Potential Gains to Thailand from Joining the Bangkok Agreement

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Abstract

Formed in 1975, the Bangkok Agreement (BA) was the oldest preferential trade arrangement (PTA) in Asia-Pacific that aims to boost trade volumes among developing countries. Currently, there are six member countries: Bangladesh, India, Lao People's Democratic Republic, Republic of Korea, and Sri Lanka. China is the latest member who just acceded to the agreement in 2001. However, the intra-member trade in the Bangkok Agreement region has remained relatively small. This, therefore, attributes to the limited number of concessions for success of this trade bloc. Nevertheless, the decision of Thailand for joining the Bangkok Agreement should be studied more for its possible outcomes. This paper analyzes the potential gains if Thailand decides to be a member of the Bangkok Agreement. This paper calculate some indicators and estimate a pool gravity model to quantify the possible gains to Thailand if it decides to join the Bangkok Agreement PTA. Due to comparative advantage and potential of trading on "Textile, Wearing Apparel and Leather Industries", "Manufacture of Chemical, Petroleum, Coal, Rubber and Plastic Product", "Manufacture of Paper and Paper Products, Printing, and Publishing" and "Basic Metal Industries", trade creation can be expected to exist in these industries within the Bangkok Agreement. The Agriculture sector, Mining sector, Manufacture of Food, Beverage, and Tobacco, and other industries such as Pearls and precious stones, Furniture, and other accessories are still the below potential industries in which Thailand should aim for further negotiations.

JEL Classification: F13

Keywords: Thailand; Bangkok Agreement; Preferential Trade Arrangements

1. Introduction

Formed in 1975, the Bangkok Agreement (BA) was the oldest preferential trade arrangement (PTAs) in Asia-Pacific that aims to boost trade volume among developing countries in the region. Currently, there are six member countries: Bangladesh, India, Lao People's Democratic Republic, Republic of Korea, and Sri Lanka. China just acceded to the agreement in 2001. Following the previous WTO Director's aspiration, Dr.Supachai Panichpakdi to promote trade among developing countries, there is a strong encouragement from the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) to Thailand to possibly join and become a member of the Bangkok Agreement preferential trade arrangement. ESCAP believes that the Bangkok Agreement should not only benefit Thailand by increasing trade volume among

developing countries in Asia Pacific, but also enhance the potential of trade negotiations for this region in the global context.

However, due to economic instability among those member countries and other incurring reasons, the possibilities for Thailand to join this preferential agreement have to be determined. The main purposes of this paper, therefore, are to analyze the implications and benefits to Thailand from joining the Bangkok Agreement. In the next section, the paper starts by evaluating main sectors of the bilateral trading between Thailand and the Bangkok Agreement member countries (BAMCs) as well as some trade obstacles among those member countries. In section 3, both qualitative and quantitative measurements will be implemented to explain whether this regional trade agreement in the broader sense would cause any trade creation/diversion effects[1]. The measurements explain whether trade volume would be likely to exist and which industries/sectors should considered to be the potential and below potential. Section 4 follows the analysis by explaining the possibilities for Bangkok Agreement to increase a number of their country members in which those prospective countries should cause trade increment as well as the economic growth among the group. Further negotiations of potential the potential sectors that are believed to benefit Thailand upon joining the concession should be raised in the future. Section 5 concludes.

2. Bilateral Trade between Thailand and BAMCs

Even though a number of regional trading systems of PTAs (AFTA, APEC, ASEM, BIMST-EC, IMT-GT, etc.) were formed after when the Bangkok Agreement was established, Bangkok Agreement is still an alternative to increase the added value to Thailand on trade preferential, especially among the developing countries (South-South trade). Figure 1 shows volumes of Thailand's export/import among numbers of regional trading agreements, which Thailand is one of those members. Trading volume in year 2000 was mostly concentrated on the countries in APEC then following by ASEM and ASEAN. However, trade volume between Thailand and those BAMCs are still considerably low by observing the statistical data of BIMST-EC, China, Korea, India, and Bangladesh, therefore, it is most likely that trade volume among members should be created upon the trade concession among those countries.

In 2000, Thailand's world export of goods worth $69,056 million where the major export commodities were concentrated on "electrical and electronic equipment", "Nuclear reactors, boilers, machinery, etc", and "Rubber and articles thereof". The majority markets of total export volume are located in U.S., EU, and Japan, and approximated 7.3% of total export went to the member countries in Bangkok Agreement.

[1] This paper analyzes only the trade creation and trade diversion that may exist in Thailand upon joining the preferential trade agreement. However, trade creation and trade diversion can be considered to exist in other countries who join the agreement as well as in the Rest of the World (See Schiff and Winters; 2002)

Figure 1: Share of Thailand's export/import with trade blocs and trade partners

Source: Department of Trade Negotiation, Ministry of Commerce, Thailand

China is the largest export market among these members counted 3.8% of the total export while Korea is the second counted 1.7%. Thailand's import of goods in 2000 worth $61,923 million where the major import commodities were concentrated on "Electrical, electronic equipment", "Nuclear reactors, boilers, machinery, etc", and "Mineral fuels, oils, distillation products, etc". Share of importing from the BAMCs to compare to country's import was approximately 9.5% in which the majority of importing from these BAMCs came from, respectively, China (5.1%) and Korea (3.3%). Based on this information, China and Korea have provided the striking force to induce Thailand for joining this preferential trade arrangement. The export/import volumes and its share between Thailand and those BAMCs are presented in the following table:

