

East Asia tariff concession: A CGE analysis

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Summary

While there are many studies focusing on the impacts of various trade policy agreements across the world in the recent years, there is not much focus in the literature on the extent to which these agreements are implemented later, in terms of the aspects agreed upon therein. In this paper, we identify the past achievements of the Economic Partnership Agreements (EPAs) in East Asian regions in terms of tariff removals and suggest future rooms for further economic benefits from trade liberalization in the region. Secondly, we provide the tariff concession dataset in the GTAP Data Base, which distinguishes the tariff removals agreed in these EPAs in East Asia but not implemented yet, from the existing overall tariffs in the benchmark year. The standard GTAP Data Base incorporates all tariff reductions that have been included in the agreements that are in force; however not all of them are implemented in reality. We have quantified the actual tariff removals in East Asian EPAs at HS6 levels. These will be aggregated to GTAP sectoral level, to arrive at a GTAP-consistent tariff dataset that contains actually implemented tariffs in East Asia. This is suggested to be taken as the actual baseline for policy simulations in the future.

Based on this dataset, we compare the economic impacts of partial versus complete implementation of the trade liberalization agreed in East Asian EPAs.

This is accomplished in two steps: firstly, we prepare simulations (using the Altax tool, documented in Malcolm (1998), GTAP Technical Paper No: 12) to switch from the GTAP tariffs to the levels implied by our new tariff dataset; secondly, we evaluate the impacts of reducing the tariffs from the modified levels to those included in the standard GTAP Data Base. The second step gives the difference between completely implementing all tariff reductions included in the agreements and partial implementation that has been done in reality.

1. Introduction

While there are many studies focusing on the impacts of various trade policy agreements across the world in the recent years, there is not much focus in the literature on the extent to which these agreements are implemented later, in terms of the aspects agreed upon therein.

We identify the past achievements of the Economic Partnership Agreements (EPAs) in East Asian regions in terms of tariff removals and suggest future rooms for further economic benefits from trade liberalization in the region.

2. Literature review and Descriptive evidence

2.1 Asian regionalism

East Asia has been a world growth centre for decades, and the unprecedented development of production networks particularly in the manufacturing sector has been progressing since the 1990s. Subsequently, East Asia has become one of the most active regions in constructing bilateral and plurilateral EPA networks, and this trend has accelerated especially since mid-2000s.

As presented in Chart 1, in 2000, there were only two EPAs *among* East Asian countries, namely Australia-New Zealand Closer Economic Relations Trade Agreement (ANZCERTA) and ASEAN Free Trade Area (AFTA), whereas there are thirty EPAs in this region in 2015 - at the time of writing. Looking from a different angle, 114 out of 120 possible combinations of bilaterals in East Asia are already covered by either bilateral or so-called ASEAN+1 EPAs. The remaining six combinations also have either bilateral or plurilateral EPAs under negotiation such as China-Japan-Korea FTA (CJK FTA), Trans-Pacific Partnership (TPP), and Regional Comprehensive Economic Partnership (RCEP).⁵

⁵ Australia-India, India-New Zealand, Japan-China, Japan-Korea, Japan-New Zealand, China-India.

On the other hand, as explained in the following section, this doesn't necessarily mean that these EPAs resulted in complete elimination of tariffs among the member countries. It is not unusual for a country to fail to achieve 100% level of tariff elimination in an EPA negotiation due to politico-economic reasons. No matter how many partners a country enters into EPAs with, if the ratio of liberalized items is limited, then the economic gains from EPAs are likely to fall short of expectations. Therefore, it should be emphasized that conclusion of FTAs alone does not automatically bring the economic benefits to member countries.

(Chart 1 Newly enacted EPAs among East Asian countries)

2.2 Impacts studies on East Asian integration

There have been several studies on the impacts of East Asian integration employing Computable General Equilibrium (CGE) model simulations, those include Kawasaki (2015), Itakura and Lee (2012), and Petri, Plummer and Zhai (2012). The estimated economic impacts from East Asian EPAs vary in these studies due to the differences in the data, the CGE model and the policy scenarios. Meanwhile, tariff reductions that have already been agreed upon in active East Asian EPAs but those have not implemented yet are not included in the baseline simulation in Kawasaki (2015).

2.3 Tariff concession

We provide the tariff concession dataset in the Global Trade Analysis Project (GTAP) database, which distinguishes the tariff removals agreed in these EPAs in East Asia but not implemented yet, from the existing overall tariffs in the benchmark year. The standard GTAP Data Base incorporates all tariff reductions that have been included in the agreements that are in force; however not all of them are implemented in reality. We have quantified the actual tariff removals in East Asian EPAs at HS6 levels. These will be aggregated to GTAP sectoral level, to arrive at a GTAP-consistent tariff dataset that contains actually implemented tariffs in East Asia. This is suggested to be taken as the actual baseline for policy simulations in the future.

