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TRADE EFFECTS OF TEXTILE INDUSTRY IN THE CONTEXT OF THE COMPREHENSIVE AND PROGRESSIVE AGREEMENT FOR TRANS-PACIFIC PARTNERSHIP

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Abstract

Textiles are a sensitive sector in the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP). The CPTPP includes Vietnam, a major apparel producer that now mainly sources yarns and fabrics from China and other Asian nations, the agreement could shift global trading patterns for textiles. Canada and Mexico, both significant regional textile markets for the United States, and Japan, a major manufacturer of high-end textiles and industrial fabrics, are also TPP members. Thus, this paper aims to evaluate the trade and welfare effects of textile industry in the context of CPTPP by applying the multi-country partial equilibrium (PE) model (GSIM) designed by World Bank - World Integrated Trade Solution. The results from GSIM model show that textile trading is likely to increase significantly after CPTPP formation. CPTPP members' export is predicted to increase about US$ 1 billion. Among textile product groups, maximum gains are concentrated on finished textile products (HS chapter 61-63). The welfare for CPTPP's members are also predicted by the GSIM simulation. As would be expected, the elimination of import tariffs from CPTPP is shown to bring great benefits to textile producers and consumers in the region, however, it also harm all governments' revenues.

Keywords: CPTPP, Textile, GSIM, Trade Effects, Welfare

JEL Classifications: F1, F4, D5

1. Introduction

In November 2017, trade ministers from member countries of the Trans-Pacific Partnership (TPP) agreed on the way forward to implement the TPP agreement without the US, which is from now on called the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP). All tariffs on textile and apparel products (with yarns and fabrics made in the CPTPP) will be eliminated over time. Provisions of textile trade were a major interest during the CPTPP negotiations.

Textile and garment industry is the most interested in the CPTPP, as the 12 member states originally agreed to devote separate chapters to industries that are considered to play a very important role in economic growth in some markets. According to WTO (2015), the members of TPP imported about US$219 billion worth of textiles and apparel, which accounted for a share of about 50 percent of world imports. The CPTPP also sets out specific requirements

on rules of origin, i.e. businesses must use yarns and fabrics from the CPTPP sector to facilitate the establishment of supply chains and investments in the sector. Accordingly, exporters only need to prove the origin of the goods will be entitled to preferential tariffs.

Textiles are a sensitive sector in the CPTPP, because Vietnam, as a member of CPTPP and a major apparel producer, imports mainly yarns and fabrics from China and other Asian nations. Therefore, CPTPP will shift the world textile trading patterns. Other CPTPP members, Canada and Mexico, are significant regional textile markets for the United States. Japan is also a major manufacturer of high-end textiles and industrial fabrics (Sheng Lu, 2016).

Therefore, trade effects analysis of textile and apparel industry in the CPTPP is important in recommending policies to maximize the benefits from the CPTPP agreement, contributing to promote the textile and garment industry in its members in the coming time.

There are few studies available on the effects of the CPTPP because it has been initiated recently. Previous studies such as Khan *et al.* (2018); Gilbert *et al.* (2017); Xiong (2017), Petri and Plummer (2016) applied econometric modeling, such as the Computable General Equilibrium model to evaluate the CPTPP's effects on the economy as a whole, which does not focus on impacts on industrial level. It is generally argued that trade policy analysis is more robust when undertaken within a general equilibrium approach. However, partial analysis offers several advantages compared to general equilibrium models. One of the important advantages is that, partial equilibrium model provides details on commodities that are useful for both policy makers and specific sectors. Therefore, it is necessary to estimate the effects of CPTPP at industrial level.

The remainder of this paper is organized as follows: Section 2 provides theoretical framework of the GSIM model. An overview on the trade and tariff pattern of textiles in CPTPP is presented in Section 3. Section 4 analyzes the trade effects of CPTPP on textile industry such as export, import, and welfare effects. These effects are calculated at disaggregated level. Section 5 concludes the paper.

2. GSIM (Global Simulation Model) model and data

GSIM is a partial equilibrium (PE) model which can be applied for analysis of global trade changes at sectoral level (Francois and Hall, 2003). The model allow for the calculation of changes in world trade at the industry level and national level. Results allow the assessment of the net effects, including the combination of producer surplus, consumer surplus and tariff revenue changes.