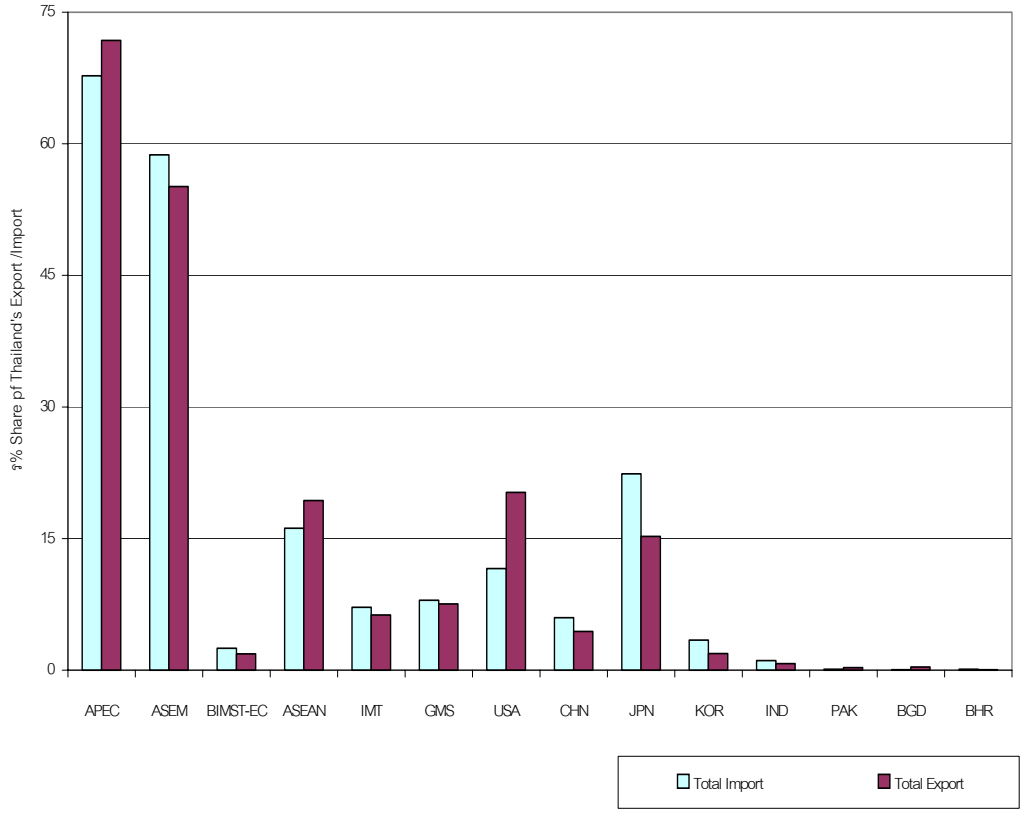


Table 1: Volume and Share of Thailand's export/import to the Bangkok Agreement Member Countries in year 2000.

Countries	Export		Import	
	Volume ($ Million)	World Share (%)	Volume ($ Million)	World Share (%)
Bangladesh	203	0.3	38	0.1
China	2,837	3.8	3,389	5.1
India	518	0.8	575	1.0
Korea Rep.	1,285	1.7	2,173	3.3
Lao P. Dem. R.	355	0.5	70	0.1
Sri Lanka	162	0.2	76	0.1
Total	5,039	7.3	5,904	9.5
World	69,056	100	61,923	100

Source: Department of Trade Negotiation, Ministry of Commerce, Thailand

Thailand-Bangladesh

Trade agreement between Thailand and Bangladesh was firstly established in August 1977. During recent five years of 1997-2001, trade volume between both countries was, in average, $209.6 Millions, which were approximately 16.4% increased every year. In 2000, Thailand export volume to Bangladesh was $203 million accounting 0.3% of the total export, where the main export commodities were focused on the "Plastics and articles thereof", "Nuclear reactors, boilers, machinery, etc", and "Cotton". Thailand's imports from Bangladesh were approximated $38 million considering only 0.1% of total import in 2000. However, the major imported commodity were "Fish, crustaceans, molluscs, aquatic invertebrates", around 3.16% of Thailand's import in this industry and "Vegetable textile fibres nes, paper yarn, woven fabric" covered 29.43% of industry import. The bilateral trade obstacles between Thailand and Bangladesh came from a number of reasons such as 1) Bangladesh consumers have relatively low purchasing power, 2) Problems from issuing L/C and other financial transactions, and 3) Traded commodities are the consumer products considered low margin outcome.

Thailand-China

China joined the Bangkok Agreement in 2001 considering to the country that provides the most impact for trade creation among the member countries and for Thailand on deciding to join the membership. The trade agreement between Thailand and China was firstly established on March 1978 to promote trade volume between both countries. The trade volumes have been increasing from $3,743 millions in 1995 to $4,333 in 1999, except the slight reverse in 1998, which were $3568 millions, due to the Asian economic crisis. In 2000, total trade volume was about $6226 millions, which were approximated 43.7% accrued from last year or 4.7% of Thailand's total trade volume. Thailand's export to China, in 2000, was about $2,837 millions accounting 3.8% of Thailand's global export. The volume of Thailand's import from China was approximated $3,389 millions in 2000, which was about 5.1% of Thailand's total import. The main intra-traded commodities of both export and import between both countries were focused on "Nuclear reactors, boilers, machinery, etc" and "Electrical, electronic equipment". Trade obstacles between both of these countries are mainly from 1) The similarity of trade structures that seems to be the competitors for each other, 2) High imported tariff that China imposed on Agriculture products, and 3) Thailand have faced lower degree of competitiveness in China market especially in the agriculture products and textiles.[2]

Thailand-India

India is the 22nd trade partner of Thailand in which the trade agreement between both countries was firstly established in 1966. The total trade volume during the five years period of 1996-2000 was, in average, $896 millions accounting approximated 7.7% annually increased. Thailand's export goods to India were about $518 millions in 2000 in which the main commodities were "Nuclear reactors, boilers, machinery, etc", "Ores, slag and ash", and "Ships, boats and other floating structures". Thailand's import from

[2] Chalongphob (2003) carries out a detailed study explaining the comparable trade structure between Thailand and China. He shows the strong analysis that there are many similarities among both countries' export structure, which seems to be very competitive for each other.

India in 2000 was approximated $575 millions. Those imported commodities were focused on "Pearls, precious stones, metals, coins, etc", that was as high as 24.02% of industry import, "Organic chemicals (4.22%)" and "Residues wastes of food industry, animal fodder" (12.29%).[3]

Thailand-Korea Republic

Korea is Thailand's 9th trading partner in which the statistical evidence shows the similarity of trading structure between both countries. Trade volume between both countries in 2000 was $3,458 millions, which was about 29.8% accrued from 1999. In 2000, Thailand's export to Korea was about $1,285 millions (1.7% of Thailand's global export) while the import volume of Thailand from Korea was approximated double fold as $2,173 millions (3.3% of Thailand's global import). The main commodities of both import and export between both countries were "Nuclear reactors, boilers, machinery, etc" and "Electrical, electronic equipment". A free trade agreement between Thailand and Korea was firstly conducted in 1961 but it is still needed to be reviewed for such circumstance. The main trading obstacles between both countries are mainly from trade deficit that Thailand has faced and high tariff/non-tariff barriers that Korea imposed. The negotiation regarding to this trade barrier issues should be raised by the Thai's government in the next bilateral (JTC) and multilateral (WTO, APEC, ASEM, and ASEAN-KOREA Dialogue) trade conferences.

