

Regional Enlargement and Its Impact on Trade:

An Analysis on BIMSTEC+Japan

Centre for Studies in
International Relations and Development



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Abstract: The main purpose of this paper is to understand the impact of the enlargement of BIMSTEC, through incorporation of Japan, on trade, and to investigate empirically whether or not BIMSTEC-Japan Economic Cooperation increases intra-regional flow of trade in goods. The study finds that there is a strong potential for increasing intra-regional trade, even though the countries in BIMSTEC and Japan possess comparative advantage in similar commodities. Deficiency in domestic capital has enforced the BIMSTEC countries to rely on imported capital goods and technology from industrialised countries. The regional exports largely consist of raw materials and traditional products like textile and garments, whereas the imports of the region are mainly capital goods and high-tech products. In this scenario, this paper suggests that Japan has an important role to play in strengthening resource base of BIMSTEC countries and trade capacity. From Japan's perspective, Japan can substantially extend its economic space and its technology through partnership with the firms in BIMSTEC countries, particularly in knowledge-intensive areas, such as biotechnology, pharmaceuticals, IT, aero-space and certain manufacturing industries. This underlines the importance of cooperation and collaboration between BIMSTEC and Japan.

1. Background

Bay of Bengal Initiative for Multi-sectoral Technical and Economic Cooperation (BIMSTEC)¹ was formed in 1997 as a sub-regional grouping. Currently the BIMSTEC region comprises of Bangladesh, India, Myanmar, Sri Lanka, Thailand, Nepal, and Bhutan.

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This regional grouping was formed to provide trade and technological cooperation among its members in the areas of trade and investment, tourism, transport and communication, technology, energy, and fisheries.

Despite its vast resource endowments, intra-BIMSTEC trade is very limited (RIS, 2004; De, 2004; Bhattacharya, 2006). In some studies it was indicated that by involving external trade partner(s), who is having substantial economic engagement with regional grouping(s), BIMSTEC as a whole (or some of its individual members) might generate more welfare generating regional trade activities with the increased trade and economic complementarities.² Japan is one such investment and trade partner of BIMSTEC countries.

The substantial influence created by Regional Trading Agreements (RTAs) over world trade and their impact on members and non-members have been the subject of discussion of many researchers. The core discussion has been centered around the trade creation and trade diversion effects. Many researchers stated only the beneficial effects of Regional Free Trade Cooperation in earlier studies. For example, Viner in 1950 first pointed out the reverse effect of membership of a country in an RTA.³ Within the Regional Free Trade area, a country will get benefited by importing commodities which are once highly protected in domestic market from a lower-cost member. This is known as the trade creation effect. On the other hand, 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 Regional Free Trade area and this effect is termed as the trade diversion effect. Due to this trade diversion effect, many studies have been carried out to observe if it is worth to form or participate in an RTA.⁴

The main purpose of this paper is to understand how much trade the BIMSTEC countries can generate if Japan is incorporated as a member, and to investigate whether or not the inclusion of the latter will help BIMSTEC to enhance intra-BIMSTEC trade, which is presently very low.

The paper is organised as follows. Section 2 deals with the trends in international trade of the BIMSTEC countries and Japan in order to determine their performance in international trade. Section 3 presents trade composition of the BIMSTEC countries and Japan. Section 4 analyses bilateral trade in BIMSTEC and that with Japan, respectively. Volume of intra-BIMSTEC trade is dealt in Section 5. Section 6 deals with some popular trade indicators and indices to examine the current trade scenario in BIMSTEC+Japan. Policy implications and conclusions are drawn in Section 7 and 8, respectively.

2. Growth of Merchandise Trade

To understand the trends in merchandise trade of BIMSTEC countries and Japan, a detailed analysis of the trade volumes for each of the BIMSTEC countries and Japan has been carried out for the period 1991 to 2004. Table 1 shows BIMSTEC countries trade with the sub-region, as percentage of their world exports and imports. It is evident from this table that the export share of Japan and all BIMSTEC countries except Myanmar increased in 2004, compared to 1991.

