RCEP – Thailand Trade Creation and Trade Diversion: Evidence and Analysis

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1. Introduction

The substantial influence created by Regional Trade Agreements (RTAs) and their impact on member and non-members have been the subject of discussion of many researchers. The core discussion has been around the trade creation and trade diversion effects. Viner (1950) provided a conceptual framework for studying the trade effects of an RTA. According to Viner's model, a RTA is beneficial if the magnitude of trade creation is larger than trade diversion. The trade creation effect is to within the RTA area; a country will get benefited by importing commodities which are once highly protected in domestic market from a lower-cost member. The trade diversion effect is to the country will suffer a loss diverting her imports from a low cost external country to a high cost member country because of tariff deduction within the RTAs.

There is a sizable literature that conducts empirical studies on trade creation and/or trade diversion via the gravity model (MacPhee & Sattayanuwat, 2014). The dummy variables in the gravity model capture an economic impact. Literatures called that impact as trade creation and trade diversion. Unfortunately the definitions of the terms trade creation and trade diversion from the gravity model differ from the welfare-effect definitions given by Viner (1950).

This study attempts to identify products that might have potential trade creation or trade diversion between Thailand and each Regional Comprehensive Economic Partnership[1] Member States (RMS) within the scope of Viner (1950)'s definition. This paper employs the Revealed Comparative Advantage (RCA) and Trade Intensity Index (TII) accompanying with tariff rate under each RTA.

2. Review Literature: Research Method Perspective

Empirical methodology for impact assessment of RTA falls into two categories: ex post and ex ante. Ex ante analyses evaluate the potential economic effects of RTAs. Normally ex ante are based on three methods: trade indicators, SMART (software for market analysis and restrictions on trade) in WITS (world integrated solution), and the GTAP (Global Trade Analysis Project) model. Ex post analyses use data available both before and after the RTAs has been formed focusing on the effect of RTAs on the trade shares of members and non-members (Rivera-Batiz & Oliva, 2004) (Plummer, Cheong, & Hamanaka, 2010).

Focusing on the *Ex post* analyses, Plummer, Cheong, and Hamanaka (2010) presents the Ex post analyses into three sections. The first section try to answer has the RTA affected a member country's trade. The coverage rate, utility rate, and utilization rate are the methods to answer this first question. The second section explains how to use trade and production statistics to assess the trade effects and welfare consequences of an RTA. They describe both qualitative and quantitative approaches to evaluating an RTA. The last section explain the gravity model to indicate channels

Plummer, Cheong, and Hamanaka (2010) divide RTA and welfare indicators into two groups namely (1) qualitative analysis of trade creation and trade diversion and (2) quantitative indicators of trade and welfare effects. For a qualitative analysis of trade creation and trade diversion, Plummer, Cheong, and Hamanaka (2010) propose a comparison of trade and production levels before and after an RTA's implementation using the following five criteria:

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1 In November 2011, the Association of South East Asian Nations (ASEAN) proposed a new regional free trade agreement (FTA) initiative called the Regional Comprehensive Economic Partnership (RCEP) at the 19th ASEAN Summit, Bali, Indonesia. In November 2012, the RCEP idea was subsequently supported by the 16 national leaders. Main motivation in proposing the RCEP was ASEAN's desire for its centrality. In the context of trade regimes, the ASEAN centrality can be threatened by the Trans-Pacific Partnership (TPP) and the China-Japan-Korea FTA (CJK-FTA). Thus RCEP is the strategy for ASEAN in order to gain both politically and economically (Fukunaga, 2014).

(i)   An increase in imports from FTA partners accompanied by a drop in domestic production indicates trade creation.

(ii)   An increase in imports from FTA partners accompanied by a drop in imports from non-FTA partners indicates trade diversion.

(iii)   A rise in total imports where imports from non-FTA partners are constant or increasing implies that there is no trade diversion, thus indicating a positive welfare effect.

(iv)   A rise in total imports where imports from non-FTA partners and domestic production decrease and
   a. the fall in imports from non-FTA partners is larger than the fall in domestic production, implying that trade diversion exceeds trade creation, thus indicating a negative welfare effect; or
   b. The fall in imports from non-FTA partners is smaller than the fall in domestic production, implying that trade creation exceeds trade diversion, thus indicating a positive welfare effect.