Thailand- Lao People's Democratic Republic

Cross-border trade agreement between Thailand and Laos was firstly signed in 1978 to promote cross-border trading between both countries. The total trade volume between both countries during 1995-2000 was, in average, $442 millions, which approximated $326 millions was the amount that Thailand earned trade surplus. The total export volume from Thailand to Laos in 2000 was approximated $355 millions. The main export commodities were focused on "Vehicles other than railway, tramway", "Mineral fuels, oils, distillation products, etc", and "Electrical, electronic equipment". Total Thailand's import from Laos was about $70 millions where the main commodities were Wood and articles of "wood, wood charcoal", "Live animals", and "Ores, slag and ash". Especially live animals, it was as high as 30.09% of total import in this industry. Trade obstacles between both countries are mainly from numbers of inefficient processes and customs at the cross-border area, instability of Lao's financial and government system, and relatively high transportation cost. Moreover, cross-border trading may causes existence of "gray market" between both countries in which the gray market lowers the transparency of trade between both countries.

[3] Mehta (2002) summarizes the Thailand and India' bilateral trade that large portion of trade between both countries should be the trade creation. However, high tariff/ non-tariff barriers imposed by India are still relatively high in which it is the main obstable for Thai's exporters for penetrating to the market. Non-tariff barriers such as AD/CVD and Safeguard, are remained the major issues that should be raised for the further negotiations.

Table 2: Five major Thailand's export/import commodity to/from the Bangkok Agreement member countries in 2000.

Export			Import		
HS Code (2-digit)	Volume ($ Thousand)	Share of industry export (%)	HS Code (2-digit)	Volume ($ Thousand)	Share of industry import (%)
Bangladesh					
39	32,075	1.17	03	21,823	3.16
84	16,632	0.14	53	10,463	29.43
52	11,646	2.91	31	7,638	1.69
55	25,975	3.72	41	498	0.13
64	526	0.06	55	246	0.08
China					
84	559,317	4.73	85	896,308	5.72
27	431,413	19.47	84	710,539	7.58
85	412,325	2.65	72	158,181	5.85
40	327,625	12.55	52	147,491	30.52
39	211,153	7.69	28	103,454	24.02
India					
84	140,386	1.19	71	192,231	24.02
26	66,654	71.58	29	79,185	4.22
89	41,864	83.91	23	59,754	12.29
39	37,596	1.37	27	44,947	0.24
85	29,367	0.19	03	42,106	0.09
Korea Republic					
85	412,507	2.66	85	898,182	5.73
84	175,243	1.48	84	202,685	2.16
40	109,184	4.18	39	171,923	6.52
27	81,808	3.69	72	137,417	5.08
17	64,130	8.79	29	126,333	6.73
Lao People's Democratic Republic					
87	87,248	3.49	44	60,941	15.14
27	59,420	2.68	01	5,545	30.09
85	31,315	0.20	26	2,558	1.59
84	24,256	0.21	99	1,546	0.43
22	11,289	9.34	27	1,380	0.02
Sri Lanka					
84	44,729	0.38	84	55,549	0.59
17	30,620	4.20	71	8,925	0.52
39	11,562	0.42	27	6,978	0.09
03	11,410	0.50	03	1,058	0.15
55	10,193	1.46	85	939	0.01
World					
85	15,530,512	100	85	15,678,330	100
84	11,814,331	100	84	9,369,992	100
39	2,746,243	100	27	7,548,821	100
40	2,611,080	100	72	2,703,359	100
87	2,502,229	100	39	2,638,427	100

Source: PC-TAS, United Nations 2002

Thailand-Sri Lanka

During 1996-2000, trade volume between Thailand and Sri Lanka was approximately $191.6 millions, which were around 3.5% annually increases. Thailand's total export to Sri-Lanka in 2000 was $162 millions in which main traded commodities were "Nuclear

reactors, boilers, machinery, etc", "Sugars and sugar confectionery", and "Plastics and articles thereof". Total import from Sri Lanka to Thailand in 2000 was about $76 millions, which main imported commodities were "Nuclear reactors, boilers, machinery, etc", "Pearls, precious stones, metals, coins, etc", and "Mineral fuels, oils, distillation products, etc". Few varieties of traded goods and low trade volume are the main trade obstacles between both countries. Moreover, bilateral trade agreement between both countries was still not established.

Table 2 summarizes the bilateral trade arguments above by providing the lists of top 5 major export/import commodities, based on 2-Digit Harmonized System (HS) level, between Thailand and each BAMC.

3. Methodology and Analysis

The studies to support Thailand to join members of the Bangkok Agreement should be focused on various issues. The most important issue is to consider how the Bangkok Agreement PTAs will promote trade volume and economic development between Thailand and those BAMCs. Regarding to the international trade theory, the fundamental motivation behind any regional arrangements is to improve the welfare of those member countries through a reduction or elimination of trade barriers in the region and boost trade volume. The members of the regional arrangement would enjoy the welfare gains as long as welfare improving if *Trade Creation* effect exceeded welfare-reducing *Trade Diversion* effect. The trade creation arises when domestic production in a certain industry is replaced by imports from another country, which has *more comparative advantage* in the production of that sector. More comparative advantage occurs when a country can produce output at a lower cost, which generates more efficiency and welfare gains associated with trade creation. Trade diversion, on the other hand, occurs when the reduction of both tariff and non-tariff barriers upon imports from the member countries maybe lower than the cost of other more "efficient" non-members. Diverting trade from cheaper to more expensive suppliers means that more resources are used up to purchase the same output, which is clearly costly. This would causes distortion of trade and efficiency. Therefore, the balance between trade creation and trade diversion is an important determinant of the overall benefit that Thailand should have after joining the Bangkok Agreement. One of the measurements indicating how Thailand should face trade creation and trade diversion upon acceding to the Bangkok Agreement is the Spearman's rank correlation between the Revealed Comparative Advantage (RCA)

3.1 Rank correlation between the Revealed Comparative Advantages (RCA)

Regarding to the international trade theory, the similarities of trade patterns means the similarities of comparative advantage, which is important in defining whether trading between Thailand and each member country in the Bangkok Agreement would be competitive or complementary. Countries having different comparative advantage patterns, such as labor-intensive production and capital-intensive production, and joining same trade agreement should gain potentials from trade creation. Countries with similar comparative advantage, such as labor-intensive and labor-intensive production, joining trade bloc may face trade diversion due to high gap between tariff imposed to

member countries and those to non-member countries. The Spearman's rank correlation between the Revealed Comparative Advantage (RCA)[4] was computed to measure the similarities of trade patterns between Thailand and other countries in the Bangkok Agreement. Data was obtained from PC-TAS for the year 2000 and covered product groups based on two-digit Harmonized System (HS) of trade classification. The rank correlation between Thailand and each BAMC compared to other trade partners were calculated as shown in Figure 2.