According to Francois and Hall (2003), GSIM framework based on assumption of national product differentiation, by which, imports are imperfect substitutes for each other. The elasticity of substitution and demand is constant across products from different sources, so as the same as import supply elasticity. By definition, partial equilibrium models do not include many factors compared to general equilibrium model. This is a limitation of the PE model. However, the main advantage of the PE model is its minimal data requirement, computational requirements, and the estimated results are transparent and easy to explain and implement. Another advantage of PE model is that it allows an analysis at disaggregated level that is neither convenient nor possible in the CGE model. Finally, useful insights such as exporter/importer gains, changes in tariff revenue, can be drawn at the industry level, thus they are useful for policy makers (Plummer *et al.* 2011).

Previous studies applied GSIM in assessing the trade impact on specific sectors such as: Holzner (2008); Leudjou (2012); Xiang *et al.* (2017); Xiong, (2017). These studies estimate the changes in trade, producer and consumer surplus, and welfare effects of related countries in an FTA.

In this paper, the trade data used in GSIM model is from the UN-COMTRADE at the HS 6-digit level, from chapter 50 to 63 (textile sector) and tariff data drawn from the UNCTAD-TRAINS (Trade Analysis and Information System) database. All data are in 2015, the most recent year currently available. The scenario estimated is based on complete removal of bilateral tariffs.

3. Trade and tariff pattern of textiles in CPTPP
3.1. Trade pattern

Trade of textile products between 11 CPTPP partners are reported in Table 1. Vietnam, Malaysia, Mexico, and Japan are the major exporters of textile into CPTPP region, whereas Japan, Canada, Vietnam, and Singapore imported most of textiles from other CPTPP partners in 2015. For exporter pairs, Vietnam-Japan, Vietnam-Canada, Malaysia-Singapore, and Mexico-Canada have trade volume from US$380 million to nearly US$3.4 billion. These figures indicate the results of established FTA among countries (AFTA, NAFTA).

Table 1. Textile trade between CPTPP countries (Unit: US$ million)

Export	Import											Total Export
	AUS	BRN	CAN	CHL	JPN	MEX	MYS	NZL	PER	SGP	VNM	
AUS	-	0.3	3.9	0.7	36.0	3.0	125.3	78.3	0.3	21.8	159.4	**429.0**
BRN	0.1	-	0.1	0.0	-	0.0	0.1	0.0	0.0	0.1	0.0	**0.5**
CAN	12.0	0.0	-	8.5	41.9	149.0	0.8	2.6	2.3	3.9	1.5	**222.6**
CHL	0.1	-	1.9	-	1.3	3.2	-	0.4	15.6	0.0	0.9	**23.4**
JPN	28.0	0.4	51.4	6.1	-	42.4	185.6	6.4	2.4	115.2	811.2	**1,249.5**
MEX	23.9	0.8	380.2	32.0	35.7	-	3.9	4.4	22.2	6.7	8.4	**518.6**
MYS	40.4	20.0	41.9	9.7	254.7	22.1	-	11.5	2.5	437.8	117.7	**958.8**
NZL	140.0	0.1	7.7	1.5	13.2	4.6	3.7	-	-	1.4	3.2	**175.9**
PER	9.7	0.0	37.7	60.3	22.2	31.0	1.5	1.7	-	3.4	1.3	**169.6**
SGP	13.7	13.5	1.0	0.4	6.4	1.5	59.3	0.9	1.1	-	9.0	**107.4**
VNM	204.8	0.3	721.5	54.2	3,381.1	236.2	176.9	32.9	25.0	114.0	-	**4,947.5**
Total Import	**472.6**	**35.4**	**1,247.2**	**173.5**	**3,792.5**	**492.9**	**557.1**	**139.1**	**71.3**	**704.3**	**1,112.5**	**-**

Note: Countries' name are ISO3-digit code.

Source: Author's calculation from UN Comtrade data

For major export sub-sectors (HS chapters), Figure 1 shows the export shares of each chapter of textile industry among CPTPP members. The data shows that Vietnam is the largest exporter of Articles of apparel and clothing accessories (chapter 61-63), which accounted for over 70% of total exports of these chapters within CPTPP region. Japan is the largest exporter of 6 chapters out of the textile's 14 chapters. Most of these are the intermediate inputs for textile industry, such as: Other vegetable textile fibers (53); Man-made filaments (54); Man-made staple fibers (55); Wadding, felt and nonwovens; special yarns (58); Knitted or crocheted fabrics (60), etc. This figures are consistent with the profile of Japan and Vietnam's textile trade currently.

