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## **Should Thailand Join the TPP?**

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### **Abstract**

This paper reviews the potential gains and losses for Thailand if the country joins the Trans-Pacific Partnership (TPP). Had the United States remained a member of TPP, the preferential market access to the country would be a major source of gains. However, the intellectual property right (IPRs) provisions in the TPP may have adverse impact on pharmaceutical expenditure in Thailand. While there are other issues covered in TPP, these are likely to be either non-binding constraints (e.g. investment agreement) or having effects that are difficult to be quantified across time and space (e.g. government procurement, environmental agreement). While there is belief that the TPP and cumulative ROO in particular could alter supply chain of production network, this is unlikely to occur due to a number of exceptions in the TPP itself.

*Key words:* Trans-Pacific Partnership, IPRs, Yarn-Forward, Production Network, Thailand

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# Should Thailand Join the TPP?

Archanun Kohpaiboon and Juthathip Jongwanich\*

## 1. Introduction

The Trans-Pacific Partnership (TPP) is a free trade agreement (FTA) that originally involved twelve Asia-Pacific countries.<sup>1</sup> After seven years, negotiations on the TPP were successfully concluded on 5 October 2015 by the twelve member economies which collectively accounted for more than 40 percent of the World's GDP. The TPP was officially signed on 4<sup>th</sup> February 2016. However, on the 23<sup>rd</sup> of January 2017, President Trump signed an executive order that withdrew the United States's (US) participation in the TPP. The fate of the TPP remains unclear though there are indications that remaining eleven TPP member countries may proceed to ratify the trade agreement in the future. Prior to the withdrawal of the US from the TPP, Thailand had on numerous occasions expressed interest in becoming a member of the Trans-Pacific Partnership (TPP).<sup>2</sup> The withdrawal of the US from the TPP has reduced Thailand's interest in the TPP.<sup>3</sup> Despite this, the TPP is likely to remain relevant as a negotiation template for other upcoming trade agreements. Thus, a discussion and analysis of the TPP's potential impact, even for a non-member country such as Thailand, is worth undertaking for both academics and policymakers.

The TPP has been widely regarded as the newly high quality of signed FTAs so far as the topics covered in it is comprehensive and far beyond market access, including investment liberalization, services liberalization, intellectual property rights (IPR), labor and environment standards, state-owned enterprises (SOEs) and government procurement. There are some features of TPP that must be taken into consideration in assessing its economic impact. There are 30 chapters in the

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<sup>1</sup> The countries involved are Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, United States and Vietnam.

<sup>2</sup> See "Thailand says 'highly likely' it will seek TPP membership", 27 November 2015; "Thailand seeks Japan's support in joining TPP: Somkid", The Nation, 1 June 2016; and "Thailand Must Join TPP: Junta Chief", The Diplomat, 31 March 2016.

<sup>3</sup> In an interview with the press, the deputy head of Thailand's Commerce Ministry's Trade Negotiations Department, Sunanta Kangvulkij, remarked that the TPP's collapse would ease the pressure on Thailand. See "Thailand braces for Trump dumping TPP", The Nation, 24 November 2016.

TPP official texts and exceptions appear in nearly every chapter of the TPP (Menon, 2016).<sup>4</sup> In addition, there are a series of “side letters” which provide a mechanism by which a series of bilateral deals can be presented to appear as if they are part of one comprehensive agreement. For example, the US has released a total of 61 such letters and these can be quite potent. The flexibility that this mechanism provides goes much further, however. There were talks of using new side letters to address concerns raised by the pharmaceutical lobby in the US, for instance, without having to renegotiate the text (Menon, 2017). Hence, these side letters have the status of *de facto* bilateral arrangements between members that could overshadow the general rules.

It is these exceptions that play a crucial role in materializing potential benefits. These exceptions also cast doubts on the accuracy of quantitative estimates of economic benefits from the TPP, some of which were estimated using simulation experiments using the general equilibrium model (i.e. GTAP). As mentioned earlier, unlike most trade agreements, the coverage of the TPP goes beyond trade in goods. Interestingly, many of the items covered in the TPP could be non-binding constraints. This would reduce the accuracy of estimates using general equilibrium modelling. The more complicated the TPP agreement, the less accurate would be the simulation models’ results. In addition, it is very difficult to estimate the long-term (dynamic) effects of the TPP on the economies concerned. Such difficulties aside, it is still a useful exercise to assess the potential impact of TPP in order to better understand the challenges facing countries that are affected by the agreement or countries that might be interested to negotiate. All in all, this points to the need of in-depth country-specific analysis.

The paper is organized as follows; Section 2 provides an overview of FTAs in Thailand with emphasis on the country’s policy stance toward trade deals. In Section 3, the debate about TPP in Thailand is discussed to highlight the research focus of this paper. The analysis in Section 4 focuses on sectors which are potentially likely to benefit from preferential market access in TPP. Section 5 provides an assessment of the potential effect of TPP on pharmaceutical expenditure in Thailand. Section 6 provides conclusion and policy inference.

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<sup>4</sup> For example, Bollyky (2012) mentioned “the TPP may be the longest, most complex, and exception-filled trade agreement ever negotiated. There are exceptions to general principle (Art. 2.4.1), exceptions to exceptions (Art 2.4.7), explicit exclusions (Art. 9.11), implicit exclusions (Annex 15-A), grandfathering (Annex 18-B), optional undertakings (Art. 25.4.1), clarifications (Art. 13.2.3), caveats (Art. 11.1), limiting rules of application (Art. 11.2.2-5), and, of course, carve-outs (Annex 17-D; Art. 16.9; Art. 9.7.6).

## 2. FTAs in Thailand and Their Uses

Until 2001 Thailand benefited from unilateral tariff reductions and the success of multilateral agreements in the context of the General Agreement on Tariffs and Trade (GATT) and the World Trade Organization (WTO). The slowdown in WTO liberalization negotiations resulted in a switch of political attention and negotiating resources in Thailand towards preferential trade agreements and bilateral free trade accords in particular. This process accelerated as a result of a significant change in the political situation in Thailand (Sally, 2007). Between 2001 and 2006, Thaksin Shinawatra's Thai Rak Thai political party came to power with a strong mandate.

One of the government key initiatives was to sign as many FTAs as possible to secure preferential market access. There were 15 FTAs initiated during the Thaksin administration period (2001–2006). This was implemented without consultation with government officials in charge of trade policy. FTA commitments made during this period largely involved tariff liberalization and market access for goods. Many of the FTAs signed were hastily concluded, without neither careful consideration, nor public consultation. Indeed, some were signed off on with scant due diligence concerning any prospective advantages and disadvantages, together with inadequate consultation with interested parties outside of government.

Consequently, between 2006 and May 2011, FTA enthusiasm in Thailand stalled. Under the new constitution promulgated in 2007, execution of international trade agreements is subject to parliamentary approval (Article 190) to prevent rushed conclusion of agreements without careful study and public consultation. Article 190 ensures that all international trade agreements must be carefully scrutinized and subject to countrywide public hearings. Thus, more time is now needed to enact international trade agreements, compared with the Thaksin period. This constitutional amendment had a significant impact on FTAs and the government became much less active in initiating bilateral FTAs. Indeed, not a single bilateral FTA was ratified between 2006 and May 2011. During this period, new FTA negotiations were only instigated within the Association of Southeast Asian Nations (ASEAN) 'plus' format.<sup>5</sup>

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<sup>5</sup> A possible exception would be the Thailand–European Union (EU) FTA, which replaced the ASEAN–EU FTA as a consequence of unsolved issues about Myanmar during the negotiations. Since May 2014 The Thailand–EU FTA has been stalled as the EU expressed a reluctance to have further negotiation with the ruling junta.

From May 2011, Prime Minister Yingluck Shinawatra, the younger sister of former Prime Minister Thaksin Shinawatra, started to pay attention to FTA negotiations again. Negotiations concerning several prospective FTAs, such as those of Thailand–EFTA, Thailand–Chile FTA, and Thailand–Peru FTA, which had stalled between 2006 and May 2011, were resumed and progress towards completion recommenced. Moreover, the subsequent administration also launched several new FTA talks, including negotiations with Canada in March 2012 and the expression of interest in becoming a member of the Trans-Pacific Partnership (TPP) made during the United States President Obama’s visit to Thailand in November 2012.

On May 2014, the Royal Thai Armed Forces led by General Prayut Chan-o-cha, launched a coup d’etat, the 12<sup>th</sup> since the country’s first coup in 1932 against the caretaker government of Thailand. This has stalled all FTA talks involving developed country FTA partners including those with the US and European countries.