In general, BIMSTEC countries are now conducting more trade within the sub-region. For example, about 38 percent of Nepal's export to world is conducted in BIMSTEC. Myanmar and Sri Lanka, with 15

Table 1: Trade with BIMSTEC (%)

	1991		2001		2004	
	Export	Import	Export	Import	Export	Import
Bangladesh	1.41	7.79	0.81	14.89	1.68	16.93
India	4.35	0.70	5.93	2.57	6.49	2.11
Myanmar	33.62	17.88			14.80	
Sri Lanka	1.58	10.63	2.49	12.61	7.26	19.09
Thailand	0.91	3.06	1.91	2.50	2.17	13.13
Nepal	22.95	35.74			37.81	
Japan	3.71	3.25	3.65	3.73	4.28	3.79

Note: Represents in individual country's exports and imports to BIMSTEC as percentage shares of country's world exports and imports respectively

Source: Calculated based on UNCOMTRADE

and 7 percent, respectively, come next. Apparently, in terms of trade, Bangladesh is least attached to BIMSTEC; it had traded only 1.68 percent of her world exports with BIMSTEC countries in 2004. Japan's trade engagement, both in exports and imports, with BIMSTEC countries also enlarged during 1991 to 2004. Therefore, it may be concluded that the merchandise trade attachment of Nepal with BIMSTEC is maximum, followed by Myanmar, Sri Lanka, India, Japan, Thailand and Bangladesh. In terms of import share, Sri Lanka, Bangladesh and Thailand possess greater attachment to BIMSTEC.

Foregoing analysis indicates a sizeable improvement in the growth rate of exports to BIMSTEC by its individual members. In particular, rate of growth of exports in Bangladesh, India and Japan to BIMSTEC vis-à-vis world increased during 2001 to 2004, compared to the period 1991 to 2000 (see, Table 2). However, Thailand's growth in export to BIMSTEC declined in the same period. In case of import from BIMSTEC, the growth rate declined in Bangladesh and India, in contrast to moderate increase in Japan and a substantial rise in Thailand.

It is evident from the Table 2 that during 1991-2000, in cases of Bangladesh, India and Japan, the annual growth of export to BIMSTEC was lower than their exports to world, whereas the opposite was the case in Thailand and Nepal. During 2001-2004, exports from Bangladesh, India and Japan along with Sri Lanka and Thailand to BIMSTEC grew at much faster rate than that of their exports to world. Rate of growth of imports of Bangladesh, India, Nepal and Japan from BIMSTEC during 1991-2000 was much higher, compared to the same of their imports from the world. In contrast, Thailand exhibited negative average annual growth in import from BIMSTEC, which was much lower than the country's import from the world during the period 1991 to 2000. The annual growth rate in import from BIMSTEC in cases of Bangladesh, Japan and Sri Lanka continued to remain higher than their annual growth rate of import from the world during 2001 to 2004. In Thailand, the annual growth rate in import from BIMSTEC during 2001 to 2004 was much way above than the country's import from the world, whereas the opposite was the trend in India whose annual growth

Table 2: Growth in Exports and Imports in BIMSTEC and Japan (%)

	Average Annual Growth Rate: 1991-2000				Average Annual Growth Rate: 2001-2004			
	Global Exports	BIMSTEC Exports	Global Imports	BIMSTEC Imports	Global Exports	BIMSTEC Exports	Global Imports	BIMSTEC Imports
Bangladesh	30.96	23.23	18.50	30.67	12.55	61.70	6.41	11.86
India	15.20	22.18	18.23	63.46	21.85	27.07	28.89	17.82
Mynmar	28.22		20.44		7.56		-4.06	
Sri Lanka	19.25		11.48		6.51	83.03	11.16	34.04
Thailand	15.89	49.70	7.19	-1.50	16.65	23.48	17.96	236.29
Nepal	35.22	69.12	18.41	21.20	0.86		8.97	
Japan	5.82	5.37	6.70	8.71	13.41	21.52	10.07	10.79

Source: Calculated based on UNCOMTRADE

rate in import from BIMSTEC was lower, compared to the country's import from the world.

Table 3: Shares of Export and Import in Trade with BIMSTEC in 2004 (%)

	Export Share	Import Share
Bangladesh	45.69	54.31
India	43.28	56.72
Myanmar	53.62	46.38
Sri Lanka	41.93	58.07
Thailand	50.53	49.47
Bhutan	38.89	61.11
Nepal	28.79	71.21
Japan	55.45	44.55

Source: Based on UNCTAD

Let's try to understand the export and import compositions of these countries for their trade with BIMSTEC. This is captured in Table 3. Apparently, Japan and Myanmar comparatively exported more to BIMSTEC, whereas Bhutan, Nepal, Sri Lanka, India and Bangladesh imported more from BIMSTEC, compared to their exports to the sub-region. Among them, Thailand's trade with BIMSTEC is found to be more or less balanced.