By using a product-level preferential tariff dataset, we construct a new GTAP-compatible

dataset of tariff concessions under existing East Asian EPAs. The level of tariff concessions for each sector to which a country is willing to commit is measured by the conventional level of tariff-elimination index (i.e. the share of duty-free tariff lines for a sector after the transition period).

It should be noted that the original tariff data have some inconsistencies across the EPAs and countries for two reasons. First, some EPAs employ HS2002 version of tariff classification in the agreement texts, whereas others employ HS2007 version, depending on the timing of the negotiation. Second, as the most detailed tariff classifications (HS 8-10 digit) are not internationally standardized and are autonomously defined by each country, the total number of tariff lines at HS 8-10 digit level varies from one country to another.

In order to make our data comparable across countries and EPAs, we first compute the share of duty-free tariff lines at HS 6 digit level, and then convert all the HS2002 based tariff data into HS2007 based data, using a correspondence table provided by the World Integrated Trade Solution (WITS) website. Finally, the data are aggregated to the GTAP sectoral level in order to implement our simulations.

The data on preferential tariffs used in this paper are mainly taken from the ERIA (Economic Research Institute for the Association of ASEAN and East Asia) preferential tariff dataset (Kuno, 2011; Kuno et al, forthcoming), which covers 56 country-level tariff schedules under the five existing ASEAN+1 FTAs: the ASEAN-Australia-New Zealand FTA (AANZFTA), the ASEAN-China FTA (ACFTA), the ASEAN-India FTA (AIFTA), the ASEAN-Japan Comprehensive Economic Partnership (AJCEP) and the ASEAN-Korea FTA (AKFTA). This is supplemented with the data on tariff commitments under the ASEAN Trade in Goods Agreement (ATIGA), which are taken from the ASEAN Secretariat website, as well as the tariff data on some Japan's bilateral EPAs.

[East Asian EPAs have “substantially covered” various commodities for tariff reductions ranging from around 80 per cent in India to 100 per cent in Singapore, Australia and New Zealand.]

(Table 1 Tariff concessions in East Asian EPAs: number of commodities)

2.4 Tariff removals in the future

Using the MAcMap-HS6 database (Guimbard et al., 2012), we implement tariff removal at the HS6 level.

[Remaining trade weighted average tariff rates in 2011 vary widely among East Asian countries. Those are also different according to trade partners.]

(Table 2.1 Trade weighted average tariff rates in 2011)

[Trade weighted average tariff rates after implementing EPAs would not necessarily be closer to zero in numbers of countries in East Asia including China, India, Japan and Korea.]

(Table 2.2 Trade weighted average tariff rates after implementing EPAs)

[Tariff concessions in East Asian EPAs have not always been substantially high enough in terms of average tariff rates, those would be much more effective than number of commodities.]

(Table 2.3 Tariff concessions in East Asian EPAs: tariff rates)

[Tariff reductions in East Asia vary significantly in terms of the initial and final levels of tariff rates as well as the degrees of tariff cuts.]

(Chart 2 Comparison of initial and final tariff rates)

3. Scenarios and simulations

3.1 The framework of a CGE model

Based on this dataset, we compare the economic impacts of partial versus complete implementation of trade liberalization agreed in East Asian EPAs. To analyze the economy-wide impact of trade liberalization, a CGE model of global trade is employed

for the model simulations in this paper. Among others, the GTAP Data Base and standard model are utilized as a basis for the simulation experiments in this paper.

A common criticism has often been that a standard CGE model focuses on the evaluation of static efficiency improvements and therefore the dynamic effects among production, income, and savings and investment are not captured. In fact, concerning the dynamic impact of trade liberalization, the growth effects through productivity gains and capital accumulation have been pointed out. In this paper, certain dynamic aspects are studied in the model simulations.

One deals with the dynamic aspects of capital formation by modifying the standard version of the GTAP model. Two mechanisms are considered in this paper. First, the important “dynamic” effects of capital accumulation are introduced into the standard static model. The initial increase in income is assumed to increase savings (a fixed proportion of additional income is saved) and investment. The induced savings and investment (larger capital stock) in turn link to production capacities and cause a further increase in income. Second, the trade balance is endogenously determined and international capital movement is allowed. It is assumed that the expected rate of return on capital is equalized among regions.

In addition to these, pro-competitive productivity growth effects are also investigated in the model simulations. It is assumed that the productivity of domestic industries increases in order to compensate for the lower import prices. Such a rate of productivity increase is set as equal to the rates of change in import prices weighted by the proportion of imports over total production, including domestic goods.