Table 1 presents details of all the FTAs in which Thailand has been involved since the 1990s including ongoing negotiations. These amount to a total of 18 FTAs, of which 12 have come into force (Table 1). Of these, only eight of the FTAs involve substantial tariff cuts, covering more than 80 per cent of tariff lines and having been offered since 2010. These include the ASEAN Free Trade Area (AFTA), ASEAN-China FTA (ACFTA), the Thailand–Australia FTA (TAFTA), the Thailand–New Zealand FTA (TNFTA), the Japan–Thailand Economic Partnership Agreement (JTEPA), the ASEAN–Japan FTA (AJFTA), the ASEAN–Korea FTA (AKFTA), and the ASEAN–Australia–New Zealand FTA (AANZFTA).

With respect to another three FTAs (i.e. the Thailand–Peru FTA, the Thailand–Chile FTA, ASEAN–India FTA), substantial tariff cuts took place just in recent years, i.e. 2015 and 2016. FTA negotiations between Thailand and India have continued over a prolonged period with bleak prospects. Out of six ongoing FTA talks which had yet to reach any satisfactory conclusion, four stalled due to the 2014 coup. Henceforth, our discussion emphasizes the eight FTAs referred to above.

**Table 1: Thailand's FTAs From 1990**

<b>FTA</b>	<b>Signed</b>	<b>Effective</b>	<b>Remarks</b>
1. ASEAN	1990	2006	Tariff reduction completed in 2010 for original ASEAN members; 2015 for new members
2. ASEAN-China	2003	2003	Early harvest program was launched to eliminate tariff on fruits and vegetables (HS 07 and 08) in October 2003.  China's tariff reduction – 60% in 2009; and 90% in 2010  Thailand's tariff reduction – 33.3% in 2009; more than 90% in 2010
3. India	Oct-03	n.a.	Early Harvest Program was launched to gradually liberalize 82 product items in September 2004. The rest is under negotiation.
4. Australia	Jul-04	Jan-05	Australia's tariff reduction – 83% (2005), 96.1% (2010), and 100% (2015)  Thailand's tariff reduction – 49.5% (2005), 93.3 % (2010), and 100% (2025)
5. New Zealand	Apr-05	Jul-05	New Zealand's tariff reduction – 79.1 (2005), 88.5% (2010), and 100% (2015)  Thailand's tariff reduction – 54.1% (2005), 89.7% (2010), and 100% (2025)
6. Peru	Nov-05	Dec-11	Tariff reduction between Thailand and Peru – 50% (2011) and 70% (2015).  The full text has not been concluded by May 2016.
7. Chile	2006	Nov-15	Tariff of 90 per cent of product lines was cut to zero by November 2015.

(cont.)

**Table 1 (cont.)**

<b>FTA</b>	<b>Signed</b>	<b>Effective</b>	<b>Remarks</b>
8. Japan	Apr-07	Nov-07	Japan's tariff reduction – 86.1% (2007) and 91.2 % (2017) Thailand's tariff reduction – 31.1% (2007) and 97.6% (2017) Currently, there is a talk for further liberalization known as JTEPA Phase 2.
9. ASEAN–Japan	Apr-08	Jun-08	Japan's tariff reduction – 85.51 % in December 2008; and 90.16% in April 2018 Thailand's tariff reduction: 30.94% in June 2009, and 86.17% in Apr 2018
10. ASEAN–Korea	Feb-09	Jan-10	Korea's tariff reduction – 90% (2010) Thailand's tariff reduction – 81% (2010), 83% (2012), 86% (2016), and 90% (2017)
11. ASEAN–Australia– New Zealand FTA	Feb-09	Jan-10	Australia's tariff reduction – 96.34 % in 2010; 96.85% in 2016 and 100% in 2020 New Zealand's tariff reduction – 82.47 % in 2010; 88.01% in 2016 and 100% in 2020 Thailand's tariff reduction – 73.05% in 2010; 91.11% in 2016 and 98.89% in 2020
12. ASEAN–India	Aug-09	2010	Tariff reduction began in 2010 with target; 80 per cent of tariff reduction by 2016 for Thailand, Malaysia, Indonesia, Singapore, Brunei Darussalam, and India; by 2021 for new ASEAN members.

(cont.)

**Table 1** (cont.)

<b>FTA</b>	<b>Signed</b>	<b>Effective</b>	<b>Remarks</b>
13. Regional Comprehensive Economic Partnership (RCEP)	Under negotiation		Initiated by August 2006, known as ASEAN+6; changed to RCEP in 2011; Plan to cut tariff to zero immediately on at least 65% of product lines.
14. Thailand–EU	Under negotiation/Stalled		Initiated by November 2007 under ASEAN–EU; shift to bilateral agreement with individual ASEAN members in 2009; So far there were four meeting from May 2013 to April 2014 but talk has been stalled due to the 2014 coup
15. Thailand–Canada	Under negotiation		Initiated by March 2012 but stalled due to the 2014 coup.
16. Thailand–EFTA (European Free Trade Association)	Under negotiation/Stalled		Initiated by October 2005 but stalled due to the 2014 coup.
17. Trans-Pacific Partnership (TPP)	Uncertain		The Thai Prime Minister expressed interest in TPP during the US President’s visit to Thailand in November 2012.
18. Thailand-Turkey FTA	Just Launched		Launched the negotiation in July 2016

BIMSTEC = Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (which groups together Bangladesh, Bhutan, Burma, India, Nepal, Sri Lanka ,and Thailand); ASEAN = Association of Southeast Asian Nations; FTA = free trade agreement.

Source: Author’s compilation from official data source. Available at <http://www.dtn.go.th/index.php/forum.html>



The FTAs in Table 1 mainly focus on goods market liberalization. The commitments that Thailand made on other issues under these FTAs, except in the case of the AEC, were rather weak and at most in line with WTO commitments (Kohpaiboon and Jongwanich, 2014; Kohpaiboon et al. 2015).

### **3. Debate of TPP in Thailand**

The possibility of Thailand joining the TPP was a controversial topic in Thailand. There were proponents and opponents to the idea of Thailand becoming a member of TPP. The proponents of TPP argued that TPP membership would promote export as the TPP members accounted for nearly half of world trade and GDP. This is especially true for the US - though it is a major trading partner of Thailand, both countries have not signed a FTA. For example, Nikomborirak (2015) has expressed the fear of Thailand not being a member of TPP given the share of Thai export covered FTA partners. In particular, export destinations in which Thailand has at least one FTA with accounted for 60 per cent of total Thai exports. Such a share could increase to 80 per cent if Thailand becomes a TPP member. Nonetheless, such a share could be misleading as not all exports apply for FTA preferential schemes. As argued in Kohpaiboon and Jongwanich (2017), about 25 per cent of Thailand's total exports to FTA partners applied for existing FTA preferential schemes.

It is even worse when the US market is concerned as most of the imported products are subject to zero tariff. Table 2 presents a summary of tariff in the US in 2010. The average tariff is 3.2 per cent, most of which are subject to zero tariff. Hence, incentives to use FTA preferential schemes would be limited. There are exceptions where tariff rates remain substantially high. Among these, it is worth having further discussions on three product categories, i.e. processed foods (HS03 and16), garment (HS 61-62) and CBU vehicles (HS 8703-4). These are products Thailand that rely heavily on the US market. This is consistent with the views of TPP proponents from the garments and processed foods exporters. Note that the export from these three product categories accounted for less than one per cent of the total export of Thailand to the US in 2014. All in all, this suggests that claims that Thailand will forgo export opportunities by not being part of TPP is not likely to be an academically sound argument.

Another potential economic benefit from Thailand joining the TPP is the promotion of direct investment in Thailand. There are three different possible sources for this. Firstly, it could come from the enlarged export market with preferential market access. To a certain extent, this is in line with the FDI tariff hopping argument, i.e. setting up affiliates to supply goods behind tariff wall. Secondly, it is derived from the impact of the TPP on global and regional production networks that they are currently a part of. Of particular concern is the impact of cumulative rules of origin that will encourage deeper trade links between member countries and put non-member countries at a disadvantage. As a consequence, multinationals might move their affiliates from non-member to member countries so that this would affect investment. Thirdly, TPP talks also cover other topics such as investment liberalization, regulation coherence, state-owned enterprises, and government procurement, all of which can potentially create more favorable investment climate in member countries.