In view of above, we now attempt to classify the trade structure of each of BIMSTEC countries and also their bilateral trade compositions.

3. Trade Structure

The trade structure of the BIMSTEC countries and Japan considers 2-digit HS for the year 2003 (see, Tables 4 and 5).⁵ India's major imports from BIMSTEC were mineral fuels, mineral oils and products of their distillation (27); natural or cultured pearls, precious stones (71); machinery and mechanical appliances and parts thereof (84); electrical machinery and equipment and parts thereof, sound recorders etc. (85) and organic chemicals (29). The top five commodities India

exported to BIMSTEC were natural or cultured pearls, precious or semi-precious stones (71); articles of apparel or clothing accessories knitted or crocheted (61); articles of apparel or clothing accessories, not knitted or crocheted (62) and organic chemicals.

For Bangladesh, the major imported goods from BIMSTEC were cotton (52), animal or vegetable fats and oils (15), cereals (10) among others, while those for exports were fish and crustaceans, molluscs and other aquatic invertebrates (63); other vegetable textile fibres, paper yarn and woven fabric of paper yarn (53); raw hides and skins (other than fur skins) and leather (41).

Table 4: Top 10 Import Items (2-digit HS) of BIMSTEC Countries and Japan in 2003

Bangladesh	India	Myanmar	Sri Lanka	Thailand	Nepal	Japan
52	27	84	27	85	27	27
84	71	27	84	84	15	85
15	84	85	87	27	72	84
27	85	87	52	72	85	90
55	29	72	85	87	87	87
85	15	89	71	39	84	03
87	72	15	60	29	39	62
72	90	39	55	71	25	44
10	89	60	39	73	55	29
62	28	73	10	90	52	61

Source: UNCOMTRADE

Japan's exports to BIMSTEC in 2003 constituted vehicles other than railway or tramway rolling stock (87); optical, photographic, cinematographic, measuring, checking machinery (90) and machinery and mechanical appliances and parts thereof (84) and electrical machinery and equipment and parts thereof, sound recorders etc.(85). On the other hand, Japan's imports from BIMSTEC were the same commodities. The articles of export in the case of Nepal to BIMSTEC were carpets and other textile floor coverings (57); essential oil and reisinoids, perfumery, cosmetic or toilet preparations (33). Its imports were found to be common in line with the articles exported by Japan to BIMSTEC. Nepal was also found to export iron and steel (72) to BIMSTEC countries. Sri Lanka's imports from the sub-region were

mineral fuels, mineral oils and products of their distillation (27), machinery and mechanical appliances and parts thereof (84), vehicles other than railway or tramway rolling stock (87), cotton (52), and electrical machinery and equipment and parts thereof, sound recorders etc (85), whereas those for exports to BIMSTEC were articles of apparel or clothing accessories knitted or crocheted (61), articles of apparel or clothing accessories, not knitted or crocheted (62), natural or cultured pearls, precious stones (71) as well as coffee, tea, spices (09); and rubber and articles thereof (40). Thailand's exports to BIMSTEC were rubber and articles thereof (40), machinery and mechanical appliances and parts thereof (84), electrical machinery and equipment and parts thereof, sound recorders etc (85), vehicles other than railway or tramway rolling stock (87) and plastics and articles thereof (39). Thailand's imports from BIMSTEC were mineral fuels, mineral oils and products of their distillation (27), iron and steel (72), machinery and mechanical appliances and parts thereof (84), electrical machinery and equipment and parts thereof, sound recorders etc (85) and vehicles other than railway or tramway rolling stock (87).

Table 5: Top 10 Export Items (2-digit HS) of BIMSTEC Countries and Japan in 2003

Bangladesh	India	Myanmar	Sri Lanka	Thailand	Nepal	Japan
62	71	27	62	85	62	85
61	62	44	61	84	57	87
03	29	61	40	40	61	84
63	27	62	71	87	71	90
53	72	03	09	39	63	39
41	61	10	03	16	17	29
65	84	12	85	71	97	72
64	26	07	84	27	48	73
31	85	64	63	61	42	40
69	63	74	93	03	09	38

Source: UNCOMTRADE

From the above discussion, we find that the primary commodities traded by Japan in BIMSTEC, analysed at 2-digit HS, are in common with those of the BIMSTEC nations. However, the pattern will surely

different if we consider their trade at further disaggregated level and also analyse it bilaterally.