In terms of the largest importers by chapters, Figure 2 shows that Japan and Vietnam are the largest exporter of most of the textile chapters. Japan has the biggest shares of the total importing chapters 50, 51, 61-63 among CPTPP members, whereas Vietnam dominates the importing chapters 52-55, and 58-60, by which the export shares of chapters' exports range from nearly 30% to 64% in 2015.
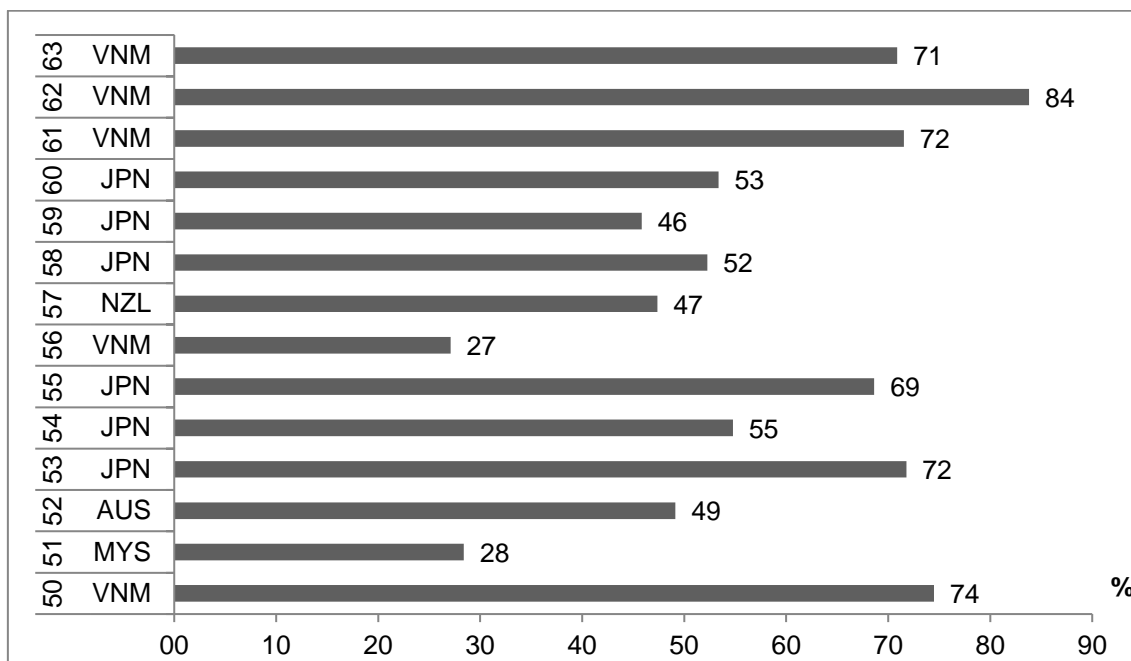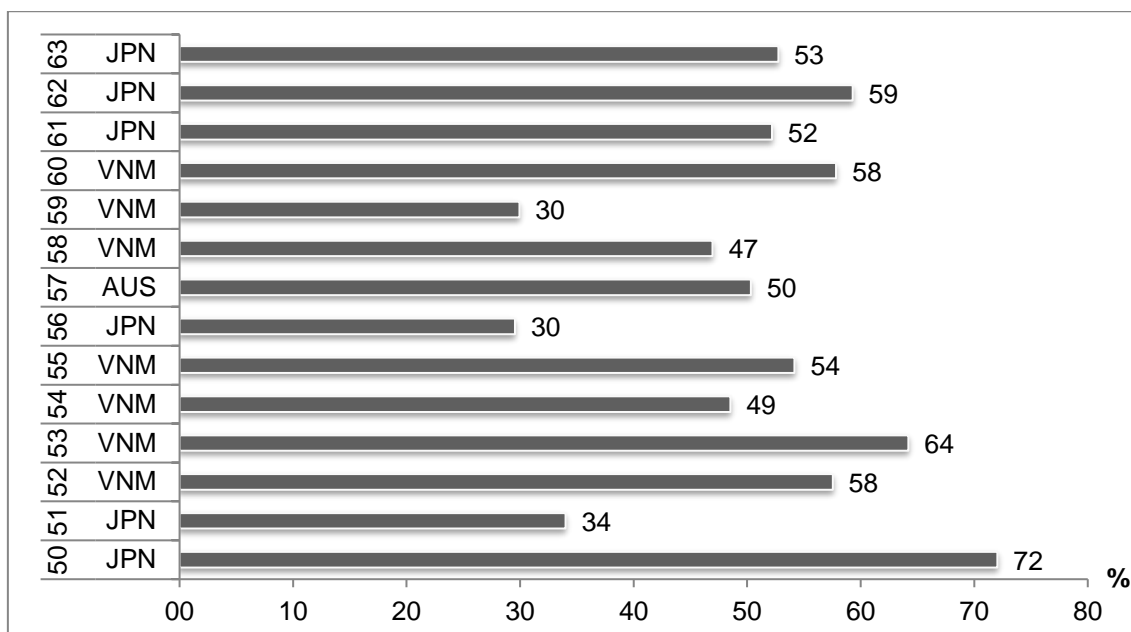
Figure 1. Top exporters by textile chapters