(v)   A drop in total imports indicates a negative welfare effects.

For quantitative indicators of trade and welfare effects, Plummer, Cheong, and Hamanaka (2010) refer to Lloyd and Maclaren (2004) and show that the economic welfare of a member country depends on changes in three key indicators namely trade volume, intra-union terms of trade, and extra-union terms of trade. These are all related to the member country's trade volumes increase or its terms of trade improve as result of the RTA, then its economic welfare will have increased.

However there are several limitations to both methods. The qualitative method is limited, by its descriptive and does not quantify the RTA's trade or welfare effects. On the other hand, the quantitative methods are limited in the way that they account for other factors, besides the RTA affecting trade.

In this study, I attempt to identify products that might have potential trade creation or trade diversion under RCEP which would have important policy implications on tariff reduction/removal under RCEP.

3. Wisarn's RCA Matching Approach[2] and Data

This study proposes the new approach to examine the trade effect among RTA's member states. The method refers to the concept of comparative advantage by Ricardian model. Trade between two countries can benefit both countries if each country exports the goods in which it has a comparative advantage.

In examining trade effects, I employ the Reveal Comparative Advantage (RCA) Index accompanied to Trade Intensity Index (TII) and tariff rate to identify trade creation and trade diversion. This is the first study to use RCA, TII, and tariff rate to identify products that might have potential trade creation or trade diversion.

RCA[3] Index provides us with a country's export potential. The index can be tracked over time or compared across countries to gauge if a country's trade is moving in the right direction. The method used to calculate the RCA index in the Balassa (1965) formula:

$$RCA_{ji} = \frac{X_{ji}/X_j}{X_{wi}/X_w}$$

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[2] The original idea of this method stems from Dr. Wisarn Pupphavesa.
[3] The concept of RCA was first introduced by (Liesner, 1958), but redefined and popularized by (Balassa, 1965) and known as the Balassa Index.

where X_{ji}, X_{wi} are exports of products "i" by country "j" and the "world" respectively, X_j, X_w are values of total export of country "j" and the "world" respectively. It measures a specific product's share in the country's total exports relative to share of this product in world export. The magnitude value of the RCA index ranges from zero to infinity ($0 \leq RCA_{ji} \leq \infty$). When the product's share in national exports is greater than its share in the world export (RCA > 1), then it can be said that the country has revealed comparative advantage in the production of the concerned commodity. Similarly, if a product has RCA < 1 then the country has revealed comparative disadvantage in that product.

This study uses revealed comparative export advantage (RCAX) and revealed comparative import advantage[4] (RCAM) and matches RCAX and RCAM of Thailand with RCAX and RCAM of each RMS.

$$RCAX\_Th = \frac{X_{TH,i}/X_{TH}}{X_{wi}/X_w}$$

where $X_{TH,i}$, X_{wi} are exports of product "i" by "Thailand" and the "world" respectively, X_{TH}, X_w are values of total export of "Thailand" and the "world" respectively.

$$RCAX\_Partner = \frac{X_{Partner,i}/X_{Partner}}{X_{wi}/X_w}$$

where $X_{Partner,i}$, X_{wi} are exports of product "i" by "Partner" and the "world" respectively, $X_{Partner}$, X_w are values of total export of "Partner" and the "world" respectively.

$$RCAM\_Th = \frac{M_{TH,i}/M_{TH}}{M_{wi}/M_w}$$

where $M_{TH,i}$, M_{wi} are imports of product "i" by "Thailand" and the "world" respectively, M_{TH}, M_w are values of total import of "Thailand" and the "world" respectively.

$$RCAM\_Partner = \frac{M_{Partner,i}/M_{Partner}}{M_{wi}/M_w}$$

where $M_{Partner,i}$, M_{wi} are imports of product "i" by "Partner" and the "world" respectively, $M_{Partner}$, M_w are values of total import of "Partner" and the "world" respectively.