Among the three different sources discussed above, the last one is especially relevant. The other two are unlikely to have substantial effects in promoting investment in reality. As argued above, firms are not very responsive to FTA preferential schemes (Kohpaiboon and Jongwanich, 2016 and 2017; Economist, 2014) due to many reasons such as low tariff margin, costs incurred in applying the schemes, restrictive rules of origin. More importantly, while the general perception of TPP is in terms of tariff cuts that would have instantaneously effects, in reality there are various exceptions expressed in side letters. For example, as illustrated by Doonan (2015), the current 2.5 per cent tariff on imported Japanese cars to the US will take 15 years to go down to 2.25 per cent and a further 10 years to go down to zero. Similarly, the 25 per cent tariff on imported Japanese trucks will remain in place for 30 years after the agreement goes into force. Given such exceptions, it is unlikely for firms to relocate their investment solely based on the FTA preferential schemes.

The second source is expected to be the relatively less important due to reasons similar to those discussed for the first source. In addition, trade within the network is tailor-made instead of arm's length transaction. It is unlikely to establish complete contracts governing activities in the network (incomplete contracts) (Antras, 2016). Only qualified suppliers are included in the network. Hence, all other things being constant, it is unlikely for firms participating in the network to re-locate their supply chain simply because of a FTA to be signed.

As mentioned above, the key source of investment promotion is the effect of TPP on non-market access topics which improves investment climate. In particular, TPP has the potential of pushing substantial regulatory reforms in Thailand. However, regulatory reforms could be undertaken unilaterally for better benefit to Thailand as opposed to being introduced under TPP participation. Interestingly, there are skeptical concerns about details of non-market access topics discussed in TPP (Menon, 2016). For example, while the TPP's investment chapter provides the same basic investment protections found in other investment-related agreements. A major concern during negotiations was about the balance between the need to protect investors' rights and government's public welfare objectives especially consumer and environmental protection (Bernasconi-Osterwalder, 2015a; DePillis, 2013). In particular, as criticized in Bernasconi-Osterwalder (2015a), the chapter only contains a weak provision on Corporate Social Responsibility. It also contains investment arbitration with a high degree of discretion involved. This is in contradiction with what is observed in the EU which involved the creation of an investment court.<sup>6</sup> Another example is labor standards. The TPP prides itself as being the most progressive agreement ever because it explicitly deals with social issues such as labor and environmental standards. The labor chapter calls on all TPP members to comply with internationally recognized labor rights, including the freedom of association and the right to collective bargaining. It also pushes for the adoption of laws governing minimum wages, hours of work, and occupational safety and health. Meanwhile, the environment chapter calls on TPP members to effectively enforce their domestic environmental laws.

TPP opponents in Thailand are led by health-care non-government organizations (NGOs) as well as local firms in pharmaceutical business though the latter's voice was at best mixed. The Intellectual Property (IP) Chapter is very controversial especially the extension of patent protection on pharmaceuticals, and biologics (or biological products).<sup>7</sup>

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<sup>6</sup> Nonetheless, the European Union attempt to enhance transparency in ISDS regime is still subject to various shortcomings. See further discussion in Bernasconi-Osterwalder (2015b).

<sup>7</sup> Therefore, not surprisingly, this is also the area where certain compromises were made. The US has 11 side letters on this, second only to the market access issues, and mostly relating to Geographical Indications.

#### 4. Sectoral Analysis

In this section, we will focus on three main sectors, namely, processed foods (HS03 and 16), clothing (HS 61 and 62) and vehicles (HS 8703 and 8704). There are two reasons to focus only these three sectors in the analysis. Firstly, among 12 TPP members, the US is one of Thailand's major export market with which Thailand yet to sign any FTA. In the US market, these three sectors are still subject to relatively high tariff (Table 2). All other things being constant, the gain for Thailand would be preferential market access. Secondly, Thailand's exports of processed foods and clothing are highly dependent on the US market as opposed to other products. Being in TPP could allow Thai firms to access preferential markets. More importantly, major exporters of these two products (including Vietnam in particular) are in TPP. Hence, whether Thailand is in TPP or not would have significant effect on Thai exports to the US. While the total value of vehicle export from Thailand to the US remains negligible, the potential benefit for supply chain in the automotive sector has been raised in policy circles. In particular, as TPP allows for regional cumulative rules of origin (ROO), this would alter sourcing behavior of carmakers in the region. Hence, there is a belief that not being in TPP could isolate production base in Thailand from the rest.

**Table 2: Average of US Tariff in 2012**

	Mean	Min	Max	SD
All products	3.3	0	79.1	4.6
Processed foods (HS 03)	0.47	0	7.5	1.23
Clothing/Knitted wear (HS 61)	12.8	3.3	28.2	6.1
Clothing/Woven wear (HS 62)	10.1	1.4	24.7	4.8
Passenger CBU vehicles (HS8703)	2.5	2.5	2.5	0
Commercial CBU vehicles (HS8704)	19.9	0	25	9.6

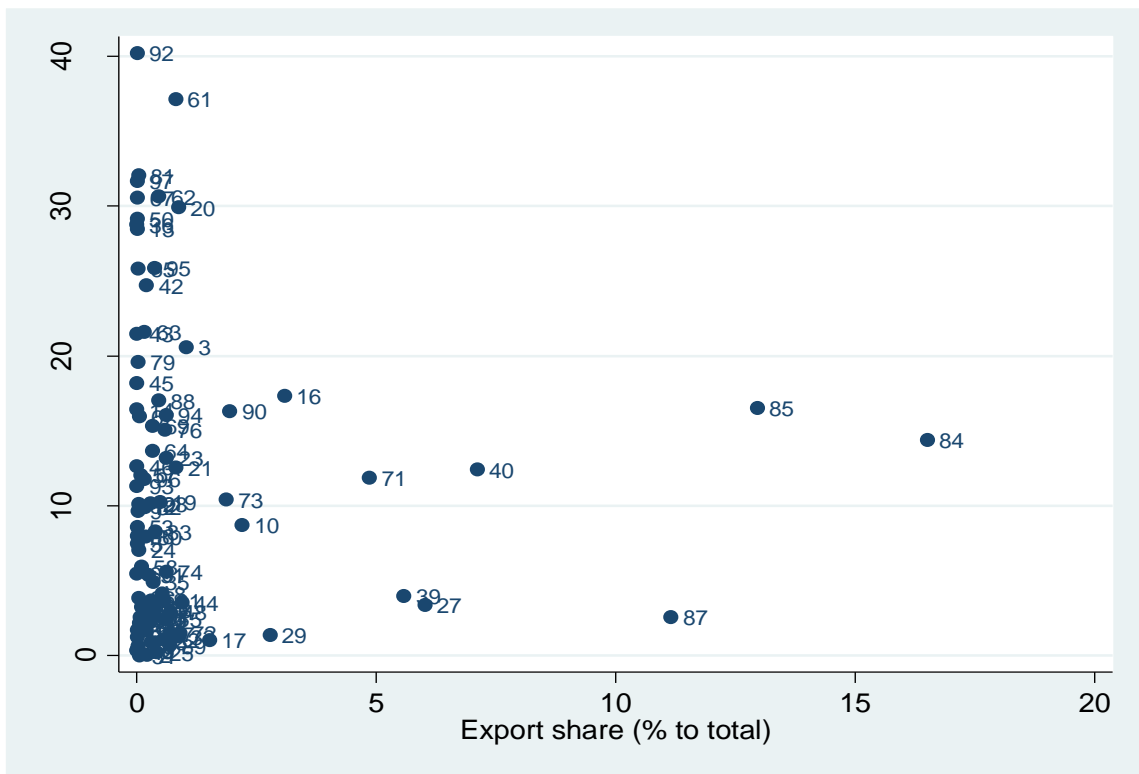
*Note:* Extreme high tariff as a result of converging specific tariff to ad valorem is excluded. They are 350 items, most of which are agricultural primary; there are 2006 items whose tariff rates are zero; total items are 4,855 items.

Source: Author's compilation using WTO database.

#### 4.1 Role of US Market as Export Destination

The relative importance of US as Thailand's export destination has been declining in the past three decades. Its share to total export dropped from nearly 20 per cent in 2002 to 9.6 per cent in 2011 and slightly rebound to 11.2 per cent in 2015.<sup>8</sup> Figure 1 presents disaggregate picture at 2 digit HS classification. In Scatter plot of Figure 1, the vertical axis is the share of export value from Thailand to US to total export whereas the horizontal axis is export share to total export. Each dot in the scatter plot indicates HS 2 digit.

**Figure 1: Relative Importance of US Export Markets and Export Share**



Note: Data are the average between 2012 and 2014.