Figure 2. Top importers by textile chapters

3.2. Textile tariff

Table 2 presents the average effectively tariffs (AHS) of textile products between CPTPP countries. Tariff data shows that Vietnam and Malaysia's tariffs on textile products are remained relatively high, at an average of 7.5% and 12.5%, respectively. The rest of the CPTPP members have an AHS tariff rate of less than 5%, with the lowest being Singapore, followed by Brunei, and Japan. So, if tariffs on textiles and apparel in the CPTPP are removed, countries with higher tariffs will be more affected than other countries.

Table 2. Average effectively applied tariff of textiles between CPTPP members

	AUS	BRN	CAN	CHL	JPN	MEX	MYS	NZL	PER	SGP	VNM	AHS
AUS	-	2.5	3.8	0.0	3.7	0.0	4.8	0.0	3.5	0.0	1.0	1.9
BRN	0.0	-	0.4	0.0	0.0	0.0	1.7	0.0	1.7	0.0	0.0	0.4
CAN	4.2	13.7	-	0.0	4.6	5.3	0.0	4.2	0.0	6.9	4.2	4.3
CHL	6.0	6.0	6.0	-	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
JPN	1.9	0.0	5.8	0.0	-	0.0	0.0	5.6	0.0	0.0	0.0	1.5
MEX	7.5	5.3	7.4	0.0	6.6	-	5.4	8.2	0.0	7.0	6.8	5.4
MYS	11.8	20.0	11.4	11.9	11.3	10.8	-	10.9	12.3	12.5	12.3	12.5
NZL	3.3	8.8	3.7	4.2	3.3	3.3	4.1	-	4.8	3.5	3.3	4.2
PER	6.2	11.0	7.3	7.0	7.7	6.1	6.9	0.0	-	6.1	7.7	7.3
SGP	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	0.0	0.0
VNM	9.5	0.0	12.9	13.1	3.8	0.5	12.0	13.7	8.8	0.5	-	7.5

Note: Countries' name are ISO3-digit code. Highlight cells denote Effectively Applied Tariffs (AHS)> 10%
Source: Author's calculation from WTO-DB

4. CPTPP's effects on the textile trade
4.1. Trade effects

The change in the export value of CPTPP members after the elimination of tariffs on textiles is shown in Table 3. According to GSIM estimates, Vietnam is the most beneficiary country for export value (US$ 616 million), followed by Japan ($ 198 million), Canada ($ 81 million), and Malaysia ($ 48 million). In terms of imports, Canada is expected to be the largest importer with an increase in import value of about $ 585 million, followed by Mexico and Vietnam with an increase in imports of $ 357.6 million and $ 172 million, respectively. Meanwhile, imports of textiles from Japan's CPTPP are expected to fall by $ 170 million.

Table 3. Textile trade changes as result of tariff reduction (Unit: US$ million)

	AUS	BRN	CAN	CHL	JPN	MEX	MYS	NZL	PER	SGP	VNM	Total
Export	3.93	0.11	81.11	4.05	198.27	7.09	48.00	2.40	20.32	1.88	616.01	983.2
Import	11.9	(0.1)	585.4	0.2	(169.5)	357.6	(5.6)	12.5	25.4	(12.3)	172.0	977.5

Source: Author's own calculation from GSIM estimation

In terms of product groups in the textile and apparel industry, the CPTPP tariff elimination scenario would increase exports of most of the CPTPP members, with Japan, Canada and Peru, all having significant changes in exports, grouping internal product groups (Figure 3). For Canada, the magnitude of the change is centered on chapters 51 and 61, and chapters 54, 61, 62, and Peru are chapters 61-63. For the remaining countries such as Vietnam, Malaysia, Singapore, etc., the increased exports are also mainly focused on the final product group of the textile and apparel industry, namely Chapter 61-63. Thus, if CPTPP's textiles agreement is completed, trade in finished textile products will increase in most of the countries in the block.