4. Bilateral Trade Structure

We present a comparative chart of the bilateral trade among BIMSTEC countries and Japan for two cross-section years, namely, 1996 and 2004, in Tables 6 and 7. We find that over the years, the volume of bilateral trade within BIMSTEC has increased. The total amount of export of Bangladesh to the remaining BIMSTEC countries increased from US\$ 212.61 million in 1996 to US\$ 265.76 million in 2004. For India, the total amount of intra-BIMSTEC export (including Japan) increased from US\$ 4032.01 million in 1996 to US\$ 6741.90 million in 2004. The total amount of intra-BIMSTEC export (including Japan) for Thailand in the year 2004 was US\$ 15569.68 million, which was higher than its 1996 level (US\$ 10205.13 million).

It is evident from the Tables 6 and 7 that the total amount of export of Japan to Bangladesh increased from US\$ 345.96 million in 1996 to US\$ 449.76 million in 2004. Japan's export to India, Thailand and Bhutan also increased from its 1996 level to 2004 level. However, Japan's export to Myanmar, Sri Lanka and Nepal declined from its 1996 level to 2004 level.

The important evidence is that the total export of BIMSTEC to Japan increased from US\$ 11528.84 million in 1996 to US\$ 15881.90 million in 2004, and the same for Japan to BIMSTEC also increased from US\$ 21766.66 million in 1996 to US\$ 24257.63 million in 2004.

5. Regional Trade Volume

A detailed analysis of the regional trade volume over the years is essential to have a brief analysis of the actual flow of merchandise within the region and the trend that can be expected in future. From Table 8 we find that the regional trade volume including Japan in the year 1996 was around US\$ 36,297 million; while the same for the year 2004 increased to US\$ 48,272 million. The corresponding figures excluding Japan are US\$ 3002 million and US\$ 8133 million, respectively.

Table 6: Intra-BIMSTEC Exports, 1996, (US\$ million)

From/To	Bangladesh	India	Myanmar	Sri Lanka	Thailand	Nepal	Bhutan	Japan	Total
Bangladesh	...	32.12	1.69	3.88	16.94	8.7	0.13	149.15	212.61
India	868.91	...	45.19	477.36	447.04	165.68	21.97	2005.86	4032.01
Myanmar	...	...	...	...	...	...	...	...	...
Sri Lanka	...	...	...	...	...	...	...	...	...
Thailand	105.09	242.55	318.73	137.82	...	27.84	0.7	9372.4	10205.13
Nepal	6.99	72.15	...	0.3	0.17	...	0	1.43	81.04
Bhutan	...	...	...	...	...	...	...	...	...
Japan	345.96	2431.6	253.62	400.65	18263.49	65.49	5.85	...	21766.66
Total	...	...	...	...	...	...	...	11528.84	36297.45

Source: UN COMTRADE.

Table 7: Intra-BIMSTEC Exports, 2004, (US\$ million)

From/To	Bangladesh	India	Myanmar	Sri Lanka	Thailand	Nepal	Bhutan	Japan	Total
Bangladesh	...	105.2	3.64	10.21	20.6	0.66	3.92	121.53	265.76
India	1593.31	...	108.82	1344.05	872.3	736.9	83.88	2002.64	6741.9
Myanmar	26.24	403.52	...	2.03	...	0.66	...	138.85	571.3
Sri Lanka	13.37	385.8	0.21	...	18.55	0.27	...	154.8	573
Thailand	373.66	911.65	604.69	182.5	...	37.29	2.83	13457.06	15569.68
Nepal	4.07	281.7	...	0.07	...	...	...	7.02	292.86
Bhutan	...	...	...	...	...	...	...	...	...
Japan	449.76	3043.67	104.92	339.16	20275.75	22.65	21.72	...	24257.63
Total	...	...	...	...	...	...	...	15881.9	48272.13

Source: UN COMTRADE

Table 8 shows that intra-BIMSTEC export including Japan was 6.41 percent in 2004, which remained higher than the corresponding figure of 4.34 percent even when Japan is excluded. Both intra-BIMSTEC export (excluding and including Japan) indicates a rising trend during 1996 to 2004.