3.2 Geographical and sectoral aggregation.

The GTAP Data Base provides well-arranged data on countries and regions in Asia-Pacific, such as Asian newly industrializing economies and ASEAN countries. One notable distinguishing feature of the model is its function to evaluate separately mutual dependence among the Asia-Pacific Economic Cooperation (APEC) economies. The current GTAP Data Base (version 9.0, documented in Narayanan et al, 2015) consists of 57 disaggregated sectors and 140 economies, which are aggregated into the appropriate version for the simulations. In this paper, as shown in Table 3, economies are aggregated into 27 regions, of which 20 regions are allocated to the APEC economies. The APEC

economies are disaggregated individually where data are available (note that data on Papua New Guinea is unavailable). Commodities are aggregated into 22 sectors in accordance with the medium classifications of standard national accounts, while several sensitive commodities in the primary and food sectors are further disaggregated to some extent.

(Table 3 Geographical and sectoral aggregations)

The latest GTAP Data Base was released in May 2015. However, its base year remains 2011. The benchmark data used in this study were updated to 2015 in order to reflect the recently growing number of states counted in the world economy. Those data were downloaded from the Data and Statistics section of the website of the International Monetary Fund.

3.3 Scenarios

We have simulated two scenarios of unilateral import tariff reductions of East Asian countries from trade partners in the region. One is a stylized one where import tariffs existed in 2011 would fully be removed. Another is to reduce import tariffs based on existing East Asian EPAs discussed above.

3.4 Results

According to conventional simulations carried out by using a CGE model of global trade, EPA measures including tariff reductions will stimulate trade by lowering the prices of tradable goods. This will result in increases in the national output of exporting countries while increasing access to the market for trading partners. Meanwhile, domestic production resources—land, capital, labor, and intermediate inputs—will be used more efficiently in importing countries, particularly when domestic distortions, including those due to trade barriers, are reduced. These combined effects—one from foreign markets and the other from the domestic market—are expected to result in the expansion of production and an increase in income and welfare. In addition, economic benefits would expand dynamically through capital formation mechanisms and productivity improvements. Although negative impacts due to trade diversion effects and terms of trade effects are suggested by theoretical studies, empirical analyses, including model

simulations, have generally indicated the macroeconomic benefits of EPAs.

Those economy wide impacts of tariff removals will largely be determined by the magnitude of tariff reductions. The more tariff would be reduced, the more imports would be boosted and domestic production may be replaced but the more real income and consumption could be stimulated by lower import costs on the other hand. The over-all impacts of unilateral tariff reductions would generally be expected to result in the improvements of economic welfare at the macro level.

Estimated income gains from full tariff removals by East Asian countries are shown in Table 4.1 by the source countries of imports. Those magnitude vary widely among ASEAN countries reflecting the differences in initial tariff rates discussed above and other six countries (Australia, China, India, Japan, Korea and New Zealand) would gain less than AESAN countries. In contrast, income gains from remaining tariff reductions according to East Asian EPAs (Table 4.2) would generally be limited except smaller East Asian countries as a result of major implementation of existing EPAs until 2011. The ratios of income gains by remaining tariff reductions according to existing East Asian EPAs relative to those by full tariff removals are shown in Table 4.3. It is indicated in Chart 4 that those are more or less proportional to the rates of tariff concessions in terms of trade weighted average tariff rates (Table 2.3) rather than those at tariff line levels (Table 1).

(Table 4.1 Changes in equivalent variations according to tariff removals)

(Table 4.2 Changes in equivalent variations according to EPAs tariff reductions)

(Table 4.3 Tariff concessions in East Asian EPAs: income gains)

(Chart 3 Tariff concessions: comparison of three measurements)

That said, the ratio of tariff concessions in terms of income gains as well as trade weighted average tariff rates would not be substantially high enough as those in terms of number of commodities at tariff line levels. As looked at in Chart 2, final tariff rates after implementing existing EPAs would not be so much lower than that in 2004 when East Asian EPAs have started to be in force.

Moreover, the differences in those tariff concessions are observed both at average ratios among East Asian countries and according to trade partners of individual East Asian

countries reflecting specific trade structure.

The income gains from tariff reductions according to RCEP are also compared among ASEAN and other six countries in Table 5. It is suggested that ASEAN countries have already committed major tariff reductions within ASEAN and in ASEAN+1 EPAs in the past. Income gains of ASEAN countries from existing East Asian EPAs are estimated to account for 10 to 70 per cent of full tariff removals. However, additional income gains from full tariff removals would still be sizable. On the other hand, other six countries would benefit much more from future RCEP. East Asian countries as a whole would remain benefit largely from future trade liberalization in the region. In order to estimate such impacts of future EPAs, accurate baselines for tariff rates will be essential.