The change in imports according to the estimates of the GSIM model is shown in Figure 4, which indicates that Canada, Mexico, Peru, and Vietnam will import more garment from CPTPP. Specifically, Canada will import about 20-60% of its final product range; Mexico imports from 20-100% for most product groups. Similarly, Vietnam's imports will also increase in all chapters with an increase of 10% to 30%. In contrast to these countries, Chile, Japan, Malaysia and Singapore will witness a decline in the import of textiles and clothing from the bloc and focus primarily on the final product of the industry (chapters 61-63).
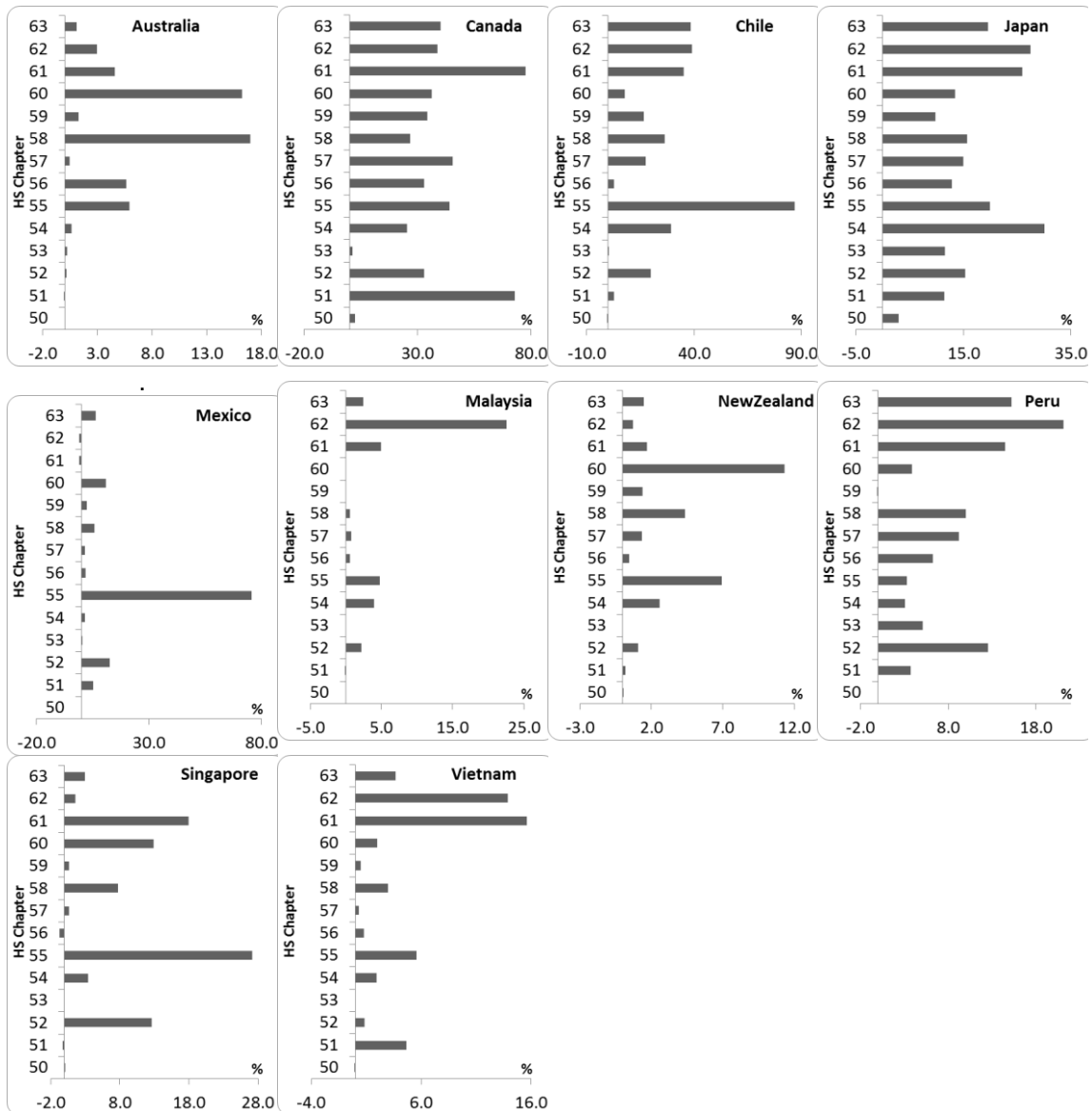
Figure 3. Textile export changes as result of tariff reduction (%)
Source: Author's own calculation from GSIM estimation