The RCA rank correlation coefficients of various Thailand's trade partners as well as the BAMCs are given along the vertical axis and the horizontal axis shows the GDP per capita as an indicator of the relative cost of production. The vertical line toward the left of the figure indicates Thailand's GDP per capita. Coefficients with negative rank correlation or coefficients closed to zero are those who do not compete directly with Thailand and may create trade for each others. The coefficients locating at higher GDP per capita compared to Thailand indicate good potential markets for trading with Thailand. Countries with fairly high (positive) rank correlation indicate similar export structures to Thailand and tend to generate less potential of trade creation. In Figure 2, the rank correlation coefficients of the BAMCs locate at the upper-left area of the figure, which means that those BAMCs, compared to other trade partners, have less potential to for Thailand, upon joining Bangkok Agreement, to benefit from trade creation. However, considering country by country within BAMCs, trading with Korea Republic is more likely to generate trade creation than trading with other member countries due to relatively low rank correlation (0.302) and higher income per capita than other member countries. Sri Lanka shows the least potential comparing to other BAMCs to generate trade creation with Thailand. Moreover, those member countries, except Korea, which have lower GDP per capita than Thailand are considered the potential competitors for Thailand due to the advantages from lower cost of production. Lao People's Democratic Republic coefficients are not shown in the figure due to unavailability of data.

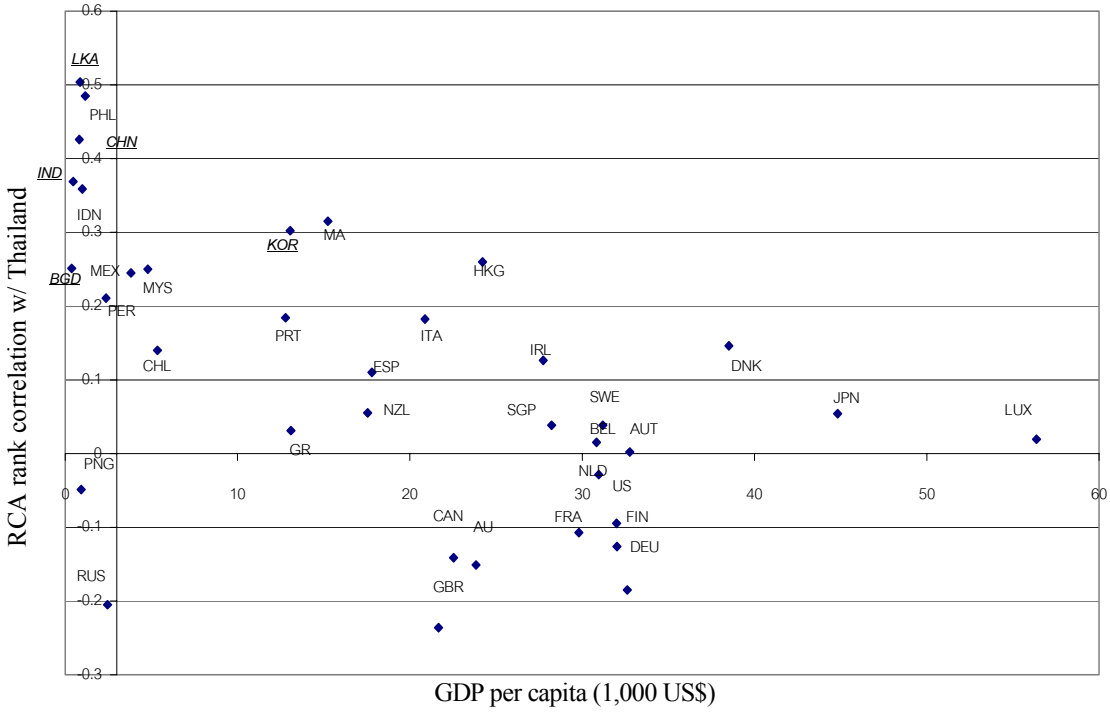
To observe for more details of export structure between Thailand and BAMCs by industry, the RCA rank correlation can be estimated as industry groups. Table 3 presents the RCA rank correlation of industry basis based on International Standard Industrial Classification (ISIC) product codes. These estimated coefficients can be more extensive to interpret the complementary and competitiveness among Thailand and BAMCs within industry basis. The result shows that trade structures between Thailand and BAMCs are somewhat similar considering high significant value of the RCA rank correlation. Nevertheless, there are some industry groups presenting significant and low coefficient value (or negative). The relatively low (or negative) and significant coefficient value determine somewhat different trade structure and can be considered as the potential sectors of Thailand to boost trade volume between those BAMCs.

However, coefficients alone do not truly determine the trade pattern between both countries unless we compare those with high export share in each industry. The estimated coefficients of RCA rank correlation shows that potential exporting industries from Thailand to the BAMCs are likely to concentrate on the same industries. For example, exports of "Textile, Wearing Apparel and Leather Industries" (ISIC-32) from

[4] The Revealed Comparative Advantage (RCA) is computed as RCA = $(X_{IK}/\Sigma X_K)/X_{IW}/\Sigma X_W)$ where X_{IK} is the value of sector I export to country K, and X_{IW} is total value of world export of sector I

Thailand are potential and complementary for China, India, and Korea in which this industry cover around 10-11 percents of total export. Another potential sector is "Manufacture of Chemical, Petroleum, Coal, Rubber and Plastic Product" (ISIC-35) in which the coefficient values are negative for China and relatively low for Bangladesh. Unlike other BAMCs, trade structures between Thailand and Sri Lanka are complementary on "Manufacture of Paper and Paper Products, Printing, and Publishing" (ISIC-34) and "Basic Metal Industries" (ISIC-37), but both industries cover low share of Thailand's export volume.

Figure 2: Thailand's RCA Rank Correlation with partner countries



Source: Computed from PC-TAS, United Nations 2002. GDP per capita from World Bank

Table 3: RCA Rank Correlation between Thailand and Bangkok Agreement Member Countries by Industry Basis.

Countries	ISIC1	ISIC2	ISIC31	ISIC32	ISIC33	ISIC34	ISIC35	ISIC36	ISIC37	ISIC38	ISIC39
Bangladesh (1998)	0.28**	0.00	0.09	0.27**	0.00	0.04	0.11**	0.10	0.08	0.14**	0.14
China (2000)	0.52**	-0.02	0.43**	0.17**	0.65**	0.37**	-0.09**	0.11	0.19**	0.33**	0.18**
India (1999)	0.43**	0.16	0.24**	0.19**	0.23	0.25**	0.06	0.11	0.19**	0.25**	0.14**
Korea (2000)	0.42**	0.28**	0.37**	0.14**	0.65**	0.51**	0.40**	0.25**	0.36**	0.30**	0.09
Sri Lanka (2000)	0.36**	0.50	0.24**	0.39**	0.38**	0.10*	0.30**	0.31**	0.13**	0.19**	0.17*
% Share of Export (1998)	8.10	0.80	13.18	12.64	1.76	1.20	8.08	1.50	2.50	44.40	4.16
% Share of Export (1999)	7.08	0.93	12.69	11.50	2.00	1.30	8.80	1.70	1.90	45.04	4.07
% Share of Export (2000)	6.75	1.45	10.56	10.48	2.02	1.26	10.51	1.71	2.19	46.91	3.71

However, the RCA rank correlation estimated above might not fully predict which potential industry that Thailand should focus on. An alternative measurement can be investigated further to determine whether the value of trade between two countries is greater or smaller than would be expected based on their importance in world trade. The estimated "Trade Intensity Index" (TII) index shown in next section help on determining the potential as well as the below-potential industries that Thailand should focus on upon its acceding to the Bangkok Agreement's partner.