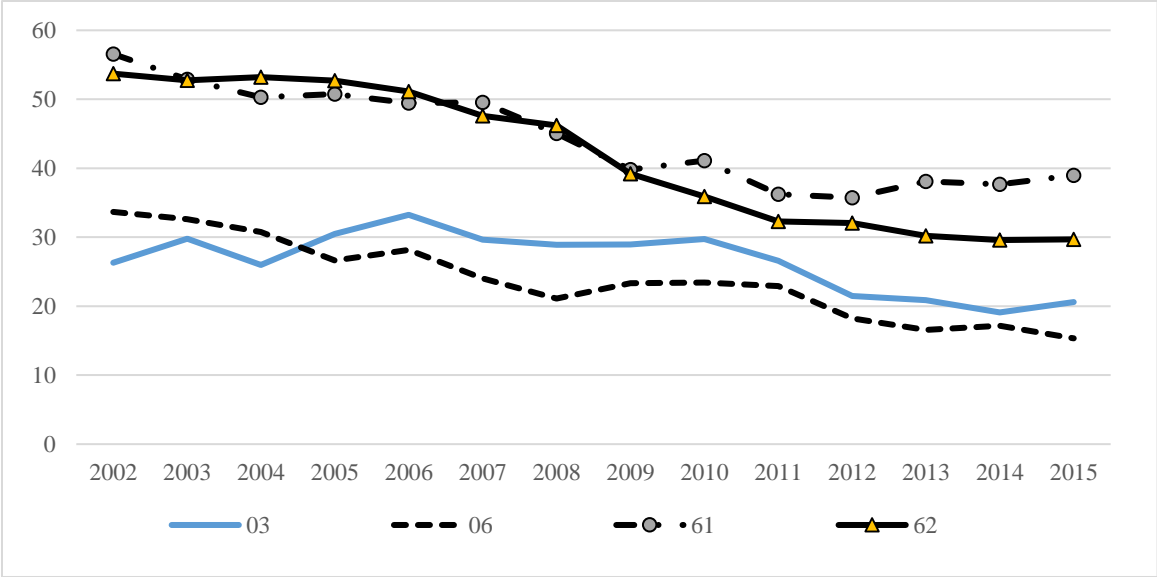
Source: Authors' compiled with data of UN Comtrade

<sup>8</sup> Based on the data retrieved from UN Comtrade database.

In general, what revealed in the plot is the negative relationship, i.e. items relying much on the US are less important to total export. Nonetheless, at the individual sector, the US market remains crucial for both processed foods (HS03 and 16) and clothing (HS 61 and 62). For knitted and woven wears, the US accounted for nearly 40 and above 30 per cent to total export between 2012 and 2014. The role of US market was less for processed foods as opposed to the clothing, accounting for about 20 per cent. Nonetheless, export value of these two sectors accounted only for 5 per cent in total, 3.8 per cent and 1.2 per cent for processed foods and clothing, respectively. In addition, between 2002 and 2015, the importance of the US market in these two sectors declined noticeably (Figure 2).

By contrast, completely built-up (CBU) vehicles has become an increasingly important and major export of Thailand. The US market is not the major export destination. Most of CBU vehicles were mainly exported to East Asia and Oceania. This is especially true for passenger vehicles.

**Figure 2: Relative Importance of the US Export Market for Selected Items, 2002-2015**



Source: Authors' compilation from UN Comtrade database

## 4.2 Rules of Origin

Like other FTAs, the TPP has rules of origin (ROO) to identify the origin of products that are eligible for preferential market access. This is covered in Chapter 3 of the agreement and the ROO by product is presented in Annex 3-D. The core type of ROOs used in TPP is change-in-tariff classification. This could be at either tariff chapter, heading or subheading. In addition, for some products, alternative regional value contents (RVCs) type is available. As presented in Table 3, the ROO for processed shrimps and canned tuna are subject change in tariff subheading (6 digit) except for ready-to-cook shrimps (HS 160520).

**Table 3: ROO on Selected Food Items**

HS 6 digit	ROO
030613 (frozen shrimp)	A change to a good of subheading 0306.11 through 0306.14 from any other chapter
030623 (frozen shrimp)	A change to a good of subheading 0306.21 through 0306.24 from any other chapter
160520 (processed shrimp)	A change to a good of subheading 16.05 from any other chapter
160414 (Canned tuna)	A change to a good of subheading 1604.14 from any other chapter (frozen tuna - 030341-49)

Source: Section B: Product-Specific Rules of Origin in Annex 3-D of TPP official Texts

The text clearly explains the calculation method for RVCs. It can be based on the value of specified non-originating materials (known as focused value method), on value of non-originating materials (build-down method), and on value of originating materials (built-up method). The latter two are for cases in which a product contains both original and non-original materials. Hence, cost breakdown is allowed to be counted as original content. In addition, there is the net cost method which is applied for automotive goods (parts and vehicles) only.

There are at least three special features in the ROO Chapter in TPP. First, ROO in TPP allows member countries to accumulate originating contents along production processes. This

appears in Article 3.6 and 3.10. For example, if a non-originating material used in the production of a good has originating content, such original content counts. Both intermediate and raw materials are eligible. This could facilitate the increasing importance of global production sharing governed by the multinationals. In reality, whether it could alter decisions to allocate/reallocate production sharing remains a subject to be further examined.

Secondly, there are two products where specific rules are imposed over and above those described in Annex 3-D. They are textiles and apparel (Chapter 4) and automotive (Appendix 1 to Annex 3-D). In textiles and apparel, ROO is based on the yarn forward concept where a good qualifies for duty preferences if production occurs in one or more Parties to the FTA from the yarn manufacturing stage forward to the end product. It is also associated with flexibility clauses such as De Minimis<sup>9</sup> and Short Supply Lists (SSLs).<sup>10</sup> In particular, SSLs under TPP are part of the agreement when implemented. There is no process after implementation (Strikler, 2013). This makes the ROO in TPP relatively less restrictive compared to earlier trade deals e.g. NAFTA and CAFTA. It is important to note that production and export of textile and apparel in the US grew in recent years due to the introduction of automation system (Clifford, 2013). This would explain the relatively more liberal position of the US as opposed to the past 50 years.

Similarly, automotive is another sector which has specific ROO. It can be argued that the ROO in TPP for the automotive sector is the most restrictive as opposed to other FTAs that have been signed. In general, it is based on RVC requirement. The percentage RVC target varies according to how RVC is measured. The target is 55 per cent and 45 per cent, respectively, for built-down and net cost methods. Firms are allowed to choose between built-down and net cost methods. It is important to note that built-down method is defined as finished goods value net of value of non-originating materials and then converted into a ratio to finished goods value. The net cost is defined as total cost minus sales promotion, marketing and after-sales service costs, royalties, shipping and packing costs, and non-allowable interest costs that are included in the total cost.

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<sup>9</sup> The example of De Minimis is goods that are not an originating good because the materials used in the production of the good that do not undergo an applicable change in tariff classification set out in Annex A shall nonetheless be considered to be an originating good if the total weight of all such materials is not more than 10 per cent of the total weight of the goods

<sup>10</sup> It is introduced to identify inputs not available in TPP members so that using them from non-members is allowed. There are two categories in SSL, temporary (5 years) and permanent.



In addition, there are additional requirements for specific parts (Table B-Appendix 1), specific processes to be performed within TPP members (Table B), and/or ceiling to being counted (Table C-Appendix 1). For the example of drive-axles, see Table B. For drive-axles to be counted as originating content, forging and machining processes must be performed within the territory. Its value content should not exceed 5 per cent.