Under RCEP, Thailand and RMS would offer trade preference to each other and hence trade between them would increase. Given Thailand's point of view, the increase in exports to and imports from RMS would occur under the following conditions:

1. Trade creation in favor of Thailand's export of product i where Thailand has comparative advantage in export of product j in the world market (RCAX_TH >1) and RCEP trading partner has comparative advantage in import of product j in the world market (RCAM_Partner >1);

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[4] Originally Vollarth (1991) offered alternative specifications of RCA namely the relative trade advantage (RTA), which is calculated as the difference between relative export advantage (RXA) and relative import advantage (RMA).

2. Trade creation in favor of Thailand's import of product i where Thailand has comparative advantage in import of product i in the world market (RCAM_TH >1) and RCEP trading partner has comparative advantage in export of product i in the world market (RCAX_Partner > 1);

3. Trade creation in favor of product differentiation and/or production network where Thailand has comparative advantage in export of product j in the world market (RCAX_TH >1) and RCEP trading partner has comparative advantage in export of product i in the world market (RCAX_Partner >1);

4. Trade diversion in favor of Thailand's export of product i where Thailand does not have comparative advantage in export of product i in the world market (RCAX_TH <1) and RCEP trading partner has comparative advantage in import of product i in the world market (RCAM_Partner >1);

5. Trade diversion threat on Thailand's import of product i where Thailand has comparative advantage in import of product i in the world market (RCAM_TH >1) and RCEP trading partner does not have comparative advantage in export of product i in the world market (RCAX_Partner <1);

I would like to call "*Wisarn's RCA Matching Approach*." The table 1 draws up a typology of the trade creation and trade diversion identifiable from the approach.

Note that a limitation[5] of using RCA index is that, in reality, observed trade patterns can be distorted by both government policies and interventions at home and abroad, and the effect of the demand side in the importing countries.

Table 1 Typology of Trade Creations and Diversions

Criteria	Effects of Trade Creation/Diversion
RCAX_Th > 1 & RCAM_Partner > 1	Possible Trade Creation in favor of Thailand's export
RCAM_Th > 1& RCAX_Partner > 1	Possible Trade Creation in favor of Thailand's import
RCAX_Th > 1& RCAX_Partner > 1	Possible Trade Creation through Product Differentiation and Production Network
RCAX_Th < 1 & RCAM_Partner > 1	Possible Trade Diversion in favor of Thailand's export
RCAM_Th > 1 & RCAM_Partner < 1	Possible Trade Diversion threat on Thailand's import

Source: Author

TII provides us to measure of the extent of bilateral trade flows among RTA's member states. TII is measured as the ratio of one country's exports going to a partner country divided by the proportion of world exports going to the same partner.

$$TII_{ij} = \frac{t_{ij}/T_{iw}}{t_{wj}/T_{ww}}$$

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[5]In 1992 OECD stated that "It is difficult to identify empirically the "true" measure of comparative advantage; the use of the RCA index provides a second-best solution for two reasons. First theoretically, the RCA index can be interpreted in a distortion-free world as a measure indicating the degree of deviation of the actual from the indicating the degree of deviation of the actual from expected ("neutral") trade pattern (Vollrath, 1991). Second, the RCA index gives a much higher degree of consistency than alternative measures, thereby reducing significantly the sensitivity of empirical results to the choice of indices (Ballance, Forstner and Murray, 1987). When using a reasonably long span of time-series data, it appears that the RCA index reflects more of the impact of changes in comparative advantage than changes on the demand side (Fukasaku, 1992, p17)."

where t_{ij} is the value of total trade of country "i" with country "j", T_{iw} is the value of the total trade of country "j" with the world, t_{wj} is the value of world trade with country "i" and T_{ww} is the value of world trade. TII provides a measure of the relative importance as a market of the destination to the source, when compared with the world as a whole. Therefore the index less than 1 implies the bilateral trade flows are lower than its potential, given the partner country's presence in world trade.