(Table 5 Income gains from East Asian tariff reductions)

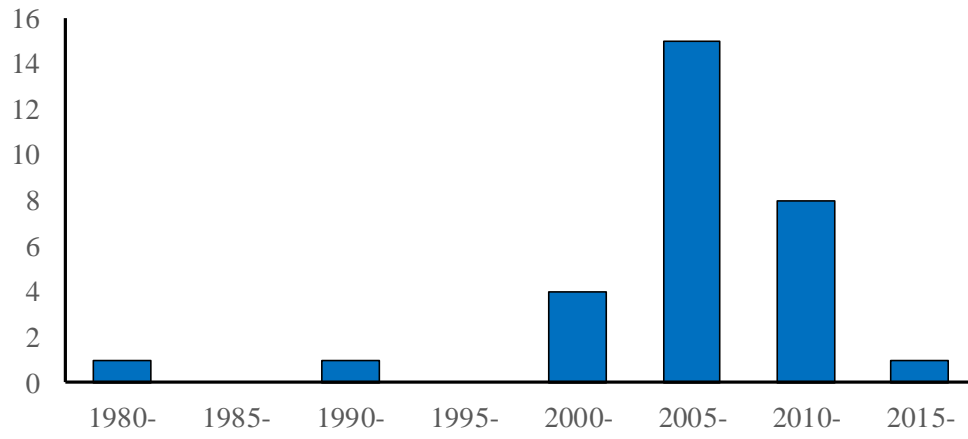
4. Conclusion

Tariff reductions in East Asia vary significantly in terms of the initial and final levels of tariff rates as well as the degrees of tariff cuts.

Tariff concessions in East Asian EPAs have not substantially been high enough in effect.

East Asian countries would remain benefit largely from future trade liberalization in the region.

Chart 1 Newly enacted EPAs among East Asian countries



Source: Authors' compilation from various WEB sites

Table 1 Tariff concessions in East Asian EPAs: number of commodities

	Average*	BRN	KHM	IDN	LAO	MYS	PHL	SGP	THA	VNM	AUS	CHN	IND	JPN	KOR	NZL	(%)
BRN	98.2	-	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.2	99.3	98.4	86.2	98.2	99.2	99.3	
KHM	94.6	98.5	-	98.5	98.5	98.5	98.5	98.5	98.5	98.5	90.8	90.2	88.5	85.3	91.0	90.8	
IDN	93.5	98.8	98.8	-	98.8	98.8	98.8	98.8	98.8	98.8	94.7	92.5	52.1	92.2	92.1	94.7	
LAO	84.3	80.0	80.0	80.0	-	80.0	80.0	80.0	80.0	80.0	93.1	97.7	80.3	86.8	90.1	93.1	
MYS	96.3	98.9	98.9	98.9	98.9	-	98.9	98.9	98.9	98.9	97.6	93.7	80.9	95.0	93.0	97.6	
PHL	89.9	99.1	99.1	99.1	99.1	99.1	0.0	99.1	99.1	99.1	96.1	92.8	82.2	97.7	90.0	96.1	
SGP	100.0	100.0	100.0	100.0	100.0	100.0	100.0	-	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
THA	97.2	99.8	99.8	99.8	99.8	99.8	99.8	99.8	-	99.8	98.9	93.8	78.6	96.6	95.3	98.9	
VNM	82.5	75.6	75.6	75.6	75.6	75.6	75.6	75.6	75.6	-	95.4	93.2	79.9	95.4	91.2	95.4	
AUS	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	-	n.a.	-	n.a.	n.a.	n.a.	
CHN	95.1	95.1	95.1	95.1	95.1	95.1	95.1	95.1	95.1	95.1	n.a.	-	-	-	n.a.	n.a.	
IND	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	78.9	-	-	-	n.a.	n.a.	-	
JPN	93.7	89.5	93.6	94.2	93.6	94.6	95.2	93.4	94.7	94.6	n.a.	-	n.a.	-	-	-	
KOR	92.2	92.2	92.2	92.2	92.2	92.2	92.2	92.2	92.2	92.2	n.a.	n.a.	n.a.	-	-	n.a.	
NZL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	n.a.	n.a.	-	-	n.a.	-	

* Averages of RCEP countries for ASEAN countries and those of ASEAN countries for non-ASEAN countries (same in the following tables).