Table 8: Intra-BIMSTEC Trade

	BIMSTEC		BIMSTEC+Japan	
	1996	2004	1996	2004
BIMSTEC exports to world (US\$ million)	98169.28	187184.8	509070.3	752991.8
Intra-BIMSTEC exports (US\$ million)	3001.95	8132.6	36297.45	48272.13
Intra-BIMSTEC export share (%) [#]	3.06	4.34	7.13	6.41

Note: [#]As percentage of world exports.

Source: Based on UNCTAD trade data and UN COMTRADE

Therefore, it can be concluded that the intra-BIMSTEC trade is growing substantially over the period. Since higher intra-regional trade is an encouraging factor for countries to form RTA, it may be profitable on the part of Japan to participate in BIMSTEC.

Let us now turn to the Regional Trade share (RTs) of BIMSTEC+Japan. Regional trade is the percentage share of total trade

Table 9: Regional Trade Share (RTS) of BIMSTEC+ Japan in 2004 (%)

	RTS including Japan	RTS excluding Japan
Bangladesh	3.17	1.72
India	9.39	6.6
Japan	4.29	4.29
Myanmar	19.55	14.8
Nepal	38.74	37.8
Sri Lanka	9.95	7.26
Thailand	15.98	2.17
BIMSTEC	6.41	4.34

Source: Based on UNCTAD and UNCOMTRADE

carried out by BIMSTEC countries within themselves in relation to their total global trade (e.g. $RT = (\text{Trade among BIMSTEC} / \text{Trade with World}) \times 100$).

Table 9 shows that the regional trade share of BIMSTEC countries declines if Japan is excluded. Thailand is comparatively affected more due to the exclusion of Japan since bilateral trade between Thailand and Japan is relatively high. It is also noticeable that the total BIMSTEC regional trade including Japan, although meagre, is greater than that excluding Japan.

6. Trade Performance of BIMSTEC Countries and Japan

Now, we take the aid of certain crucial indicators in order to have a better picture of the current trade scenario in BIMSTEC and Japan.

Openness (O_j)

Openness shows a share of the sum of total merchandise exports ("X) and imports ("M) in the country j gross domestic products (GDP), both expressed in current values:

$$O_i = \frac{\sum M + \sum X}{GDP}$$

Table 10 shows that the openness of Japan in 2000 was 18.09 percent, whereas that for Sri Lanka was 71.9 percent. This could not be interpreted as Sri Lanka being four times as open as Japan. Openness reflects a country's involvement in trade and hence should be termed as a measure of trade dependence. It, in addition, gives an idea of the size of a country, there being a negative correlation between the two (the larger the country, the smaller the share of its trade).

The openness indices of Japan and India exhibit more or less an increasing trend, which implies that their engagement in international trade is rising over the years. Bhutan, Myanmar, Sri Lanka and Thailand also show very high involvement in trade. Openness scores of Bangladesh and Nepal declined after 2000, and again picked up an increasing trend since 2003.

Table 10: Openness Ratio (%)

	2000	2001	2002	2003	2004
Japan	18.09	18.08	18.99	19.92	21.85
Bangladesh	30.35	24.48	26.99	28.97	29.76
Bhutan	63.22	57.55	52.21	57.47	57.84
India	20.20	19.38	20.82	21.57	24.36
Myanmar	57.41	71.09	54.65	48.11	49.79
Nepal	44.54	40.38	36.73	41.24	40.36
Sri Lanka	71.94	69.06	65.82	65.11	71.38
Thailand	106.72	109.85	104.61	109.11	120.16

Source: Based on UNCTAD

The openness index, however, only provides an indication of the proportion of a nation's GDP that is accounted for by international trade. It is possible that an open and liberalized economy has a relatively small openness index, if a large proportion of its GDP is created by non-traded activities, supported by the domestic market. Moreover, low trade dependence may indicate high trade restrictions either in that country or towards that country in the overseas markets, or both. Therefore, it is not possible to evaluate a country's trade regime as "open" or "closed" on the basis of the openness index alone.

