	800.3	25.50
	ASEAN	15	0.24	800.3	13.49
	ASEAN	20	0.19	800.3	12.72
	AUS	1	0.21	800.3	42.89
	AUS	5	0.15	800.3	42.89
	AUS	10	0.08	800.3	25.52
	AUS	15	0.24	800.3	13.51
	AUS	20	0.19	800.3	12.80
	CHN	1	0.06	800.3	60.19
	CHN	5	0.06	800.3	60.19
	CHN	10	0.02	800.3	28.33
	CHN	15	0.02	800.3	18.44
	CHN	20	0.02	800.3	18.29
	CHN	35	0.02	800.3	18.29
	JPN	1	0.13	800.3	69.39
	JPN	5	0.13	800.3	69.39
	JPN	10	0.02	800.3	32.05
	JPN	15	0.01	800.3	25.21
	JPN	20	0.01	800.3	21.00
	NZL	1	0.21	800.3	42.87
	NZL	5	0.15	800.3	42.87
	NZL	10	0.08	800.3	25.50
	NZL	15	0.24	800.3	13.49
	NZL	20	0.19	800.3	12.78

Source: Calculation by the authors.

Appendix 11 Summary statistics of Australia

a. PTA tariffs

Importer	Exporter	PTA	min	mean	median	75th percentile	max	standard deviation
Australia	ASEAN	AANZFTA	0	0	0	0	0	0
	NZL	AANZFTA/CPTPP	0	0	0	0	0	0
	CHN	ChATIGA	0	0	0	0	0	0
	KOR	KATIGA	0	0	0	0	0	0
	JPN	CPTPP	0	0	0	0	0	0
	SGP	CPTPP	0	0	0	0	0	0
	VNM	CPTPP	0	0	0	0	0	0

b. RCEP tariffs

Importer	Exporter	Year	min	max	Percentage of non-zero tariff
Australia	RCEP	1	0.19	10	24.22
	RCEP	5	0.19	10	18.99
	RCEP	10	0.14	10	8.94
	RCEP	15	0.19	5	7.26
	RCEP	20	0.09	5	1.81

Source: Calculation by the authors.

Appendix 12 Summary statistics of New Zealand

a. PTA tariffs

Importer	Exporter	PTA	min	mean	median	75th percentile	max	standard deviation
New Zealand	ASEAN	AANZFTA	0	0	0	0	0	0
	AUS	AANZFTA	0	0	0	0	0	0
	CHN	NZ-CN FTA	0	0	0	0	0	0
	KOR	KNZFTA	0	0	0	0	0	0
	JPN	CPTPP	0	0.12	0	0	4.2	0.60
	SGP	CPTPP	0	0.12	0	0	4.2	0.60
	VNM	CPTPP	0	0.12	0	0	4.2	0.60

b. RCEP tariffs

Importer	Exporter	Year	min	max	Percentage of non-zero tariff
New Zealand	RCEP	1	0.06	40	35.65
	RCEP	5	0.06	40	35.65
	RCEP	10	0.03	40	35.65
	RCEP	15	0.01	40	18.81
	RCEP	20	0.02	40	12.34
	RCEP	21	0.02	40	12.32

Source: Calculation by the authors.