For each product i, I calculated Thailand's import intensity index (MII_Th) and partner's import intensity index (MII_Partner). If Thailand import product i from partner in greater proportion than from the world (more intensive than from the world), the MII_Th would be greater than 1 (MII_Th >1). So as to the partner's import intensity index (MII_Partner).

$$\text{MII\_TH} = \frac{M_{TH,Partner,i} / M_{TH,w,i}}{M_{wPartner,i} / M_{ww,i}}$$

where $M_{TH,Partner,i}$ and $M_{w,Partner,i}$ are the imports of product "i" by "Thailand" and that of the "world" from "Partner", respectively, and $M_{TH,w,i}$ and $M_{ww,i}$ are total imports of product "i" of "Thailand" and that of the "world" from the "world", respectively.

$$\text{MII\_Partner} = \frac{M_{Partner,TH,i} / M_{Partner,w,i}}{M_{w,TH,i} / M_{ww,i}}$$

where $M_{Partner,TH,i}$ and $M_{w,TH,i}$ are the imports of product "i" by "Partner" and that of the "world" from "Thailand", respectively, and $M_{Partner,w,i}$ and $M_{ww,i}$ are total imports of product "i" of "Partner" and that of the "world" from the "world", respectively.

The important contribution made by the approach is that it turns its attention to how to use the results in a practical sense to develop strong export promotion policies, strategies and negotiation.

4. RCEP: Thailand's Perspective

The RCAX and RCAM defined above are computed for each RMS. The data are supplied by PS-TAS-HS Revision 2 2007-2011, the International Trade Center at the six-digit product categories. I choose the top 200 - 300 export products and top 200 - 300 import products in 2011. Table 2 provides number of export products having RCXA >1 and number of import products having RCAM > 1. The numbers in the parenthesis represent the percentage of total value export and total value of import.

Table 2: Number of Export Products with RCAX > 1 and Import Products with RCAM > 1

Country	Number of Export Products		Number of Import Products	
	Top Exports	RCAX > 1	Top Imports	RCAM > 1
Brunei	200 products (99.95%)	25	200 products (84.71%)	158
Indonesia	300 products (86.26%)	215	287 products (70.25%)	222
Malaysia	291 products (83.40%)	204	293 products (72.02%)	213
Philippines	220 products (93.64%)	201	300 products (79.52%)	217
Singapore	295 products (87.76%)	189	283 products (82.72%)	169
Thailand	300 products (79.08%)	231	300 products (73.15%)	202
Cambodia	200 products (99.56%)	141	200 products (87.49%)	177
Laos	200 products (99.40%)	141	197 products (66.90%)	176
Myanmar	200 products (98.62%)	173	200 products (70.06%)	176
Vietnam	200 products (80.33%)	174	200 products (62.08%)	168

China	300 products (63.81%)	272	300 products (80.28%)	209
Japan	270 products (75.10%)	224	275 products (74.94%)	180
Korea	300 products (83.24%)	201	293 products (76.77%)	200
Australia	258 products (93.72%)	145	272 products (70.71%)	192
New Zealand	265 products (88.76%)	200	281 products (66.96%)	211
India	293 products (79.90%)	242	285 products (83.01%)	166
USA	276 products (66.63%)	201	271 products (71.16%)	189
EURO	200 products (55.82%)	152	200 products (56.43%)	142

Source: Author's calculation

Table 3: Results

Effects of Trade Creation/Diversion & Tariff Regime	Total Non-Zero Tariff Products	Import Intensity	Non-Zero Tariff Products	Corr. (MII, Tariff)
Trade creation in favor of Thailand' Exports (*RCAX_Th > 1 & RCAM_Partner > 1*) = 148 products	51 products	MII_Partner < 1 = 87 products	14 products	0.074
		MII_Partner > 1 = 123 products	35 products	
Trade creation in favor of Thailand's Import (*RCMA_Th > 1 & RCXA_Partner > 1*) = 155 products	68 products	MII_Th < 1 = 91 products	28 products	-0.057
		MII_Th > 1 = 134 products	57 products	
Product Differentiation and Production Network (*RCXA_Th < 1 & RCXA_Partner > 1*) = 183 products (Agriculture product 30 products and manufacturing product 153 products)	83 products	MII_Th < 1 = 135 products	40 products	-0.1242
		MII_Th > 1 = 124 products	51 products	
	77 products	MII_Partner < 1 = 115 products	24 products	-0.0206
		MII_Partner > 1 = 128 products	23 products	
Trade Diversion in favor of Thailand Export (*RCAX_Th < 1 & RCAM_partner > 1*) = 95 products	67 products			
Trade Diversion threat on Thailand Import (*RCAM_Th > 1 & RCAX_partner < 1*) = 101 products	92 products			

Source: Author's calculation

4.1 Possible Trade Creation in favor of Thailand's export: *RCAX_Th > 1 & RCAM_partner > 1*

As mentioned earlier, trade creation in favor of Thailand's export of product "j" is equivalent to a RCAX of Thailand greater than one matching with a RCAM of importer country greater than one.