3.2. Trade Intensity Index (TII)

Another way to measure the effects of changes in trade patterns between Thailand and the BAMCs is to calculate a Trade Intensity Index. Trade Intensity Index (TII) is defined as the share of one country's exports going to a partner divided by the share of world exports to the partner.[5] An index of more (less) than unity indicates a bilateral trade flow that is larger (smaller) than expected, given the partner country's importance in world trade. First, the TII is calculated for each BAMC, then the values are compared with the RCA rank correlation based on industry group (ISIC). The industries, which indicate both high value of TTI and low significant value of RCA rank correlation, should be determined as the "potential industries" that Thailand would gain from joining the Bangkok Agreement. The industries that indicate not only low significant value of RCA rank correlation but also relatively low value of TII (less than unity) are considered the below-potential industries that they can be raised for further negotiations upon becoming a member.

Table 4 presents the estimated TII index of Thailand's export to the BAMCs. Those index shows that the export intensity from Thailand to those country members are relatively high (greater than unity) compared to the global standard. With relatively low RCA rank correlation and high value of TII, the potential sectors are different for each member country. Anyhow, Textile, Wearing Apparel and Leather Industries (ISIC-32) are the potential industry groups that Thailand should have trade creation from having the preferential trade agreement with Bangladesh, China, India, and Korea. The other potential sectors are Manufacture of Chemicals and Chemical, Petroleum, Coal, Rubber and Plastic Products (ISIC-35), Basic Metal Industries (ISIC-37), and Manufacture of Fabricated Metal Products, Machinery and Equipment (ISIC-38). Agriculture (ISIC-1), Mining (ISIC-2), Manufacture of Food, Beverage and Tobacco (ISIC-31) and other manufacture industries (ISIC-39), on the other hand, indicate relatively low intensity value, which considers the *below-potential* exported industries from Thailand to those BAMCs. Anyhow, to ensure whether which sector; agriculture or manufacture, would be more advantageous from the Bangkok Agreement, Thailand's export demand functions, classified into two sectors (agriculture and manufacturing), are estimated to observe price/income elasticity as well as its sensitivity on affecting trade volume after joining the trade bloc.

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[5] Trade Intensity Index (TII) is calculated as: $TII_{ij} = (x_{ij}/X_{it})/(x_{wj}/X_{wt})$ where x_{ij} and x_{wj} are the values of country *i*'s exports and of world exports to country *j* and where X_{it} and X_{wt} are country *i*'s total exports and total world exports, respectively. (See Hoekman, Mattoo, and English; 2002)

Table 4: Trade Intensity Index (TII) coefficients of Thailand exports to the Bangkok Agreement Member Countries by Industry Basis.

Countries	ISIC1	ISIC2	ISIC31	ISIC32	ISIC33	ISIC34	ISIC35	ISIC36	ISIC37	ISIC38	ISIC39
Bangladesh (1998)	1.73	1.61	0.09	2.22	2.24	8.04	6.49	2.23	7.52	1.96	0.19
China (2000)	4.39	6.99	0.93	1.06	5.30	15.88	2.82	2.96	2.92	3.52	0.36
India (1999)	0.20	0.17	1.76	3.22	8.68	3.79	4.83	4.56	2.70	1.60	0.09
Korea (2000)	1.35	0.40	0.95	2.90	12.17	16.16	2.66	5.45	1.71	2.66	2.19
Sri Lanka (2000)	1.26	1.50	1.80	1.25	2.92	2.58	4.89	8.07	8.90	4.09	0.18
% Share of Export (1998)	8.10	0.80	13.18	12.64	1.76	1.20	8.08	1.50	2.50	44.40	4.16
% Share of Export (1999)	7.08	0.93	12.69	11.50	2.00	1.30	8.80	1.70	1.90	45.04	4.07
% Share of Export (2000)	6.75	1.45	10.56	10.48	2.02	1.26	10.51	1.71	2.19	46.91	3.71

Source: Computed from PC-TAS, United Nations 2002

3.3. Export Demand Functions

Possible effects of Bangkok Agreement on trade flows are investigated in this section using simple gravity model. The model is based on the argument that trade flows between two countries must be related to economic masses (GDP, Price), geographical distance, and regional integration (Bangkok Agreement). Trade volumes will vary inversely with the distance since longer distances will increase the transportation costs in term of freight charges and shipping duration and it should be positively depended on income effect. The sign of regional integration effect can be either positive or negative depends on whether or not the regional bloc affects on increasing trade volume of exporting country. Based on Sayan (1998) and Wall (1999), the pooled regression of gravity trade model can be estimated the following form:

$$log\ (x_{it}) = \gamma_0 + \gamma_1 log(x_{i,\,t-1}) + \gamma_2 log(p_{it}) + \gamma_3\ log(GDP\text{-}T_t) + \gamma_4 log(GDP_{it}) +$$

$$+ \gamma_5 log\ (Distance) + \gamma_6 (BA) + \gamma_7 (BA\ .\ p_{it}) + \varepsilon_{it}$$

Where, x_{it} is the value of real export from Thailand to partner countries in year t classified in two sectors: "Agricultural" and "Manufacturing". $x_{i,t-1}$ is its lag term. $GDP\text{-}T_t$ is the real GDP of Thailand in year t; GDP_{jt} is the real GDP of Thailand's trade partners in year t, p_{it} is the export price of Thailand relative to price of its partners. To be able to estimate any trade creation/diversion effect, a dummy variable BA was introduced to distinguish the Bangkok Agreement members from other countries in the sample. This dummy variable accounts effect of Bangkok Agreement trade preferential on trade flows. If γ_6 is positive and significant, trading with the BAMCs generate higher export volume of Thailand. The transformed independent variable $BA\ .p_{it}$ is created to determine the export price elasticity of Thailand upon joining the Bangkok Agreement. The time period t is the annual data under consideration to 1996-2000. The set of reporting countries, j, are the twenty five trade partner countries that are such the members in the Preferential Trade Arrangements with Thailand; APEC, AFTA, Bangkok Agreement, and etc.). This estimation is carried out by pooled cross-sectional and time series data. Since gravity model parameters are typically estimated using cross-sectional data alone, this employment of gravity pooled regression should enable the model to capture the possible trade effects resulting from the dynamic nature.