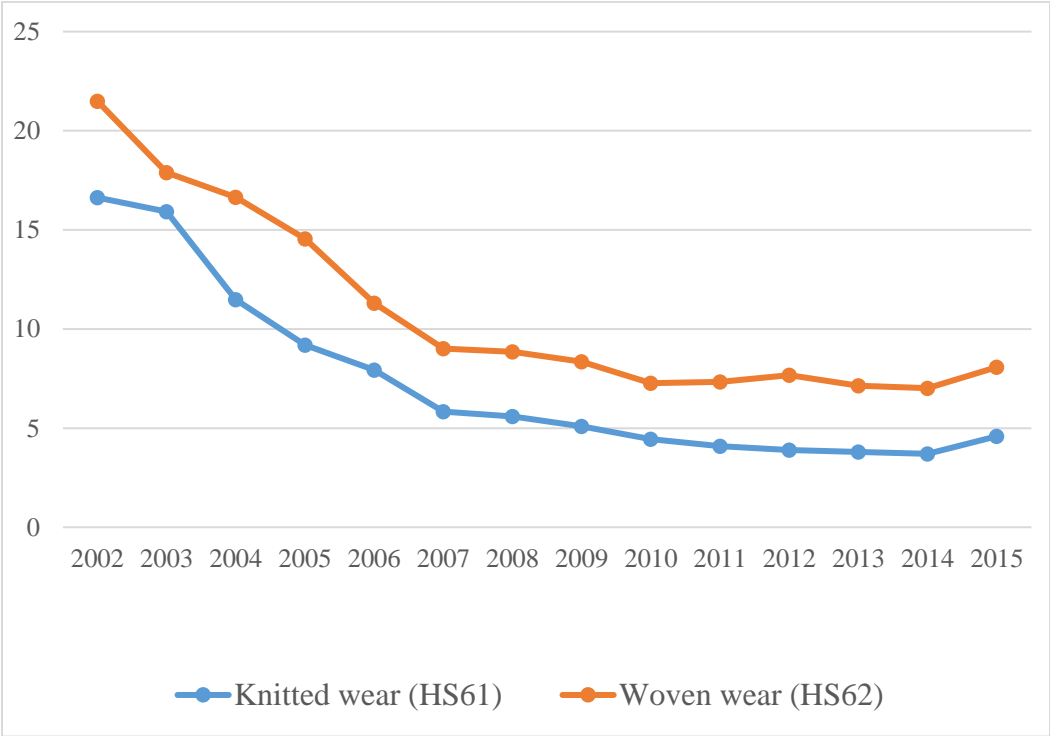
### **4.3 Assessment on Preferential Market Access**

Empirical evidence in Jongwanich and Kohpaiboon (2017) shows that tariff margin matters on firm's decision to apply FTA preferential schemes. This is due to the fact that applying them incurs costs largely from ROO. Hence, both the nature of ROO and tariff margin must be taken into consideration in assessing the actual effect of FTA on market access. As discussed earlier, the selected three sectors are all subject to substantial tariff margin so that there is incentive for firms to apply the schemes.

ROO in the food industry is straightforward in terms of change-in-tariff classification (Table 3). ROO do not have any restrictive effects on firms that do not apply for the preferential schemes. For the processed shrimp industry, its supply chains are all situated within Thailand, starting from shrimp farming to food processing. This is to minimize risk of food contamination that might occur along supply chains. Hence, it is unlikely for any kinds of ROO on the industry will have restrictive effects on processed shrimp exports. Nonetheless, the benefit of preferential market access on Thai export would largely depend on supply-side factors such as pandemic at the farm level and yield performance. By contrast, canned tuna is heavily reliant on imported tuna. This results in a rather small degree of local content in canned tuna compared to processed shrimp. Certain types of ROO and RVC in particular would create restrictive effect on preferential market access. Given the ROO on canned tuna (change in tariff subheading), nonetheless, this could not have any restrictive effect as the main raw materials (HS 030341-49) and finished products (HS160414) are in different HS classification. All in all, food exports from Thailand would benefit if Thailand is in the TPP. Note that the extent to which TPP could benefit food export from Thailand largely depends on supply-side factors (e.g. risk of pandemic, farm yield performance for processed shrimp, and severity of labor shortage experienced by firms in the processed shrimps and canned tuna industries). Demand-side factors like tariff margin are relatively less important.

Clothing industry is subject to huge tariff margin. Although the US will reduce its existing tariff by 35 per cent, there would be substantial incentive for firms to apply the preferential schemes (Elliott, 2016) . Nonetheless, the huge tariff margin is associated with the rather restrictive ROO (yarn forward). Whether yarn forward ROO could create restrictive effect and discourage firms from applying the preferential schemes largely depends on the overall development of textile and garment industry in a country in interest. For countries without well-developed textile industries like Mexico and Vietnam, it is unlikely for firms to compile with yarn-forward ROO. This explains the poor export performance of Mexican apparel export to the US even though both are the members of North American Free Trade Area (NAFTA) in effect since 1996 (Figure 3).

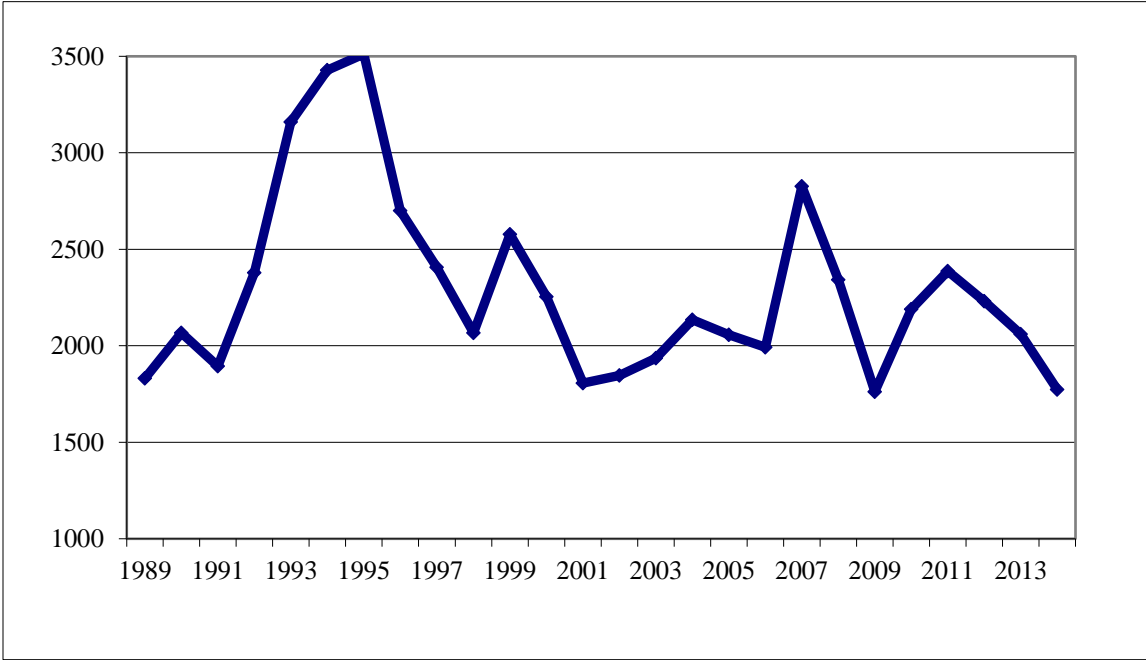
**Figure 3: Market Share of Mexican in the US (% of total the US import)**



Source: Authors' compilation from UN Comtrade database

For countries with well-developed textile industry where locally manufactured apparel relies heavily on locally-made textile, yarn forward ROO could become an unbinding constraint for firms to apply the preferential schemes. For Thailand, sportswear is the case where manufacturing processes of locally made sportswear starts from synthetic fibre. Hence, it is clear that this segment would benefit largely if Thailand is in TPP. This segment accounted for nearly 40 per cent of total apparel export of Thailand. As sportswear is gaining its relative importance in Thailand’s total clothing export, the ratio of (real) imported fabrics to clothing production in Thailand has experienced a downward trend since 2006 (Figure 4). This cannot be generalized to other types of product categories as it varies from product to product.

**Figure 4: Ratio of (Real) Imported Fabric to Clothing Production (US\$/kg)**



Note: Fabrics are defined as HS5111+5112+5113+5208+5209+5210+5211+5212+5309+5310+5311+5407 +5408+5512+5513+5514+5515+5516+6001+6002+6003+6004+6005+6006; aggregate import deflator is used to convert into real term.

Source: Authors’ compilation from official data; import is from UN Comtrade whereas production is from Thai Garment Manufacturing Association (TGMA)

If we assume that all apparel exports from Thailand to the US are sportswear, it accounted for 0.44 per cent of total export. Note that tariff cuts in the TPP take place gradually, 35 per cent of the existing tariffs upon entry and further reduced for 10-12 years (Elliot, 2016). If the price elasticity of apparel is assumed to be equal to -1, Thailand's participation in the TPP would generate benefits equal to 0.15 per cent of total export.