In 2011 from the top 300 export products (79.08 percent of Thailand's total export value), Thailand had 231 products indicating RCXA greater than one (77 percent of Thailand's top 300 exports). Of the 231 Thailand's RCXA greater than one products, I investigated 148 product-country combinations matching with RCAM of partner greater than one (64 percent of Thailand's total number product that Thailand has RCAX>1). This implies that most of Thailand's comparative advantage exports result in trade creation in favor of Thailand's exports. Of those 148 product-country-combinations, there were 51 products showing RCEP country still impose non-zero tariff for product import from Thailand. This implies that Thailand's RCEP trading partners will take advantage of their liberalized tariff regime.

Table 4: List of Products showing Possible Trade Creation in favor of Thailand's Export with tariff of RMS

Country	List of Products
China (ACFTA)	HS390120 (6.5%), HS390210 (5%), HS390319 (5%), HS390410 (5%), HS400121 (20%), HS400122 (20%), HS848210 (5%)
Japan (JTAPA and AJCEPA)	HS170111 (72%), HS030749 (0.6%, 15%), HS160232 (3.5%, 5.6%), HS160590 (1.2%, 3.2%), HS230910 (5.75%, 13.42%), HS030379 (0.6%)
Korea (AKFTA)	HS390810 (6.5%), HS540233 (8%), HS848210 (13%)
Australia & New Zealand (AAZFTA)	HS392010 (5%), HS610990 (10%)
India (TIFTA and AIFTA)	HS151110 (100%, 72%), HS270799 (10%, 5%), HS290230 (5%, 3%), HS291736 (8%, 6%), HS390110 (8%, 5%), HS390740 (0%, 4%), HS400121 (20%, 20%), HS400220 (10%, 4%), HS490700 (10%, 5%), HS710812 (10%, 5%), HS740400 (5%, 5%), HS740710 (5%, 5%), HS841490 (0%, 5%), HS841510 (0%, 6%), HS890590 (10%, 6%)
Indonesia (AFTA)	HS100630 (6.5%), HS100640 (10.36%), HS170111 (21.68%)
Malaysia (AFTA)	HS100630 (20%)
Philippines (AFTA)	HS100630 (40%)
Cambodia (AFTA)	HS210390 (20%), HS220290 (20%), HS230990 (5%), HS252329 (5%), HS271019 (10%), HS292242 (5%), HS330510 (7%), HS392321 (15%), HS392690 (20%), HS410449 (5%), HS691200 (5%), HS870333 (20%), HS870421 (5%), HS870431 (5%), HS871120 (5%), HS871419 (5%)

Source: Author

I divided those 148 product-country-combinations into two categories namely an import intensity value greater than one and an import intensity value less than one.

An import intensity value index less (MII_partner < 1) than one indicates the potential for increasing trade under the most favorable trade creation condition. In other words, if Thailand expands trade by exporting those commodities, Thailand's partner will get benefited by importing those commodities.

There were 87 product-country-combinations showing MII value less than one (MII_partner < 1). Of those 87 product-country-combinations, 14 products identify non-zero tariff.

On the other hands, 123 product-country-combinations show MII value greater than one. Of those 123 product-country-combinations, 35 products identify non-zero tariff. The correlation coefficient between MII and tariff is -0.074. This interprets that under trade creation in favor of Thailand's export, the import intensity of RMS do not relate to their tariff rate. In other words, given tariff elimination for

the RCEP cover all ASEAN+1 FTAs, tariff become less importance for trade, while other obstacles such as trade facilitation and non-tariff measures (NTMs) will become more importance. In addition those total 51 non-zero tariff products should be reduced tariff to zero under their RTAs.