Unlike exports, the removal of tariffs on textiles and clothing in CPTPP is expected to bring different effects to CPTPP members, in particular to some countries that will significantly increase imports, while other countries will reduce imports. Significant changes in imports here are concentrated in the textile sector. From the results of the estimation of import and export changes, it can be seen that intra-industry trade will increase sharply, but mainly focus on final products rather than intermediary products or inputs for textile industry. This indicates that textile giants in the CPTPP still depend on the source of inputs from countries other than CPTPP. It is possible that the CPTPP agreement would create a trade-diversion effect, but low intra-regional inputs would also be a major obstacle and would lessen the positive effect of CPTPP on the members.
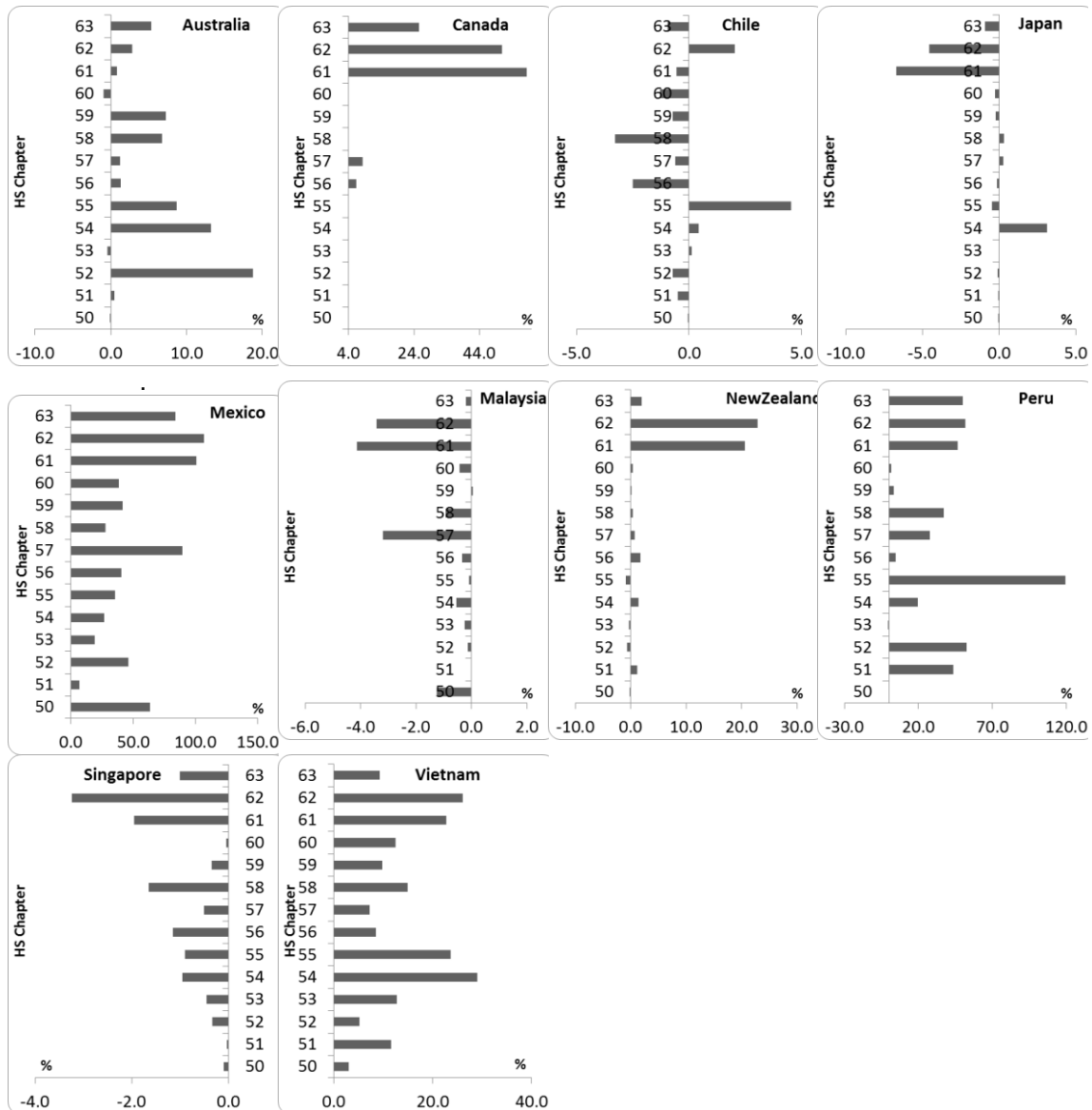
Figure 4. Textile import changes as result of tariff reduction (%)
Source: Author's own calculation from GSIM estimation