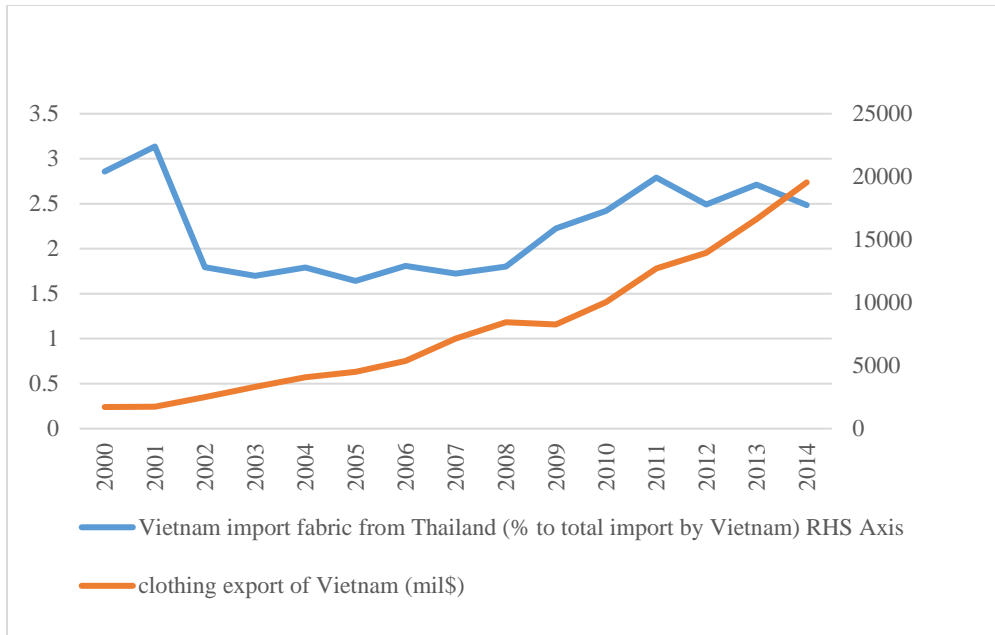
In addition, as Vietnamese clothing sector is increasingly integrated to the global trade, its production relies on imported fabrics from several East Asian economies including Thailand. This is illustrated in Figure 5. In particular, clothing export from Vietnam has taken off since 2003-4. This went hand in hand with the relative importance of imported fabric from Thailand. The share of fabric from Thailand accounted to 2.5 per cent in 2014 from about 1.5 per cent in 2003-4.

Note that the effect of not being in TPP for Thai clothing industry is not necessarily symmetric. In particular, even though Vietnam is in TPP, clothing export from Vietnam is unlikely to greatly benefit from TPP because of the restrictive effect of yarn-forward ROO. This is demonstrated by the ratio of imported fabric value to clothing export value (Figure 6).<sup>11</sup> There are few developing countries including Vietnam where upstream industries of the clothing (e.g. fibre, spinning, weaving and knitting) are well developed so that their clothing export relies on imported intermediates from elsewhere. Hence, the effect of yarn-forward ROO is restrictive. In particular, Vietnamese clothing export rely on imported fabric from non-TPP countries (Lacey, 2015; Elliot, 2016).

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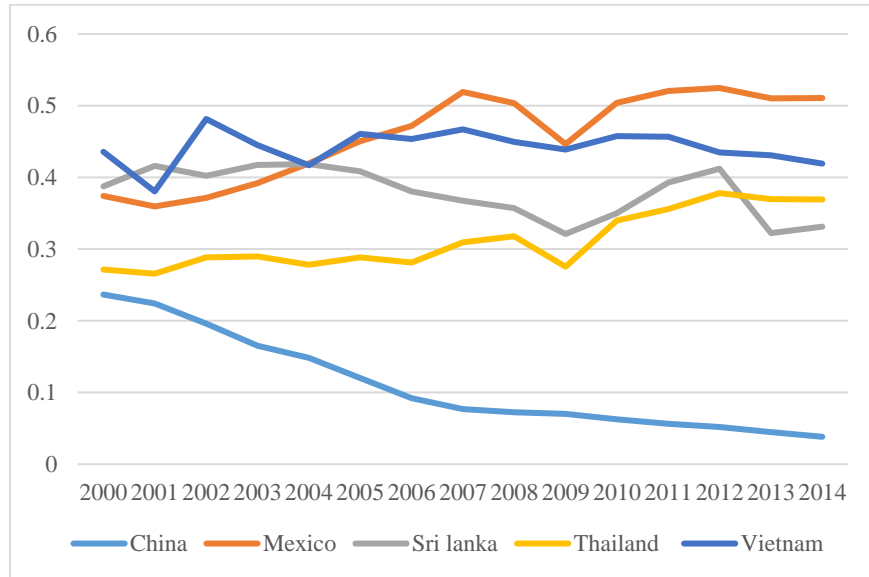
<sup>11</sup> Ideally, we need firm level information about sourcing patterns of firms in these countries. It is not available for public access. Hence, we use the ratio to indicate the extent to which clothing export relies on locally made fabric. The higher the ratio, the lower the local content. This could be used to indicate chance the yarn-forward ROO would be restrictive.

**Figure 5: Vietnamese Import of Fabrics and Export of Clothing, 2000-2014**



Source: Authors' compilation from UN Comtrade database

**Figure 6: Ratio of (Real) Imported Fabric to Clothing Exports of Selected Countries, 2000-2014**



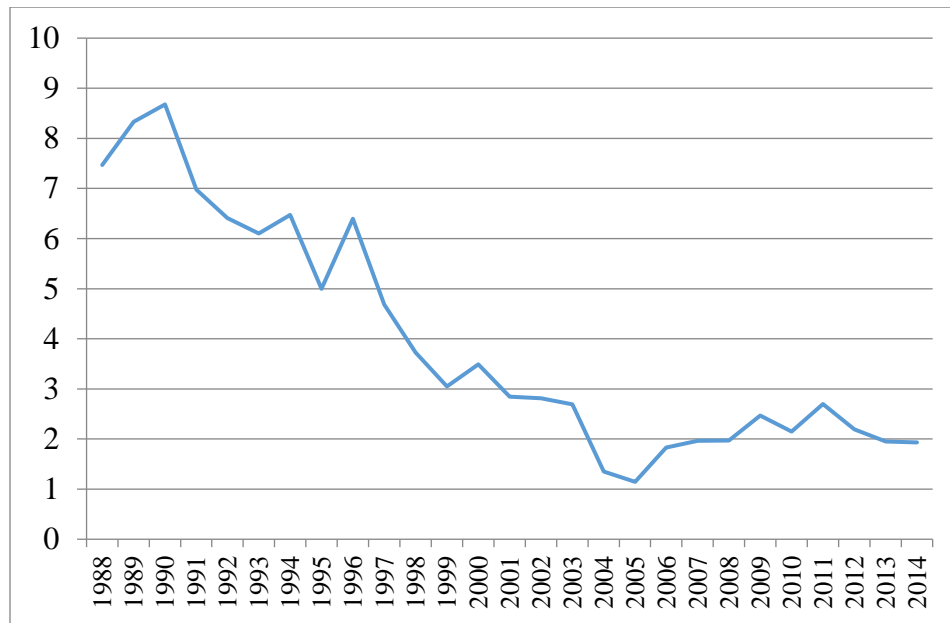
Source: Authors' compilation from UN Comtrade database

For automotive industry, the focus is on commercial vehicles, and pick-up trucks where tariff remains substantially high (i.e. 25 per cent). In TPP, actual liberalization is limited, gradually implemented for members which are major auto producers (including parts/engine) (Oliver, 2016). This is associated with restrictive and complicated ROO as discussed above. Another controversial issue is that the word ‘materials’ that is used in the text of ROO instead of auto parts. This could unnecessarily lead to confusion and cause business uncertainty. Consider a console in a vehicle. Materials used in producing console could be either plastic compound or petroleum, depending on how the word ‘materials’ is interpreted. This is different from the text in AANZFTA where there is alternative, i.e. ‘material costs are value of originating materials, parts or produce that are acquired or self-produced’.

Nonetheless, the ROO in TPP will not likely to be a binding constraint of Thai automotive industry if Thailand joins the TPP. Firstly, like other hubs of multinational carmakers, vehicle production in Thailand relies heavily on locally manufactured parts, illustrated by the downward trend of imported parts value per locally assembled cars (Figure 7). Even though the TPP text contains confusion (the definition of materials), primary raw materials like steels of Thai auto part manufacturing are mostly from Japan which is also a TPP member.

Another argument raised in the automotive industry is about altering production networks, moving away from non-member countries to member ones. The production and trade pattern of the US vehicles industries suggest that the US imported extensively from TPP members such as Canada, Japan Mexico, and Korea. In other words, these countries are natural partners. In addition, the nature of international trade of vehicle is regional-oriented (Kohpaiboon and Wongcharoen, 2016). Multinational carmakers which have affiliates in Thailand also have affiliates/factories in the US and other TPP members. It is unlikely for firms to trade across continents in the industry. When finished goods are not aimed for the US, there is no reason for automakers in the region to alter their supply chain.

**Figure 7: Ratio of (Real) Import Value of Auto Parts to Vehicle Production**  
(1,000\$/a unit)



Source: Authors' compilation from two data sources. Trade data are from UN Comtrade Database whereas production data are from Thai Automotive Institute.