4.2 Possible Trade Creation in favor of Thailand's Import: *RCAM_Th > 1 & RCAX_partner > 1*

Trade creation in favor of Thailand's import is equivalent to a RCAM of Thailand greater than one matching with a RCAX of Thailand's partner greater than one. In 2011 from the top 300 import products (73.15 percent of Thailand's total import value), Thailand has 202 products showing RCAM greater than one (67.33 percent of Thailand's total number product that Thailand has RCAM >1). Of those 202 products, I found 155 product-country combinations matching with RCAX of partner greater than one (76.73 percent of most of Thailand's comparative advantage import products). This indicates that RCEP is the major importing market in the sense of trade creation in favor of Thailand's import. Therefore Thailand should encourage importing in selected products from a given RCEP market.

Of those 155 product-country combinations, there are 68 products that Thailand still impose non-zero tariff with a given country. Tariff reduction in those products will benefit Thailand from import expansion.

Table 5: Products showing Possible Trade Creation in favor of Thailand's Import with tariff of Thailand

Country	List of Products
China	HS731815 (10%), HS841430 (10%), HS850110 (10%), HS850431 (10%), HS852990 (10%), HS871419 (10%)
Japan	HS320890 (7.3%), HS390690 (5%), HS720827 (5%), HS720838 (1%), HS720839 (1%), HS720917 (1%), HS720918 (5%), HS721012 (5%), HS721049 (5%), HS721391 (5%), HS721934 (5%), HS722530 (1%), HS731815 (10%), HS740311 (1%), HS840820 (10%), HS840991 (10%), HS840999 (10%), HS841330 (10%), HS841370 (2.5%), HS841430 (2.5%), HS841480 (5%), HS841490 (1%), HS842199 (2.5%), HS842720 (1.3%), HS847710 (2.5%), HS848071 (2.5%), HS848180 (5%), HS848310 (1%), HS850110 (2.5%), HS850300 (2.5%), HS850450 (1%), HS851140 (10%), HS851190 (1%), HS852990 (2.5%), HS853650 (1%), HS853690 (1%), HS853710 (10%), HS853890 (5%), HS870190 (5%), HS870600 (24.5%), HS870840 (30%), HS870850 (30%), HS870899 (30%), HS871419 (30%), HS903289 (5%)
Korea	HS320890 (10%), HS720827 (5%), HS720838 (5%), HS720839 (5%), HS720917 (5%), HS720918 (5%), HS721012 (5%), HS721049 (5%), HS721061 (5%), HS721070 (5%), HS721391 (5%), HS721913 (5%), HS721934 (5%), HS732690 (10%), HS852990 (10%), HS870210 (40%), HS870899 (30%)
India	HS030379 (30%), HS030749 (20%), HS230400 (15%), HS270119 (3%), HS270799 (5%), HS280300 (5%), HS710239 (5%), HS710391 (5%), HS710399 (5%), HS720110 (5%), HS721049 (5%), HS740311 (5%), HS760110 (5%), HS841480 (8%), HS848310 (8%), HS870190 (5%), HS870210 (10%), HS870600 (10%), HS870899 (8%), HS890400 (5%), HS890590 (5%), HS890690 (5%)
Australia & New Zealand	HS030379 (5%), HS040210 (5%), HS210690 (10%), HS720827 (5%), HS720838 (1%), HS720839 (1%), HS740311 (1%), HS853720 (10%)

Source: Author

Thailand's MII less than one identify there is a potential for growth in Thailand imports from corresponding trading partner. There are 91 products showing MII of Thailand less than one. Of those 91 products, Thailand impose non-zero tariff on 28 products.

On the other hand, 134 products indicate Thailand's MII greater than one. Of those 134 products, there are 57 products indicating non-zero tariff. The correlation coefficient between Thailand's MII and tariff is -0.057. This result is consistent with the pervious case in that the import intensity of Thailand does not relate to her tariff rates. This also implies that in order to increase the volume of trade in the case of trade creation in favor of Thailand import, trade facilitation and non-tariff measures (NTMs) will become the priority issues.