Source: Authors' estimates

Table 2.1 Trade weighted average tariff rates in 2011

	Average	BRN	KHM	IDN	LAO	MYS	PHL	SGP	THA	VNM	AUS	CHN	IND	JPN	KOR	NZL
BRN	5.4	-	0.9	5.4	0.0	2.9	4.4	13.3	5.2	0.3	2.2	4.0	6.9	9.7	1.9	1.4
KHM	12.1	13.8	-	7.4	13.4	11.4	9.3	14.6	14.3	11.9	11.3	10.5	7.8	11.7	11.7	15.6
IDN	2.9	0.0	0.0	-	0.0	0.4	0.4	3.3	1.4	2.8	4.5	1.3	3.8	7.6	1.3	4.4
LAO	8.3	0.0	22.3	4.3	-	3.5	4.0	22.1	6.7	2.8	8.2	11.2	8.9	19.2	27.0	6.3
MYS	3.9	1.2	6.5	1.5	0.1	-	3.1	1.9	1.6	7.4	1.9	4.0	4.2	8.7	7.3	2.7
PHL	1.7	0.0	0.0	0.0	0.0	0.1	-	1.9	1.5	14.1	1.4	0.9	6.8	2.0	1.6	0.8
SGP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
THA	7.6	0.0	14.4	7.9	4.2	6.1	11.4	7.6	-	9.0	2.9	7.6	8.7	8.8	6.0	9.2
VNM	6.3	0.3	3.6	3.6	0.6	2.6	3.2	7.3	4.0	-	3.7	7.2	8.3	5.5	7.7	4.6
AUS	0.4	0.0	0.0	1.7	0.0	0.2	0.1	0.0	0.0	0.1	-	3.4	4.7	10.9	10.4	0.0
CHN	1.9	0.0	1.9	1.3	0.3	1.9	0.2	3.7	2.0	1.3	1.7	-	2.2	7.1	5.5	3.0
IND	19.9	0.0	42.4	34.0	0.1	20.7	6.7	5.9	8.3	12.8	4.9	7.2	-	8.3	7.6	9.8
JPN	1.4	0.0	0.2	0.3	0.5	0.5	1.5	0.1	4.6	0.8	2.7	3.0	0.9	-	1.7	10.1
KOR	3.6	2.4	6.1	1.7	3.3	2.0	4.7	2.5	8.4	9.2	4.4	6.4	13.2	4.9	-	18.6
NZL	0.8	0.0	0.0	1.8	0.0	1.1	1.2	0.0	1.3	2.6	0.0	3.9	2.6	4.4	3.0	-

Source: Authors' estimates

Table 2.2 Trade weighted average tariff rates after implementing EPAs

	Average	BRN	KHM	IDN	LAO	MYS	PHL	SGP	THA	VNM	AUS	CHN	IND	JPN	KOR	NZL
BRN	2.4	-	0.0	1.5	0.0	0.7	0.4	8.0	0.7	0.3	1.8	2.6	3.8	1.7	0.2	0.7
KHM	1.8	3.2	-	0.1	0.0	0.0	0.0	0.0	0.0	0.0	8.8	3.3	2.9	11.3	9.0	14.0
IDN	1.9	0.0	0.0	-	0.0	0.1	0.4	3.2	1.3	2.8	1.1	1.0	3.6	4.0	0.6	0.1
LAO	6.3	0.0	22.2	3.7	-	2.9	3.9	19.8	5.8	2.0	4.0	1.6	5.4	16.5	26.8	0.3
MYS	1.5	0.1	6.4	1.0	0.0	-	2.8	0.2	1.1	6.4	0.9	1.4	4.1	2.2	4.8	0.8
PHL	1.3	0.0	0.0	0.0	0.0	0.1	-	1.3	1.5	14.1	0.2	0.9	3.9	1.2	0.9	0.1
SGP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
THA	6.8	0.0	1.8	7.0	1.8	5.4	10.2	7.4	-	6.9	1.2	6.2	8.7	8.6	5.7	7.3
VNM	5.4	0.2	3.6	3.3	0.6	2.1	3.1	6.9	4.0	-	3.3	6.1	7.6	4.0	6.4	4.3
AUS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	n.a.	-	n.a.	n.a.	n.a.
CHN	1.6	0.0	1.9	1.3	0.3	1.8	0.1	2.6	1.8	0.5	n.a.	-	-	-	n.a.	n.a.
IND	19.2	0.0	42.4	32.9	0.1	20.1	5.3	5.5	7.9	11.9	-	-	-	n.a.	n.a.	-
JPN	1.3	0.0	0.1	0.3	0.5	0.5	0.8	0.1	4.5	0.6	n.a.	-	n.a.	-	-	-
KOR	2.3	0.3	4.4	0.8	2.8	0.7	3.8	0.2	7.8	7.2	n.a.	n.a.	n.a.	-	-	n.a.
NZL	0.7	0.0	0.0	1.6	0.0	1.1	1.1	0.0	1.2	2.2	n.a.	n.a.	-	-	n.a.	-