## 5. TRIP plus and Its Impact on Pharmaceutical Expenses

One of the controversial issue featured in discussions on TPP in Thailand is intellectual-property rights (IPRs) which is regarded as an attempt to strengthen the protection of origin medicine manufacturers. In general, there are at least ten crucial issues pertaining to drugs and pharmaceutical products, all of which increase pharmaceutical expenses (Table 4). Note that the main purpose of this paper is not to undertake an in-depth examination of the IPR text in TPP (as there are many systematic analyses primarily focusing on it - see below). Our analysis here aims to supplement the existing literature by addressing the potential adverse effects on local pharmaceutical firms if Thailand joins the TPP.

**Table 4: Summary of Issues in TPP’s TRIPS-plus**

Issues	Remark
1. Protection for test data exclusivity	Undisclosed test or other data concerning the safety and efficacy of the product that was previously submitted to market the same or a similar product cannot be used for 5 years for new pharmaceutical –chemical based products, 3 years for new indication, new formulation, or new method of administration, and 8 years for new pharmaceutical products containing a biologics (Article 18.47)
2. Linkages between drug registration and patents	Develop database so that innovative pharmaceutical companies can be aware of any attempt to produce corresponding generic medicines. (Article 18.53)
3. Patent term compensation for granting delay	Adjust the patent terms for unreasonable delay including a delay in the issuance of a patent of more than five years from the date of filing of the application or three years after a request for examination of the application. (Article 18.46)
4. Patent term compensation for delay of marketing approval	Adjust the patent terms for unreasonable curtailment (Article 18.48)
5. Compulsory licensing restrictions to national emergency for public non-commercial use	There are not texts about how compulsory licensing can be used (Article 18.6)
6. Parallel import limitations through contracts with the patent holders	Limit parallel import due to procedure differences across countries
7. Prohibition of the revocation of patent on public interest grounds	A patent may be cancelled, revoked or nullified only on grounds that would have justified a refusal to grant the patent. It must provide at least one opportunity to make amendments, corrections and observations (Article 18.39 and 18.43)
8. Patentability of new uses of products	Expand a scope of patentable products, including new uses of a known product (new indication), new methods of using a known product (new formulation), or new processes of using a known product (new method) (Article 18.37)
9. Patentability of animals and plants (Biologics)	Provide effective market protection on new pharmaceutical product that is or contains a biologic (Article 18.51)

Sources: Authors’ compilation from official texts.



As revealed in Table 4, the main purpose of the IPR text is to extend the period in which innovative pharmaceutical companies can be protected in order to better recoup their research and development investments. This is referred as market exclusivity in short.<sup>12</sup> Under TPP's IPRs, new uses of a known product, new methods of using a known product, or new processes of using a known product are eligible to apply for patent protection (Article 18.50). This is widely known as a sort of evergreening patent. It affects the playing field of generic pharmaceuticals competing against the corresponding origin medicines. Such strengthening of protection makes pharmaceutical companies which were the first to introduce the innovation<sup>13</sup> easier to get additional patent protection by making minor changes in their products. In addition, TPP member countries are also requested to compensate patent owners for any unreasonable delay in the issuance of a patent as well as the marketing approval process (Article 18.46).

Another key feature of IPRs under the TPP that would significantly strengthen market exclusivity for innovative pharmaceutical companies is data exclusivity, i.e. a period of exclusivity for test data relating to the efficacy and safety of medicines (Article 18.50). This information cannot be used by other companies for at least five years from the date of marketing approval of the new pharmaceutical product. A period of exclusive use of testing data is even longer for biological medicines which has become increasingly important for current treatment. In cases that require new clinical information for marketing approval of a known product with new indication, new formulation or new method of administration, the market exclusivity period is at least three years. Other pharmaceutical companies must submit their own performed undisclosed test or other data concerning the safety and efficacy of the product. This would incur costs for generic drug makers. This seems to be restrictive as it still takes six or seven years for generic-drug makers to use such test and other data available to develop medicines with bio-equivalence (New York Times, 2015). All in all, price competition for off-patent medicines would be much less.

There is a debate on the justification of strengthened IPRs in the TPP. On the one hand, market exclusivity for innovative pharmaceutical companies is needed to encourage pharmaceutical innovation. This is due to the fact that it can take years to actually bring a drug to

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<sup>12</sup> Nonetheless, it remains debatable in this subject. The other extreme viewed by NGO representatives is that research and development expenditures in developing origin medicines in the US are largely financed the government instead of private pharmaceutical firms.

<sup>13</sup> The scope of Innovation is in line with the definition of inventive step of the patent regime.

the market after patent protection granted. Time lags could be due to various reasons such as delay in granting patent and marketing approval, and commercialization of new medicines.<sup>14</sup> It significantly shortens the useful life of any given patent. According to the Pharmaceutical Research and Manufacturers of America (PhRMA), for example, it takes a minimum of 10 years for a new medication to go from initial discovery to the marketplace. Clinical trials alone take six to seven years on average. For example, researching and developing a successful drug costs \$2.6 billion on average (Horning, 2013). Because pharmaceutical companies sink so much time and money into the drugs they produce, they tend to get hit hard when their patents run out. Hence, the effect of market exclusivity is to keep generics at bay and allow patent owners re-coup their research and development investments. Otherwise, it would discourage any innovation activities within the industry. This has become a greater concern today as biologics gain their relative importance in current treatment<sup>15</sup>. Biological products often represent the cutting-edge of biomedical research and, in time, may offer the most effective means to treat a variety of medical illnesses and conditions that presently have no other treatments available.<sup>16</sup>

On the other hand, there is counter-argument on the theoretical justification above. For example, a number of basic research projects including in pharmaceutical areas are government-funded instead of by private firms. Fruits from this research should be public goods to a large extent instead of private assets such that there is no justification for the extended protection. In addition, the benefit of the extended protection tends to be concentrated with a handful multinational companies in developed countries and US in particular. (Smith and Correa, 2009; New York Time, 2015).<sup>17</sup> Hence, such protection could inflate medical expense unnecessarily through high prices for imported medicines. Besides, the increasing trend of merger and

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<sup>14</sup> For example, see Targum and Milbauer (2008) discussing time lag from the initial discovery to final market launch.

<sup>15</sup> Biologics are treatments made from biological sources, including vaccines, anti-toxins, proteins, and monoclonal antibodies for everything from Ebola to cancer. Research and development investment in biologics are much more expensive to make, costing on average 22 times more than non-biologic drugs as they are much more structurally complex and involve high risk and uncertainty (Belluz, 2015)

<sup>16</sup> What remains largely unknown and controversial is the optimal time of protection. For example, the United States proposed 12 years of data exclusivity for biologics. Japan offers eight years, for instance.

<sup>17</sup> For example, about 5,600 medicines are in development in the 12 TPP countries, 60 per cent of which are in the US (New York Time, 2015).

acquisition (M&A) in pharmaceutical companies and the chance of predatory pricing have caused concerns amongst NGOs worldwide.

The TPP's IPRs could escalate medical expenses incurred by people in developing countries. It is important to note that the increasing expenses is because of the extra protection granted to multinational pharmaceutical firms through market exclusivity instead of raising cross-border trade barriers in favor of local producers. The focus of TPP opponents in this subject is purely based on concerns of escalating medical expenses and fairness of the protection granted to these multinational pharmaceutical firms.