Table 5 reports the estimation of income elasticity that seems to show its correct sign ($\gamma_3 > 0$, and $\gamma_4 > 0$) and significance for both agriculture and manufacturing industry. Price

elasticity is not significant in the agriculture sector but is significant in the manufacture sector. The absolute value of price elasticity is more than unity in which it means that the manufacture export volume is very sensitive with changes of trading prices or, in another word, the manufacture export from Thailand are very substitutable in the world market. This is thus the wise prediction to support that imported price reduction from lower tariff after joining trade agreement should increase Thailand's export volume and generate trade creation, especially in the manufacture sector that Thailand have comparative advantage with. As expected, Thailand's GDP independent variable and trade partners' GDP variable are both positive and significant affected to export volume.

Table 5: Pooled Data Estimation of Gravity Model: Real Export of Agriculture and Manufacturing: 1996-2000

Variables	Agriculture	Manufacturing
$log(x_{i,\ t-1})$	0.444***	0.782***
	(4.40)	*(8.88)*
$log(p_{it})$	3.839	-2.550*
	(1.03)	*(-1.37)*
$log(GDP\text{-}T_t)$	8.577**	8.814***
	(1.80)	(2.94)
$log(GDP_{jt})$	0.404***	0.143*
	(2.40)	*(1.43)*
log (Distance)	-0.915***	-0.904***
	(-2.47)	*(-3.89)*
BA-Dummy	6.002	3.220*
	(1.22)	*(1.30)*
BA x *log* (p_{it})	-6.124*	-3.499*
	(-1.34)	*(-1.51)*
Constant	-229.645**	-231.162***
	(-1.84)	*(-2.97)*
Adjusted R^2	0.40	0.69
Observations	120	120

The t-statistics are in parentheses. *, **, and *** show the significant level at 0.2, 0.1, and 0.05 respectively.

The long-run price and income elasticity of export demand, respectively, can be computed as $\gamma_2/1\text{-}\gamma_1$, $\gamma_3/1\text{-}\gamma_1$, and $\gamma_4/1\text{-}\gamma_1$. The estimated coefficients for distance variable (γ_5) is negatively correlated, which is intuitively explain that trade volume is inversely related to the distance between countries. To consider the effect trade creation from the preferential trade agreements, the estimated coefficients of dummy variable (γ_6) have positive sign, which can be a good prediction to support the creation of trade upon Thailand joining the Bangkok Agreement member.

Even though the dummy variable coefficients do not have strong significant effect, the t-statistics are remained considerably high to support this prediction. The last estimated coefficients (γ_7) predict that the Thailand's export price elasticity would be lower for trading with the BAMCs in which this effect would be stronger in the agriculture sector than in the manufacturing sector. This primary result, therefore, explains that the gains from joining Bangkok Agreement and receipt of trade barrier elimination will draw in the agriculture sector more than in manufacturing sector. This then support the above arguments in that, besides those in manufacture sector, agriculture export degree volume

will be significantly boosted from trading with those BAMCs. The gravity export demand function estimated above, therefore, shows the supportive results that joining the Bangkok Agreement should somewhat benefit Thailand in term of increasing trade volume as well as earn higher welfare from that trade creation among those member countries[6].

One of the direct measures on evaluating trade flows between Thailand and the BAMCs is to compare the bilateral traded industries between both countries to those that offered as the current concession lists. The analysis should be discussed based on two directions of trade flow: Thailand's export side and Thailand's import side. Explaining in the scope of trade creation and trade diversion, matching study between those of merchandise trade and those of concession lists should provide the strong conclusion that Thailand should possibly gain upon joining the agreement. Starting with the export side study, firstly, we identify that the active imported industries of the BAMCs do not extensively cover all sectors in the concession lists. The Column I and II of the below table represents that each BAMC, in reality, imported a fewer active sectors than those they offered under the concessions. The products offered concessions have been at 6-8-digit level of HS classification. Based on the six-digit HS classification, approximated two-third of a number of concessions offered to all countries is, in reality, actively imported. Those remaining items can be considered the potential channels for Thailand to directly gain from boosting its export upon the decision to join. Second, matching products of BAMC's import from Thailand to those in the concession lists, this, as in Column III, shows that items under concessions imported by the BAMCs are less supplied from Thailand. Bangladesh imported only 2 industries compared to 48 of its active imported industries under the concessions. China has imported the largest number of industries, 139 industries out of 402 active industries under the concession import. The remaining countries; India, Korea Republic, and Sri Lanka, have imported 100 industries, 167 industries, and 137 industries respectively. These are, however, much fewer than what they really import from all over the world under the concession lists and should be the potential sectors that Thailand should aim to promote and gain benefit from those free trade agreement. The value in term of million US$ are the calculated, based on the current value of five-year average during the period of 1996-2000.

The possible gains for Thailand on acceding to the Bangkok Agreement come from two channels. The first channel is from the industries that the BAMCs have already imported from Thailand, which are, also, under the concession lists. The second channel are concentrated the industries that BAMCs have not imported from Thailand yet but are which Thailand have currently exported to the world. Regarding to the first channel in which BAMCs already imported from Thailand under the concessions, the possible gains are computed subjected to the difference of import prices between the MFN tariff rate and Bangkok Agreement rate in which the BAMCs have imposed. The traded price elasticity are denoted as two which implies high substitution and competitiveness of Thailand's products in the global contents. Then, traded volume among the industries that BAMCs already imported from Thailand under the concessions should have

[6] Based on a current research of Soloaga and Winters (2001), the preferential trade agreements may decrease trade volume among those member countries depending on the types of trade depending on various criteria. These gravity model export demand functions estimated in this paper then do not give the conclusive results but, at least, show the preliminary results.

expected to increase, in term of millions US$, as shown in Column IV of the table. This is subjected to the condition that Thailand accept the concession lists that the Bangkok Agreement offered and have decided to join the trade bloc and those value are based on the current value, which should be a reliable proxy for future gains. The proxy values, for example, explain that Thailand should have the most benefit on joining the China's concessions in which the possible gain is approximated $699.24 millions per year. Korea's concessions are expected to provide the second most benefit, which are about $ 97.81 millions per year. India and Sri Lanka' concessions provide the moderate gains, which are about, respectively, $ 18.82 millions and $16.05 millions per year. Bangladesh provides the least amount of expected gains to Thailand based on the current imported items under the concessions, which are about $ 2.62 millions per year.