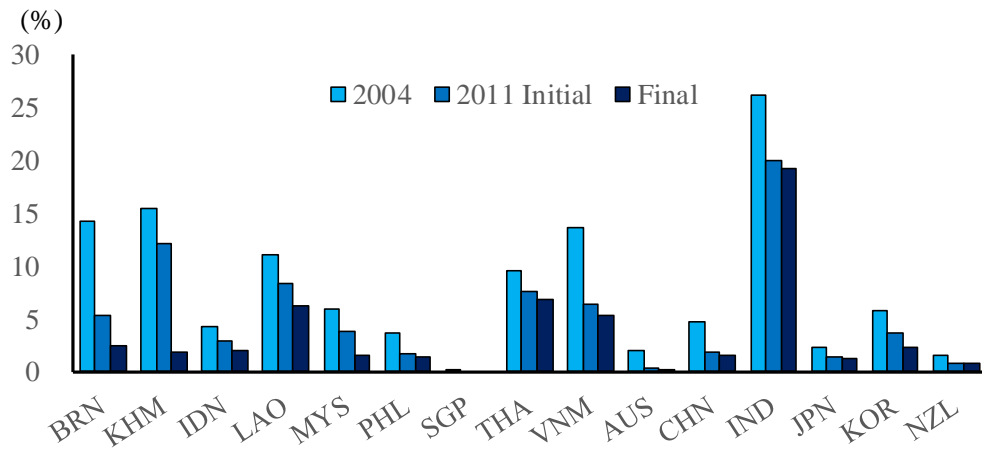
Source: Authors' estimates

Table 2.3 Tariff concessions in East Asian EPAs: tariff rates

	Average	BRN	KHM	IDN	LAO	MYS	PHL	SGP	THA	VNM	AUS	CHN	IND	JPN	KOR	NZL
BRN	55.7	-	95.8	71.6	0.0	77.2	90.8	39.5	86.4	15.9	17.9	33.2	45.7	82.5	89.1	50.0
KHM	84.9	76.6	-	98.8	99.9	99.8	99.5	100.0	99.9	100.0	21.7	68.7	62.5	3.3	22.7	10.3
IDN	32.2	-	96.1	-	-	66.5	0.0	2.1	4.5	0.0	76.5	25.1	5.7	47.5	56.6	97.6
LAO	24.9	-	0.6	14.0	-	16.9	2.7	10.5	12.1	29.2	51.3	86.0	39.5	14.3	0.6	95.8
MYS	60.6	90.8	0.6	31.0	100.0	-	7.5	87.4	33.9	13.4	53.7	65.8	3.3	74.4	33.6	70.7
PHL	23.1	-	-	2.7	-	0.0	-	30.6	0.0	0.0	82.0	0.0	42.8	41.8	43.0	92.9
SGP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
THA	9.8	7.0	87.2	10.8	58.1	11.7	10.9	1.7	-	22.8	59.8	19.1	0.1	1.6	4.1	20.4
VNM	14.6	24.3	0.2	8.3	0.1	17.8	4.2	5.6	1.7	-	9.7	15.1	9.0	26.6	16.8	7.0
AUS	100.0	0.0	-	100.0	-	100.0	100.0	-	100.0	100.0	-	n.a.	-	n.a.	n.a.	n.a.
CHN	18.1	0.0	0.7	4.4	0.6	6.3	47.1	31.1	12.2	59.3	n.a.	-	-	-	n.a.	n.a.
IND	3.6	0.0	0.0	3.2	0.0	2.7	21.4	7.8	4.8	6.7	-	-	-	n.a.	n.a.	-
JPN	6.6	0.0	68.6	9.8	0.0	0.7	45.9	2.1	0.8	27.7	n.a.	-	n.a.	-	-	-
KOR	36.8	88.2	28.3	55.1	14.6	64.4	20.3	93.6	7.5	21.4	n.a.	n.a.	n.a.	-	-	n.a.
NZL	7.9	16.6	0.0	10.6	-	2.3	10.7	-	7.0	16.5	n.a.	n.a.	-	-	n.a.	-

Source: Authors' estimates

Chart 2 Comparison of initial and final tariff rates



Source: Authors' estimates based on GTAP Data Base version 9.0

Table 3 Geographical and sectoral aggregations

Countries and Regions		Commodities	
JPN	Japan	RIC	Rice
CHN	China	GRA	Grains
KOR	Korea	MET	Bovine cattle, sheep and goat products
HKG	Hong Kong, China	MIL	Dairy products
TWN	Chinese Taipei	SGR	Sugar
BRU	Brunei	B_T	Beverages and tobacco products
IDN	Indonesia	OAF	Other primary
MYS	Malaysia	OPF	Other processed foods
PHL	Philippines	MNG	Mining
SGP	Singapore	TXL	Textiles and wearing apparel
THA	Thailand	CHM	Chemical products
VNM	Viet Nam	MTL	Metals
KHM	Cambodia	MVH	Motor vehicles and parts
LAO	Laos	OTN	Other transport equipment
IND	India	ELE	Electronic equipment
AUS	Australia	OME	Other machinery and equipment
NZL	New Zealand	OMF	Other manufacturing
USA	US	CNS	Construction
CAN	Canada	EGW	Electricity, gas and water
MEX	Mexico	T_T	Transportation
CHL	Chile	OSP	Other private services
PER	Peru	OSG	Public services
RUS	Russia		
EUM	EU		
OAO	Other Asia		
OAM	Other America		
ROW	Rest of the world		