4.2. Welfare effects

The textile industry plays an important role in the socio-economic development in terms of prospering the economy, creating employment, expanding trade, and promoting urbanization. Therefore, it is necessary to estimate the welfare effects of all consumers, producers, as well as the government revenue. This is also an advantage of the GSIM model. It is a comprehensive analysis tool of the welfare effects of trade policy at the industry level. The welfare effects of CPTPP in textile industry are reported in Table 4, which are the changes in producer and consumer surplus, tariff revenue, and net welfare of CPTPP's members.

Table 4. Welfare effects of CPTPP in textile industry (%)

	Producer Surplus	Consumer Surplus	Tariff Revenue	Net Welfare Effect
AUS	0.6	4.2	-3.1	-2.7
BRN	0.0	0.0	0.0	0.0
CAN	1.7	58.0	-39.4	-33.4
CHL	0.4	0.3	-0.3	-0.2
JPN	16.0	-13.6	1.2	-2.9
MEX	1.0	33.3	-21.5	-17.7
MYS	5.9	-0.6	0.1	-0.1
NZL	0.3	1.6	-1.0	-0.8
PER	0.2	1.4	-1.3	-1.2
SGP	0.4	-2.3	0.0	-0.7
VNM	73.3	17.7	-34.8	-40.2

Note: % of total welfare of CPTPP's members.

Table 4 shows that the welfare of CPTPP members is declining (indicated by negative values), albeit to a varying degree (proportion of total members' welfare). Vietnam, Canada, and Mexico are the countries where welfare falls sharply if the textile and clothing trade agreement is effective, with corresponding values of 40.2%, 33.4%, and 17.7% of the total net welfare of 11 CPTPP members. This implies that these countries will import more textiles from the CPTPP and reduce revenues from import taxes.

The changes in welfare of each component shows that garment enterprises in Vietnam, Japan and Malaysia will benefit greatly from CPTPP with an increase in welfare, accounting for 73.3%, 16%, and 5.9% of the total benefit of the producer in the block. On consumption, Canadian, Mexican, and Vietnamese consumers benefit the most.

In general, although overall welfare is reduced, CPTPP is expected to benefit textile manufacturing by expanding its scale, improving product quality, and creating more jobs for the country. Consumers in CPTPP also benefit from having more options in the consumption of textiles.

5. Conclusion and recommendations

In partial equilibrium analysis, trade effects as result of CPTPP are predicted to be significant. Textile trading among CPTPP countries are likely to increase significantly after the agreement enter in force. The GSIM simulation predicts total textiles exports of all CPTPP's countries increase about US$ 983million. Among sub-sectors, maximum gains are concentrated on chapters 60-63, the finished textile products. In terms of value, Vietnam, Japan, Canada, and Malaysia are the most beneficiary country for export value, whereas, Canada is expected to be the largest importer, followed by Mexico, Vietnam, and Japan.

The tariff revenue loss for CPTPP's members are also predicted by the GSIM simulation. CPTPP implementation will harm all governments' revenues as a result of tariff elimination. Canada's revenue loss will be the largest, and the next Vietnam, Mexico, Australia, and Peru. Given this results, these countries must consider revenue loss and in order to tamper the losses in budget revenues.

The findings of this paper may serve as an input into the process of policy making for trade of textile sector. Overall, the effects of the CPTPP at industrial level imply the significant benefits to each member when the agreement is entered into force. There will also be pressure for the members to restructure the industry after the agreement is signed.

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