Trade Intensity

Trade intensity coefficient helps us to measure of the extent of bilateral trade flows between the BIMSTEC countries with Japan. It 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.

$$T_{ij} = \left(\frac{x_{ij}}{X_{it}} \right) / \left(\frac{x_{wj}}{X_{wt}} \right)$$

Where, x_{ij} and x_{wj} are the values of export of country 'i' and that of the world to country 'j', respectively, and X_{it} and X_{wt} are total exports of country 'i' and the world. The trade intensity ratio provides a measure of the relative importance as an export market of the destination to the source, when compared with the world as a whole (or alternatively the rest of the world as a whole). Hence, the index takes a value of 1 if

the destination is no more important to the source than to the world on average (or the rest of the world on average). Values greater than unity indicate more ‘intense’ trading relations, although this could reflect numerous factors (distance, for example). In other words, an index greater than unity implies the bilateral trade flows are greater than expected, given the partner country’s presence in world trade. Therefore, it helps in policy implementation.

We find that, out of the eight BIMSTEC countries, Bangladesh and Nepal did less than their expected level of trade with Japan in 1996, subject to Japan’s presence in the world trade. On the other hand, as shown in Table 11, Japan, as an exporter, had more than expected bilateral trade relations with Myanmar, Sri Lanka, Thailand and Nepal in 1996. Similarly, for the years 2002 and 2004, only Thailand is seen to have better trade relations with Japan, compared to their bilateral expected trade.

Major Export Category

A product, which is responsible for 50 percent or more of total exports of a country, can be termed as dominating export item. For a product ‘j’, a share in country i’s total exports is ranked. If a single commodity has too much weightage (> 50 percent) on its exports then the country is said to be too dependent on one product category.

$$MX_{ij} = \frac{X_{ij}}{\sum_{j=1}^n X_j} \bullet 100$$

where, X_{ij} is the value of country j’s total export of commodity i and X_j is the value of total exports of country j. If no single category accounts for 50 percent or more of total exports, the economy is classified as diversified.

From Table 12 we find that no country puts more than 50 percent weightage in the export of any particular product and therefore, we can say that they have diversified their trade although each country puts maximum weightage on one particular commodity for its exports.

Table 11: Trade Intensity Coefficient

Year: 1996

	Bangladesh	India	Myanmar	Sri Lanka	Thailand	Nepal	Japan
Bangladesh	...	0.86	0.63	0.59	0.32	1.22	0.53
India	22.73	...	3.11	15.8	1.07	41.74	1.09
Sri Lanka	2.62	1.42	0.53	...	0.41	2.09	1.06
Thailand	1.68	0.59	...	2.76	...	4.29	2.84
Nepal	17.36	25.03	...	0.93	0.04	...	0.07
Japan	0.75	0.82	13.47	1.09	3.53	1.35	...

Year: 2002

	Bangladesh	India	Myanmar	Sri Lanka	Thailand	Nepal	Japan
Bangladesh	...	1	0.43	0.41	0.22	6.3	0.02
India	18.17	...	2.75	17.3	15.31	29.99	0.05
Sri Lanka	19.13	5.05	0.14	...	0.33	1.65	0.63
Thailand	2.92	0.83	11.27	2.55	...	2.81	3.05
Nepal	.....	...	.....	.....	.....	.....	.....
Japan	0.83	0.51	0.76	0.72	3.16	0.18	.....

Year: 2004

	Bangladesh	India	Myanmar	Sri Lanka	Thailand	Nepal	Japan
Bangladesh	...	0.86	0.62	1.03	0.13	2.78	0.28
India	19.86	...	4.37	21.32	1.13	63.85	0.59
Myanmar	8.1	13.18	.....	0.78	.....	1.08	0.93
Sri Lanka	1.52	3.14	0.14	...	0.28	1.65	0.66
Thailand	2.18	0.58	15.91	1.76	...	2.46	2.3
Nepal	4.86	35.55	.....	0.11	.....	.....	0.18
Japan	0.73	0.43	0.77	0.82	2.19	0.24	.....