Gains from the second channels should possibly come from the items that Thailand, so far, exported to the world but were not imported by the BAMCs even those items are concentrated on the Bangkok Agreement's concession lists. Those industries, as in the Column V of the table, are the potential that Thailand should expect for gains if they join the trade bloc. Benefit on joining the Bangkok Agreement membership would be enhanced for Thailand on possible exporting more items that have comparative advantage to those member countries. The methodology used in this section is to match those concession list items (at 6-digit HS classification) in which Thailand have exported to the world but not bilaterally to the BAMCs. While doing this match making, the formal RCA index of Thailand are also used to ensure that those possible potential industries will be focused on what Thailand have comparative advantage with. More robustly, the matching industries are selected among those not only have RCA indicators greater than one, but also present the increasing amount of the RCA number[7]. The possible gain volumes, in term of $ millions, are based on the current value averaged export volume between Thailand and those BAMCs. It should be, therefore, a reasonable proxy of prediction. The column 5 of table reports that the possible gains from Thailand on the second channels are the most of 35 sectors for China, which approximately worth $ 155.12 millions. Korea and Sri Lanka generates the moderate value of gains in which a number of potential exported industries are 15 ($28.98 millions) and 23 ($ 25.05 millions) respectively. A number of potential industries of Thailand's export are the least for Bangladesh, which are 8 items that approximately counted $ 5.31 millions.

[7] Two RCA index are computed in two period of time, 1996 and those in recent data in PC-TAS (1998, 1999, and 2000). The greater value of recent year data than those of 1996 data, and also greater than one, represents the robustness of comparative advantage on sectors that Thailand have in the global market.

Table 6: A Possible Number of Products flowed from Thailand to the Bangkok Agreement member countries under Concessions: 6-digit HS classification

Bangkok Agreement Member Countries	I Concessions	II Active World Import under Concessions	III Active Import from Thailand under Concessions	IV Possible Gains on Industries that are already imported from Thailand	V Possible Gains of Potential Industries of Thailand's Export
Bangladesh	129[a]	48	2	2	8
- $ Millions		477.30	2.61	2.62	5.31
China	739[a]	402	139	139	35
- $ Millions		26,291.65	670.79	699.24	155.12
India	188	100	21	21	11
- $ Millions		392.82	16.70	18.82	7.64
Korea	214[b]	167	63	63	15
- $ Millions		3,272.62	96.29	97.81	28.98
Sri Lanka	288[b]	137	22	22	23
- $ Millions		317.17	16.04	16.05	25.03

Note: [a] at 8-digit HS classification
[b] at 6-8 digit HS classification

Acceding to Bangkok Agreement will benefit Thailand if there are some negotiations in the future. The first negotiation is to deal with the potential industries that Thailand would gain upon joining the Bangkok Agreement members. Moreover, the potential of the Bangkok Agreement in term of increase member countries should lead to the success of this regional integration that would benefit Thailand for acceding as a member. The prospective members and potential industries that Thailand should aim for negotiation will be discussed in the next section.

4. Potential to increase the Prospective Members and Further Negotiations.

The potentials of PTAs are likely to depend on finding the best member countries. The extension that Bangkok Agreement would induce other countries in the Asia Pacific to join the membership should benefit remaining members if those prospective incoming members would help on generating economic convergence and divergence between member countries. There are political aspects as well as economic aspects determining desirable PTA members. Only the latter are discussed here. A few criteria are suggested, namely dissimilarity of comparative advantage, market size, and tariff level. Each of them is mainly discussed in Thailand's perspective.

Schiff and Winters (2002) discuss a strong preference for North-South regional integration over South-South integration for developing country. Thailand, as a developing country (the South country), should benefit from joining the Bangkok Agreement if members or prospective incoming partners are from the developed world. The trade structures of these northern countries are somewhat different from Thailand, regarding to the RCA rank correlation implications (Figure 2) and it should generate trade creation among member countries. However, Bangkok Agreement was established with the objectives to promote economic development and trade expansion

among "developing" member countries of UNESCAP, the development of North-South trade bloc may not follow the Bangkok Agreement's goal.

Even with a similarity in overall comparative advantage among developing countries, there are still rooms to gain by a careful examination at sectoral level. Ideally, a sector that has trade potential would be one that has a low rank correlation of RCA, low trade intensity, and high share of exports. Tentatively, sector with compromise trade potential would be those analyzed in section 3.2.

Market size is the second measure for determining desirable FTA partners. China and India make the Bangkok Agreement very attractive in the combined population of member countries. A large market size may create economy of scale, and induce investment, from both domestic and foreign. Another proxy of market size includes GDP. The combined GDP of current members may not add up to those of Japan but the GDP growth of members, especially China and India, may offer a good prospect for the agreement. From the estimated export demand functions in section 3.3, Thailand's exports are positively affected by GDP growth of her partners. Having countries with good prospect in economic growth as well as economic stability to join the Bangkok Agreement should benefit Thailand on boosting trade volume between those prospective countries in the future.

The gains from joining a PTA are also based on the tariff level. A high tariff barrier to non-member country is a good reason for a country to apply for membership. As mentioned in section 1, Thailand have been facing high tariff and non-tariff barriers imposed by China, India, and Korea Republic.

In brief, the Bangkok Agreement offers a few good reasons for Thailand to join. Attractive factors are the sheer market size, good growth prospect of existing members, and gain from tariff reduction. Nevertheless, given proliferating preferential trading agreements, the Bangkok Agreement is not as attractive as it were alone. Agreements that may distract Thailand from the Bangkok Agreement are the effect called the "Spaghetti Bowl" in which free trade agreements between Thailand and those BAMCs have been already signed named as different agreements. Those countries in the Bangkok Agreement that already signed for free trade negotiations are Thailand-India, Thailand-China, ASEAN + China, ASEAN+3 (China, Japan, Korea). With limited resources, Thailand has to prioritize all potential agreements. It is up to political aspects as well as economic aspects determining order of PTA attractiveness.