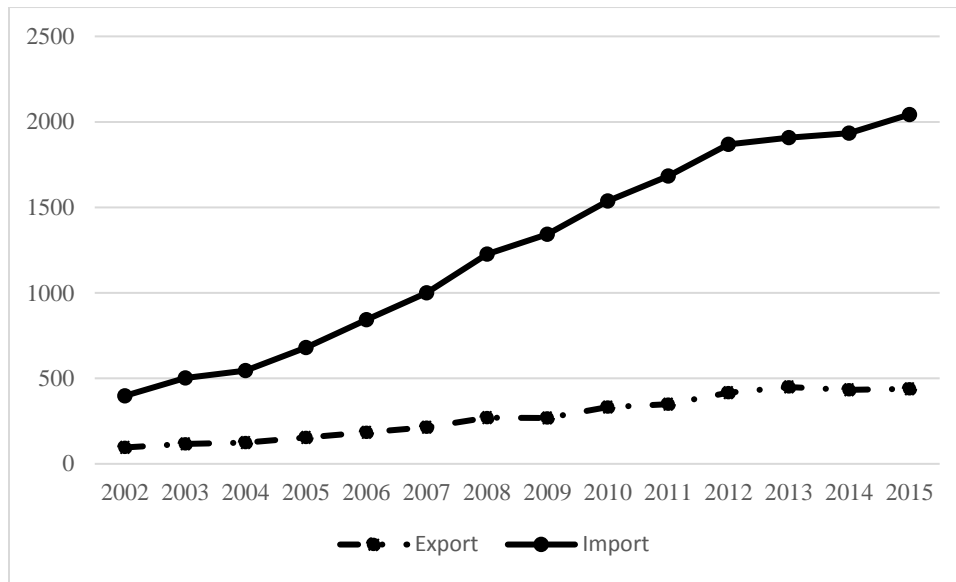
While there are two studies assessing the impact of TRIPS similar to TPP's, i.e. Akalephan et al. (2009) and Kessomboon et al. (2010), the following discussion follows the former because the assumption used in it is largely in line with the current text of TPP. They use the US's TRIPs proposal as a base and focus on the impact of extension of market exclusivity. They found that the cost incurred by the market exclusivity could double medical expenses. It prevents about one-third of population to access medicine (under the same expense). In addition, for all innovative drugs, the annual cost (at 2003 price) increases exponentially from US\$6.2 million in the first year to US\$5,200 mil in the 10<sup>th</sup> year of exclusivity (Akalephan et al., 2009).<sup>18</sup> This amount exceeds the gain from clothing export if Thailand is in TPP.

There are other adverse effects that are ignored in the previous studies. One is related to the adverse effect on playing fields of local pharmaceutical firms in developing countries. In general, most of pharmaceutical companies in developing countries produce traditional and herbal medicines which do not overlap much with the products of multinational pharmaceutical firms. Definitely, there are some exceptions-e.g. Brazil, Thailand and India whose local companies have substantial capacity to produce generic medicines. In particular, medicine exports from Thailand grew noticeably since 2000 in spite of the increasing value of medicine imports (Figure 8). By 2014, Thailand was ranked 4<sup>th</sup> among non-OECD Asian economies in terms of medicine exports.

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<sup>18</sup> Note that their estimation is rather a short-to medium term impact. The long-term consequence of the proposal (e.g. expansion the patentability to new area of innovative, and restriction on overriding measures to patent rights) as well as limitation on and complicated the exploitation of flexibilities (e.g. compulsory licensing, safeguard measures) are excluded largely because of the difficulty in quantifying them as well as the high degree of discretion involved in doing so. In addition, their estimate is regarded as the lower bound as researchers only focus the first 70 items of the 1,136 imported International Non-proprietary Name (INNs) accounted for around 50 of total sale value in 2003 due to data constraints.

**Figure 8: Export and Import of Medicines in Thailand, 2000-2015**



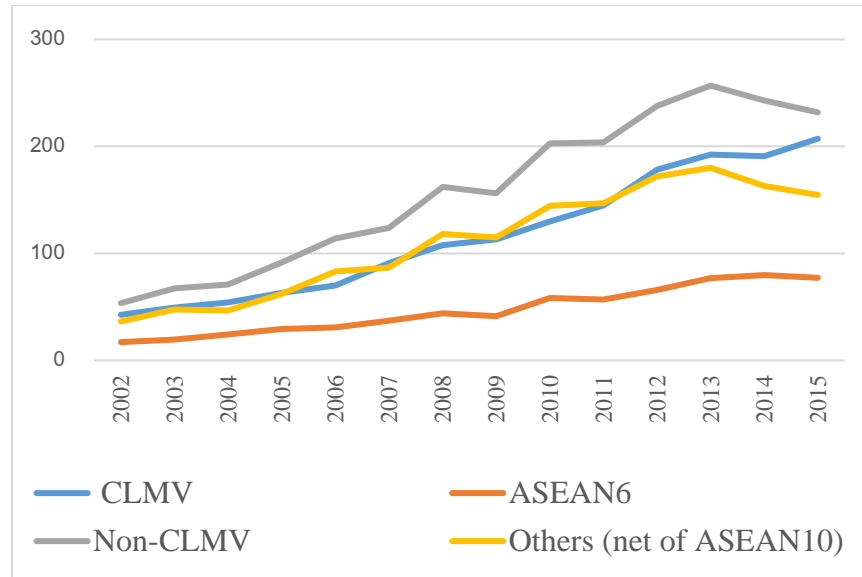
Source: Authors' compilation from UN Comtrade database

More importantly, the country's export destination is not only for poorer-income neighbors (i.e. Cambodia, Laos, and Myanmar) (Figure 9). This is in a sharp contrast in belief that local pharmaceutical firms in Thailand just duplicated off-patent medicines. In fact, as revealed in Kohpaiboon et al. (2016), there are a number of capable local firms that are highly active in R&D, and are alert to innovation available elsewhere. Some can differentiate from origin medicines and offer better solutions for customers whereas the others have positioned themselves as suppliers in response to the ongoing outsourcing from multinational pharmaceutical firms.

If Thailand joins TPP, these local firms must perform all tests relating to the efficacy and safety of medicines themselves. As revealed in Kohpaiboon et al (2016), there are disagreements among local firms about the dollar costs incurred in performing such tests. Some argue that TPP's IPRs will make them to perform all by themselves but the others claim that such tests are currently performed in order to produce off-patent medicines. Nonetheless, this generates tremendous business uncertainty due to ambiguity in the related texts about what and how information submitted by innovative pharmaceutical companies can be used. Such uncertainty could be major constraints for firms to undertake R&D activities. Given their limited resources, the quantitative estimate of the adverse effect on local pharmaceutical firms is not provided in this study. All in

all, this highlights another adverse effect to Thailand from being involved in TPP and it must be included in calculating the net gain.

**Figure 9: Export Value to Selected Export Destination, 2000-2015**



Source: Authors' compilation from UN Comtrade database

## 6. Conclusion and Policy Inferences

The paper addresses the issue of whether Thailand should join the TPP by examining the potential effects of TPP on key stakeholders in the food, garment, automotive and pharmaceutical industries. While TPP, like other FTAs, is associated with positive and negative effects, its complexity makes the measurement of its net effects in GTAP simulations imprecise. Such net effects are likely to be overestimated. Some effects such as those on investment are not exclusive to TPP membership. Economic reforms could and should be undertaken unilaterally regardless of whether Thailand is involved in TPP or not. Another key finding is that the potential adverse effects of the TPP on pharmaceutical industries is substantial, covering both the direct effects on higher price of medicines and the adverse effect on local pharmaceuticals. Such adverse effects on local firms which are often ignored in the previous studies could be substantial but found only in

few developing countries where local firms are capable. Our analysis suggests the cost would exceed benefit.

The key policy inference is that policymakers must be cautious in assessing the net benefit before signing a rather complex FTA like TPP. Today, following the withdrawal of the US from the TPP, the prospect of TPP being implemented has become more bleak. However, the TPP texts can guide future FTA negotiations. Our results complement and provide caution to existing GTAP model simulations that often overestimate the net benefits of the TPP.

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## Appendix

### Comparison between Net Cost and Build-down ROO Methods in TPP

The appendix is to compare the two ROO methods used to prove origin of manufactured vehicles in TPP. Generally, there are two methods, build-down and net cost methods. Their formula are in Equation A.1 and A.2.

$$\text{Built-down RVC} = \frac{\text{Value of Goods} - \text{Value of Non-origin.Mat.}}{\text{Value of Goods}} * 100 \geq 55 \quad (\text{A.1})$$

$$\text{Net Cost} = \frac{\text{Net Cost} - \text{Value of Non-origin.Mat.}}{\text{Net Cost}} * 100 \geq 45 \quad (\text{A.2})$$

Where

Non-origin Mat. = Non-originating materials including materials of undetermined origin.

Net Cost = total cost minus sales promotion, marketing and after-sales service costs, royalties, shipping and packing costs, and non-allowable interest costs that are included in the total cost.

Under certain assumption (assuming 25 % marketing costs); net cost is more restrictive than build down.

Assume 25 % marketing cost;

Net Cost = 0.75 Gross Output

$$\begin{aligned} \text{Net Cost} &= \frac{0.75 \text{ Gross output} - \text{Non-originating}}{0.75 \text{ Gross output}} \geq 45\% \\ &= \frac{\text{Gross output} - \text{Non-originating}}{\text{Gross output}} - \frac{0.25 \text{ Non-originating}}{0.75 \text{ Gross output}} \geq 45\% \\ &= \text{Built down} - \frac{1}{3}(1 - \text{Builtdown}) \geq 45\% \\ &= \frac{4}{3} \text{ Built down} \geq 45\% + 0.33 \\ &= \text{Build down} \geq 58.5\% \end{aligned}$$