Source: Based on UN COMTRADE and UNCTAD

Table 12: Major Export Category (MEC) of BIMSTEC-Japan for 2004

Bangladesh		India		Sri Lanka		Thailand		Nepal		Japan		Myanmar	
HS 2002	MEC (%)	HS 2002	MEC (%)	HS 2002	MEC (%)	HS 2002	MEC (%)	HS 2002	MEC (%)	HS 2002	MEC (%)	HS 2002	MEC (%)
6203	10.64	7102	11.06	6204	13.35	8471	8.99	5701	8.05	8703	15.59	4403	32.08
6204	10.41	2601	10.32	6110	5.59	8542	5.29	6204	6.05	8542	5.04	713	28.1
6205	10.31	2710	7.67	6206	4.73	8473	4.41	6203	5.58	8708	4.82	306	7.72
6110	9.33	7113	3.87	6205	4.35	4001	3.18	7212	4.75	8504	3.68	4407	5.36
306	5.63	7210	1.69	902	4.11	8517	2.99	1516	4.4	8473	3.06	6403	2.81
6206	5.07	6302	1.65	6201	3.96	2710	2.27	6110	4.08	8525	2.33	6203	2.53
6108	3.57	306	1.6	6203	3.68	1006	2.08	5509	3.04	8479	2	1207	2.41
6505	3.49	1006	1.42	6212	3.46	8528	2.02	908	2.36	8471	1.75	6205	1.28
6201	3.49	3004	1.39	6202	2.87	7113	1.74	3306	2.14	8541	1.68	7103	0.08
6202	2.49	6204	1.3	6108	2.76	8529	1.68	713	2.14	8704	1.55	304	0.08

Source: Based on World Bank WITS and UNCTAD

From the aforesaid table we find that Bangladesh, in 2004, exerted maximum weightage on the export of men's or boys' suits, ensembles, jackets, blazers (6203) followed by women's or girls' suits, ensembles, jackets, blazers(6204), men's or boys' shirts(6205), Jerseys, pullovers, cardigans, waist-coats(6110) and Crustaceans, whether in shell or not, live, fresh (0306), women's or girls' blouses, shirts and shirt-blouse (6206), women's or girls' slips, petticoats, briefs (6108), Hats and other headgear, knitted or crocheted (6505), men's or boys' overcoats, car-coats, capes, cloaks (6201) and women's or girls' overcoats, car-coats, capes (6202).

For India, the major export categories were diamonds, whether or not worked, but not mounted (7102) followed by Mineral fuels, oils & product of their distillation (2601), Petroleum oils and oils obtained from bituminous minerals (2710), Articles of jewellery and parts thereof (7113) and Flat-rolled products of iron or non-alloy steel (7210), Bed linen, table linen, toilet linen and kitchen linen (6302), Crustaceans, whether in shell or not, live, fresh (0306), Rice (1006), Medicaments(3004) and Women's or girls' suits, ensembles, jackets, blazer (6204).

Sri Lanka gave maximum weightage on the export of Women's or girls' suits, ensembles, jackets, blazers (6204), Jerseys, pullovers, cardigans, waist-coats (6110), Women's or girls' blouses, shirts and shirt-blouse (6206), Men's or boys' shirts (6205), Tea, whether or not flavoured (0902), Men's or boys' overcoats, car-coats, capes, cloaks (6201), Men's or boys' suits, ensembles, jackets, blazers (6203), BrassiFres, girdles, corsets, braces, suspenders (6212), Women's or girls' overcoats, car-coats, capes, clothes (6202) and Women's or girls' slips, petticoats, briefs (6108).

Thailand exerted more weightage on the export of Automatic data processing machines and units thereof (8471), Electronic integrated circuits and micro assemblies (8542), Parts and accessories (other than covers, carrying materials) (8473), Natural rubber, balata, gutta-percha, guayule,etc (4001), Electrical apparatus for line telephony (8517), Petroleum oils and oils obtained from bituminous metals (2710), Rice

(1006), Reception apparatus for television, whether or not (8528), Articles of jewellery and parts thereof, of precious stones (7113) and Electrical Parts suitable for use solely or principally (8529).

The major export categories of Nepal for 2004 were Carpets and other textile floor coverings (5701), Women's or girls' suits, ensembles, jackets, blazers (6204), Men's or boys' suits, ensembles, jackets, blazers (6203), Flat-rolled products of iron or non-alloy steel (7212), Animal or vegetable fats and oils and their fractions (1516), Jerseys, pullovers, cardigans, waist-coats and sim (6110), Yarn (other than sewing thread) of synthetic stapler (5509), Nutmeg, mace and cardamoms (0908), Preparations for oral or dental hygiene (3306) and Dried leguminous vegetables, shelled, whether or not (0713).