5. Conclusions

The Bangkok Agreement is one of the oldest preferential trading agreements in Asia-Pacific in which it has had great potential to boost trade between member countries. However, the intra-member trade in the Bangkok Agreement region has remained relatively small. This, therefore, attributes to the limited number of concessions for success of this trade bloc. China's recent accession to the agreement has provided the incentives for other prospective countries to join. Nevertheless, the decision of Thailand for joining the Bangkok Agreement is still under reviewed and should be studied more for its possible tradeoffs. This paper tries to analyze the possible potential for Thailand on accessing this trade agreement by employing both quantitative and qualitative discussions. The estimates of RCA rank correlation show that trade structure between

Thailand and those BAMCs are quite similar for each other so that it implies the less likely chance of trade creation within the region. However, by categorizing into each sector and comparing the RCA rank correlation with the Trade Intensity Index (TII), Thailand has comparative advantage and potential of trading with "Textile, Wearing Apparel and Leather Industries", "Manufacture of Chemical, Petroleum, Coal, Rubber and Plastic Product", "Manufacture of Paper and Paper Products, Printing, and Publishing" and "Basic Metal Industries". For these industries, trade creation can be expected to exist within the regional trade bloc. The Agriculture sector, Mining sector, Manufacture of Food, Beverage, and Tobacco, and other industries such as Pearls and precious stones, Furniture, and other accessories are still the below potential industries in which Thailand should aim for further negotiations. Then, the gravity model of Thailand's export demand functions have been estimated to convey the analysis whether Bangkok Agreement would lead to the possibilities trade volume increment. The estimated coefficients of the gravity model support the wise prediction that export volume of Thailand should be accrued upon joining the Bangkok Agreement. Finally, increasing a number of member countries should enhance the Bangkok Agreement's bargaining power to other regional trade blocs. Prospective countries in the Asia Pacific, both in developed and developing countries, which have consistence growth of GDP, economic stability, and advantage of location, are expected to join the trading agreement in the future.

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Appendix

Table A: The International Standard Industrial Classification (ISIC), Rev. 2

ISIC Rev.2
1 - Agriculture, Hunting, Forestry and Fishing
11 - Agriculture and Hunting
12 - Forestry and logging
13 - Fishing
2 - Mining and Quarrying
21 - Coal Mining
22 - Crude Petroleum and Natural Gas Production
23 - Metal Ore Mining
29 - Other Mining
3 - Manufacturing
31 - Manufacture of Food, Beverages and Tobacco
32 - Textile, Wearing Apparel and Leather Industries
33 - Manufacture of Wood and Wood Products, Including Furniture
34 - Manufacture of Paper and Paper Products, Printing and Publishing
35 - Manufacture of Chemicals and Chemical, Petroleum, Coal, Rubber and Plastic Products
36 - Manufacture of Non-Metallic Mineral Products, except Products of Petroleum and Coal
37 - Basic Metal Industries
38 - Manufacture of Fabricated Metal Products, Machinery and Equipment
39 - Other Manufacturing Industries

Table B: The Two-Digit Harmonized System (HS)

HS	Product Descriptions	HS	Product Descriptions
01	Live animals	02	Meat and edible meat offal
03	Fish, crustaceans, molluscs, aquatic invertebrates nes	04	Dairy products, eggs, honey, edible animal product nes
05	Products of animal origin, nes	06	Live trees, plants, bulbs, roots, cut flowers etc
07	Edible vegetables and certain roots and tubers	08	Edible fruit, nuts, peel of citrus fruit, melons
09	Coffee, tea, mate and spices	10	Cereals
11	Milling products, malt, starches, inulin, wheat gluten	12	Oil seed, oleagic fruits, grain, seed, fruit, etc, nes
13	Lac, gums, resins, vegetable saps and extracts nes	14	Vegetable plaiting materials, vegetable products nes
15	Animal,vegetable fats and oils, cleavage products, etc	16	Meat, fish and seafood food preparations nes
17	Sugars and sugar confectionery	18	Cocoa and cocoa preparations
19	Cereal, flour, starch, milk preparations and products	20	Vegetable, fruit, nut, etc food preparations
21	Miscellaneous edible preparations	22	Beverages, spirits and vinegar
23	Residues, wastes of food industry, animal fodder	24	Tobacco and manufactured tobacco substitutes
25	Salt, sulphur, earth, stone, plaster, lime and cement	26	Ores, slag and ash
27	Mineral fuels, oils, distillation products, etc	28	Inorganic chemicals, precious metal compound, isotopes
29	Organic chemicals	30	Pharmaceutical products
31	Fertilizers	32	Tanning, dyeing extracts, tannins, derivs,pigments etc
33	Essential oils, perfumes, cosmetics, toileteries	34	Soaps, lubricants, waxes, candles, modelling pastes
35	Albuminoids, modified starches, glues, enzymes	36	Explosives, pyrotechnics, matches, pyrophorics, etc
37	Photographic or cinematographic goods	38	Miscellaneous chemical products
39	Plastics and articles thereof	40	Rubber and articles thereof
41	Raw hides and skins (other than furskins) and leather	42	Articles of leather, animal gut, harness, travel goods
43	Furskins and artificial fur, manufactures thereof	44	Wood and articles of wood, wood charcoal
45	Cork and articles of cork	46	Manufactures of plaiting material, basketwork, etc.
47	Pulp of wood, fibrous cellulosic material, waste etc	48	Paper & paperboard, articles of pulp, paper and board
49	Printed books, newspapers, pictures etc	50	Silk
51	Wool, animal hair, horsehair yarn and fabric thereof	52	Cotton
53	Vegetable textile fibres nes, paper yarn, woven fabric	54	Manmade filaments
55	Manmade staple fibres	56	Wadding, felt, nonwovens, yarns, twine, cordage, etc
57	Carpets and other textile floor coverings	58	Special woven or tufted fabric, lace, tapestry etc
59	Impregnated, coated or laminated textile fabric	60	Knitted or crocheted fabric
61	Articles of apparel, accessories, knit or crochet	62	Articles of apparel, accessories, not knit or crochet
63	Other made textile articles, sets, worn clothing etc	64	Footwear, gaiters and the like, parts thereof
65	Headgear and parts thereof	66	Umbrellas, walking-sticks, seat-sticks, whips, etc
67	Bird skin, feathers, artificial flowers, human hair	68	Stone, plaster, cement, asbestos, mica, etc articles

HS	Product Descriptions	HS	Product Descriptions
69	Ceramic products	70	Glass and glassware
71	Pearls, precious stones, metals, coins, etc	72	Iron and steel
73	Articles of iron or steel	74	Copper and articles thereof
75	Nickel and articles thereof	76	Aluminium and articles thereof
		78	Lead and articles thereof
79	Zinc and articles thereof	80	Tin and articles thereof
81	Other base metals, cermets, articles thereof	82	Tools, implements, cutlery, etc of base metal
83	Miscellaneous articles of base metal	84	Nuclear reactors, boilers, machinery, etc
85	Electrical, electronic equipment	86	Railway, tramway locomotives, rolling stock, equipment
87	Vehicles other than railway, tramway	88	Aircraft, spacecraft, and parts thereof
89	Ships, boats and other floating structures	90	Optical, photo, technical, medical, etc apparatus
91	Clocks and watches and parts thereof	92	Musical instruments, parts and accessories
93	Arms and ammunition, parts and accessories thereof	94	Furniture, lighting, signs, prefabricated buildings
95	Toys, games, sports requisites	96	Miscellaneous manufactured articles
97	Works of art, collectors pieces and antiques	99	Commodities not elsewhere specified