Source: Authors' compilation based on GTAP Data Base version 9.0

Table 4.1 Changes in equivalent variations according to tariff removals

	(% of GDP)															
	Average	BRN	KHM	IDN	LAO	MYS	PHL	SGP	THA	VNM	AUS	CHN	IND	JPN	KOR	NZL
BRN	3.77	-	0.00	0.06	0.00	0.19	0.00	1.93	0.23	0.00	0.01	0.54	0.12	0.32	0.36	0.00
KHM	8.65	0.00	-	0.01	0.00	0.21	0.00	0.21	1.86	1.45	0.01	4.10	0.09	0.11	0.60	0.01
IDN	0.52	0.00	0.00	-	0.00	0.00	0.00	0.16	0.01	0.01	0.02	0.06	0.04	0.19	0.03	0.00
LAO	1.43	0.00	0.00	0.00	-	0.00	0.00	0.01	0.52	0.05	0.01	0.85	0.01	-0.02	0.00	0.00
MYS	2.39	0.00	0.00	0.00	0.00	-	0.13	0.19	0.05	0.04	0.01	0.70	0.05	0.77	0.43	0.01
PHL	8.63	0.00	0.00	0.00	0.00	0.00	-	0.96	0.05	0.37	0.34	2.03	0.86	1.97	2.05	0.00
SGP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
THA	5.58	0.00	0.02	0.33	0.02	0.46	0.24	0.49	-	0.23	0.06	1.84	0.19	1.38	0.29	0.01
VNM	3.66	0.00	0.01	0.02	0.00	0.02	0.00	0.14	0.00	-	0.02	2.35	0.17	0.16	0.77	0.00
AUS	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	n.a.	-	n.a.	n.a.	n.a.
CHN	0.03	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.01	0.00	n.a.	-	-	-	n.a.	n.a.
IND	0.87	0.00	0.00	0.53	0.00	0.22	0.00	0.04	0.03	0.05	-	-	-	n.a.	n.a.	-
JPN	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	n.a.	-	n.a.	-	-	-
KOR	0.63	0.00	0.00	0.13	0.00	0.01	-0.01	0.04	0.16	0.31	n.a.	n.a.	n.a.	-	-	n.a.
NZL	0.05	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.02	0.01	n.a.	n.a.	-	-	n.a.	-

Source: Authors' simulations

Table 4.2 Changes in equivalent variations according to EPAs tariff reductions

	(% of GDP)															
	Average	BRN	KHM	IDN	LAO	MYS	PHL	SGP	THA	VNM	AUS	CHN	IND	JPN	KOR	NZL
BRN	1.39	-	0.00	0.04	0.00	0.10	0.00	0.28	0.20	0.00	0.00	0.13	0.05	0.26	0.32	0.00
KHM	6.81	0.00	-	0.01	0.00	0.21	0.00	0.21	1.86	1.45	0.00	2.81	0.06	0.00	0.19	0.00
IDN	0.14	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.00	0.08	0.02	0.00
LAO	1.05	0.00	0.00	0.00	-	0.00	0.00	0.00	0.17	0.03	0.01	0.82	0.01	0.02	0.01	0.00
MYS	1.32	0.00	0.00	0.01	0.00	-	0.00	0.15	0.02	0.01	0.01	0.48	0.00	0.56	0.09	0.00
PHL	0.23	0.00	0.00	0.00	0.00	0.00	-	0.01	0.00	0.00	0.03	0.00	0.02	0.07	0.09	0.00
SGP	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
THA	0.47	0.00	0.02	0.03	0.00	0.04	0.01	0.00	-	0.03	0.05	0.26	0.00	0.01	0.01	0.01
VNM	0.38	0.00	0.00	0.00	0.00	0.01	0.00	0.02	0.00	-	0.00	0.23	0.03	0.04	0.06	0.00
AUS	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-	n.a.	-	n.a.	n.a.	n.a.
CHN	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n.a.	-	-	-	n.a.	n.a.
IND	0.03	0.00	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	-	-	-	n.a.	n.a.	-
JPN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n.a.	-	n.a.	-	-	-
KOR	0.07	0.00	0.00	0.00	0.00	0.01	0.00	0.03	0.00	0.01	n.a.	n.a.	n.a.	-	-	n.a.
NZL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	n.a.	n.a.	-	-	n.a.	-