4.3 Possible Trade Creation through Product Differentiation and Production Network

RCAX of Thailand greater than one matching with RCAX of partners greater than one is defined as product differentiation and production network. In 2011 there are 183 product-country combinations under this category (79 percent of Thailand's top total export products). This reflects that most of the Thailand main total export products are the items that RCEP partners also have comparative advantage.

Of those 183 product-country combinations, 30 items are agricultural products and 153 items are industrial products. Thus, for this category, export promotion for Thailand as well as import promotion for RCEP partner is to enhance benefit in terms of product differentiation and production network.

In sense that Thailand as importer, 85 items showed Thailand imposing non-zero tariff. Of those 183 products, there are 135 products reporting Thailand's import intensity index less than one. This indicates that there is a room for import expansion. Of those 135 products, 40 products report non-zero tariff. Therefore if Thailand's tariff is lowered, it will raise Thailand import. The correlation coefficient between Thailand's MII and tariff is -0.1242.

Table 6: Products showing Possible Trade Creation through Product Differentiation and Production Network with tariff of Thailand

Country	Product
China	HS401110 (10%), HS401120 (10%), HS620323 (5%), HS620343 (5%), HS621210 (5%), HS640220 (30%), HS640319 (10), HS640399 (30%), HS731815 (10%), HS732393 (10%), HS841430 (10%), HS841451 (20%), HS841510 (30%), HS841810 (30%), HS845011 (30%), HS850110 (10%), HS850431 (10%), HS850440 (10%), HS851650 (30%), HS851660 (20%), HS851679 (20%), HS852721 (10%), HS852910 (10%), HS852990 (10%) HS871120 (60%), HS871419 (30%)
Japan	HS330499 (29.1%), HS390730 (5%), HS390740 (5%), HS391000 (4.5%), HS731815 (10%), HS840820 (10%), HS840991 (10%), HS841330 (10%), HS841430 (2.5%), HS841459 (1%), HS841490 (1%), HS841590 (5%), HS842199 (2.5%), HS842952 (2.5%), HS850110 (2.5%), HS851220 (5%), HS852990 (2.5%), HS853641 (1%), HS853650 (1%), HS853710 (10%), HS854890 (1%), HS870333 (80%), HS870431 (29.1%), HS870894 (30%), HS870899 (30%), HS871120 (60%), HS871140 (43.6%), HS871419 (30%), HS880330 (1.3%), HS900211 (2.5%)
Korea	HS711719 (20%), HS721633 (10%), HS732690 (10%), HS841810 (20%), HS845011 (20%), HS852990 (10%), HS870421 (40%), HS870899 (30%)
Australia & New Zealand	HS030379 (5%), HS081090 (10%), HS160420 (10%), HS160590 (20%), HS170310 (10%), HS200899 (10%), HS210690 (10%), HS841810 (10%)
India	HS030379 (30%), HS030613, HS030749, HS170111 (60%), HS170199 (60%), HS170310 (6%), HS270799 (5%), HS271019 (5%), HS280300 (5%), HS390210 (5%), HS390760 (6%), HS392020 (8%), HS401120 (8%), HS540233 (6%), HS550320 (10%), HS551511 (8%), HS610990 (10%), HS611120 (8%), HS620422 (6%), HS710391 (3%), HS710399 (5%), HS711311 (5%), HS711319 (5%), HS732393 (5%), HS870322 (100%), HS870899 (8%), HS871120 (100%), HS880330 (3%), HS8900400 (5%), HS890590 (5%0, HS950662 (5%)

Source: Author

On the other hand, exports from Thailand to RCEP countries can also rise significantly because of their existing 77 non-zero tariff products (42 percent). Of those 183 products, 115 products report Thailand's RCEP partners have import intensity index less than one and 24 products show non-zero tariff. The correlation coefficient between partners' MII and tariff is -0.0206.

Table 7: Products showing Possible Trade Creation through Product Differentiation and Production Network with tariff of RMS

Country	Product
China	HS711319 (5%), HS848210 (5%), HS851679 (5%)
Japan	HS252310 (5%), HS390110 (6.5%), HS390120 (6.5%), HS390210 (6.5%), HS390230 (6.5%), HS390410 (6.5%), HS390740 (6.5%), HS890810 (6.5%)
Australia & New Zealand	HS392010,
India	HS030379 (30%), HS030613 (30%), HS030749 (30%), HS170111 (60%), HS170199 (60%), HS170310 (10%), HS270799 (10%), HS271019 (5%), HS280300 (5%), HS390210 (8%), HS390760 (10%), HS392020 (10%), HS401120 (10%), HS540233 (10%), HS550320 (10%), HS551511 (10%), HS610990 (10%), HS611120 (10%), HS620422 (10%), HS710391 (10%), HS710399 (10%), HS711311 (10%), HS711319 (5%), HS732393 (10%), HS870322 (10%), HS870899 (10%), HS871120 (100%), HS880330 (3%), HS890590 (10%), HS950662 (10%)
Philippines	HS170111 (38%)
Cambodia	HS071410 (5%), HS100630 (5%), HS100640 (5%), HS100814 (7%), HS151110 (5%), HS170111 (7%), HS230910 (10%), HS392321 (15%), HS400129 (5%), HS440799 (5%), HS610990 (5%), HS611120 (5%), HS621210 (5%), HS870333 (20%), HS890400 (5%)
Myanmar	HS030379 (5%), HS030613 (5%), HS030623 (5%), HS030749 (5%), HS071410 (5%), HS081340 (5%), HS100620 (5%), HS100630 (5%), HS100640 (5%), HS110814 (5%), HS160520 (5%), HS400121 (1%), HS400122 (1%), HS400129 (1%), HS400599 (1%), HS440799 (5%), HS900211 (5%)
Vietnam	HS030379 (5%), HS030613 (5%), HS030749 (5%), HS081090 (5%), HS100630 (5%), HS160414 (5%), HS160520 (5%), HS160590 (5%), HS170199 (10%), HS230990 (5%), HS252310 (5%), HS292242 (5%), HS392321 (5%), HS392690 (5%), HS400110 (3%), HS400122 (3%), HS400129 (3%), HS401120 (5%), HS401699 (5%), HS610990 (5%), HS620343 (5%), HS620422 (5%), HS621210 (5%), HS640319 (5%), HS640399 (5%), HS711319 (5%), HS731815 (5%), HS850110 (5%), HS854430 (5%), HS870899 (5%), HS871120 (5%), HS871419 (5%), HS900691 (5%), HS940169 (5%)

Source: Author

Therefore identifying and eliminating non-tariff obstacles would be needed to increase mutual welfare gain from trade creation effect through product differentiation and production network.

4.4 Possible Trade Diversion in favor of Thailand's Exports

It is interesting to note that Thailand might be able to enjoy short term benefit from RCEP trading partners' imports of 95 products which Thailand did not have comparative advantage in export. Of those, 67 products are items on that partner impose zero tariffs. However these are short term gains could be sustained, should Thailand appropriately develop competitiveness in these products. Otherwise, Thailand would be better off restructure away from them.

4.5 Possible Trade Diversion threat on Thailand's Imports

Lastly, there are 101 product-country combinations falling in trade diversion threat on Thailand's imports (50 percent of the main import product of Thailand). Of those, Thailand has already granted duty

free to RCEP trading partners on 92 products which RCEP trading partners did not have comparative advantage in export. Therefore Thailand should consider extending duty free on MFN basis for these 92 products.

5. Conclusion

This study proposes the new method, the Wisarn's RCA matching approach, to identify products that might have potential trade creation or trade diversion among Thailand and RMS. The data are supplied by PS-TAS-HS Revision 2 2007-2011 at the six-digit product categories. Given Thailand's point of view, the increase in exports to and imports from RMS would occur under five conditions. There are 148 product-country-combinations showing possible trade creation in favor of Thailand's export and 155 product-country-combinations showing possible trade creation in favor of Thailand's import. In addition there are 183 product-combinations showing possible trade creation through product differentiation and production network. Possible trade diversion in favor of Thailand's exports appears 95 product-country-combinations in which Thailand should develop competitiveness in these products or Thailand would be better off restructure away from them. Lastly there are 101 product-country combinations falling in trade diversion threat on Thailand's import. In addition I find that tariff become less importance for trade, while other obstacles such as trade facilitation and non-tariff measures (NTMs) will become more importance.

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