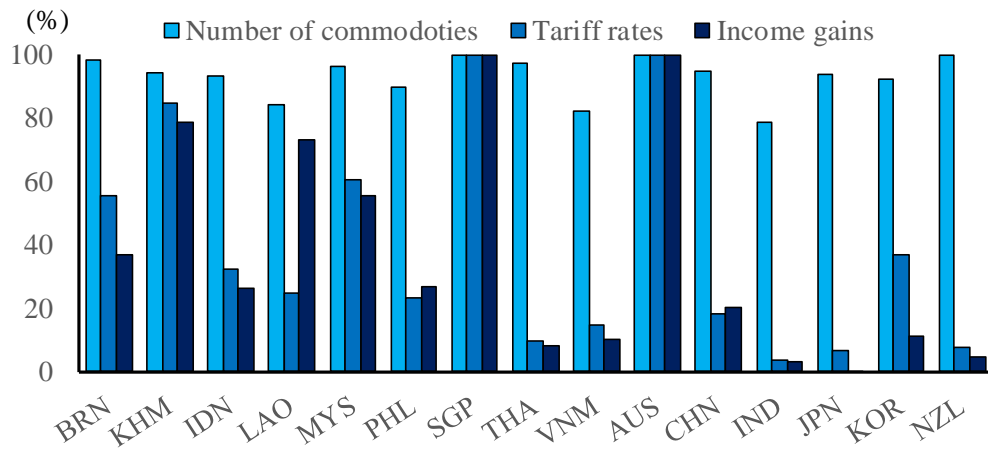
Source: Authors' simulations

Table 4.3 Tariff concessions in East Asian EPAs: income gains

	(%)															
	Average	BRN	KHM	IDN	LAO	MYS	PHL	SGP	THA	VNM	AUS	CHN	IND	JPN	KOR	NZL
BRN	36.9	-	62.6	69.5	0.0	50.3	51.9	14.6	89.3	5.0	12.4	24.7	39.5	80.3	89.0	22.7
KHM	78.7	96.3	-	100.8	100.0	100.1	100.1	100.0	99.9	100.0	43.8	68.6	64.6	2.7	31.1	1.2
IDN	26.2	-	96.9	-	-	70.2	0.0	1.5	0.4	0.0	85.2	17.9	4.4	44.4	52.3	n.s.
LAO	73.4	-	2.4	n.s.	-	23.6	1.3	9.2	32.0	55.1	59.3	96.7	86.1	n.s.	n.s.	94.2
MYS	55.5	99.1	5.1	n.s.	100.0	-	0.5	79.8	31.4	18.8	74.2	68.0	5.6	72.8	20.1	69.7
PHL	26.8	-	-	2.5	-	0.0	-	15.3	0.0	0.0	97.2	0.0	23.3	36.0	44.9	n.s.
SGP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
THA	8.3	14.0	82.8	8.5	17.5	9.1	3.0	0.8	-	11.3	77.6	13.9	0.0	1.1	2.8	79.5
VNM	10.4	n.s.	n.s.	8.9	n.s.	32.8	32.1	16.4	n.s.	-	2.2	9.6	15.8	23.1	7.3	n.s.
AUS	100.0	0.0	100.0	-	-	100.0	100.0	-	100.0	100.0	-	n.a.	-	n.a.	n.a.	n.a.
CHN	20.5	0.0	0.2	n.s.	-3.0	5.9	n.s.	29.7	11.9	63.9	n.a.	-	-	-	n.a.	n.a.
IND	3.2	0.0	0.0	3.6	0.0	1.5	34.1	6.0	5.2	2.5	-	-	-	n.a.	n.a.	-
JPN	n.s.	0.0	68.6	n.s.	0.0	0.9	n.s.	n.s.	0.1	20.8	n.a.	-	n.a.	-	-	-
KOR	11.1	91.7	n.s.	3.4	2.9	87.3	n.s.	97.4	2.8	3.9	n.a.	n.a.	n.a.	-	-	n.a.
NZL	4.4	18.0	5.5	-	-	0.7	4.8	-	3.5	13.2	n.a.	n.a.	-	-	n.a.	-

Source: Authors' simulations

Chart 3 Tariff concessions: comparison of three measurements



Source: Authors' estimates and simulations

Table 5 Income gains from East Asian tariff reductions

			(% of GDP, %)	
	From 2011	Past EPAs	Additional	Past ratio
Brunei	5.3	2.2	3.1	41.5
Cambodia	11.0	8.1	3.0	73.6
Indonesia	2.2	0.4	1.8	16.8
Lao	4.2	1.3	2.9	31.1
Malaysia	3.8	1.6	2.2	41.4
Philippines	0.9	0.3	0.5	39.2
Singapore	2.9	0.8	2.0	29.6
Thailand	6.4	0.6	5.8	9.8
Viet Nam	6.1	1.3	4.8	21.1
Australia	1.6	0.1	1.5	5.2
China	0.6	0.0	0.6	3.6
India	1.6	0.0	1.6	-0.1
Japan	1.6	0.1	1.5	6.4
Korea	5.3	0.1	5.2	1.9
New Zealand	1.9	0.1	1.8	6.3

Source: Authors' simulations

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Annexes