Japan provided maximum weightage on the export of Motor cars and other motor vehicles principally delivered (8703), Electronic integrated circuits and micro assemblies (8542) Parts and accessories of the motor vehicles (8708), Electrical transformers, static converters (8504), Parts and accessories (other than covers, carrying materials) (8473), Transmission apparatus for radio-telephony (8525), Machines and mechanical appliances (8479), Automatic data processing machines and units thereof (8471), Diodes, transistors and similar semiconductor devices (8541) and Motor vehicles for the transport of goods (8704).

Myanmar gave more weightage on the export of Wood in the rough, whether or not stripped of bark (4403) followed by Dried leguminous vegetables, shelled, whether (0713), Crustaceans, whether in shell or not, live, fresh (0306), Wood sawn or chipped lengthwise, sliced or peeled (4407), Footwear with outer soles of rubber, plastics, leanen (6403), Men's or boys' suits, ensembles, jackets, blazers (6203), Other oil seeds and oleaginous fruits (1207), Men's or boys' shirts (6205), Precious stones (other than diamonds) (7103) and Fish fillets and other fish meat (0304).

Therefore, garment is the major export item in Bangladesh and its export is not much diversified with the top 10 items sharing 64.43 percent of total exports in 2004. India has substantially diversified its export with the top 10 items contributing 41.97 percent share in total

exports and the main items being jewellery products, textile products and garments, transport equipment and pharmaceutical products. Garment is also the major export item of Sri Lanka with a share of 48.86 percent for the top 10 items in 2004. Thailand's export items are diversified. The share of top 10 items was 34.65 percent in 2004. Export is more or less diversified in Nepal with the top 10 items sharing 42.59 percent of total exports in 2004. Japan mainly exports motor cars and motor vehicles and electrical and electronic appliances with the top 10 export items contributing 41.5 percent of total exports in 2004. Myanmar's export diversification is not fair enough with the top 10 items contributing 82.45 percent of total exports in 2004.

Index of Trade Concentration

Another widely known index also measuring a degree to which a country j exports is dispersed over various products is called index of trade concentration or Hirschman index. It can be calculated as,

$$H_j = \sqrt{\left(\sum \left(\frac{x_i}{X} \right)^2 \right)}$$

where, x_i is the value of product i 's exports and X_j is value of total exports of country j . This index is normalized so that its values range between 0 and 1. Values closer to one indicate more concentrated trade structures. Table 13 shows the index of trade concentration for BIMSTEC countries and Japan.

**Table 13: Index of Trade Concentration for
BIMSTEC-Japan in 2004**

	Number of products Exported* (HS 4)	Index of Trade Concentration
Thailand	1164	0.14
Nepal	557	0.16
Myanmar	347	0.44
Sri Lanka	751	0.19
India	1233	0.18
Bangladesh	509	0.23
Japan	1206	0.18

Note: *Calculated at 4-digit HS.

Source: Computed from World Bank WITS

What we found is that the degree of concentration is low in Thailand, Nepal, Sri Lanka, India, Bangladesh and Japan, but in case of Myanmar it is comparatively higher.

Complementarity Index

Complimentarity Index is a measure of how well the export profile of a country matches the import profile of another. The formula for complementary index is given by

$$C_{ij} = 1 - \left(\sum |m_{hi} - x_{hj}| \right) \div 2$$

where C_{ij} is the trade complementarity index for trade between countries i and j , m_{hi} is the share of good h in total imports of country i and x_{hj} is the share of good h in total exports of country j . The index ranges between 0 and 1. It takes value 0 when there is no compatibility in trade flows between two countries, that is, when there is no product that is exported from one country and imported by the other one. On the other hand, the index takes value 1 when trade flows match perfectly, that is, when the export structure of one country is just the same as the import structure of the other country. This index can be thought of as an aggregate measure of the potential for inter-industry trade. Higher index values are assumed to indicate more favorable prospects for a successful trade arrangement between countries. Table 14 reports the trade complementarity index in the BIMSTEC region both including and excluding Japan for the year 2003.

Table 14: Complementarity Index for BIMSTEC Trade in 2003

Trader	Index including Japan	Index excluding Japan
Bangladesh	0.45	0.54
India	0.39	0.40
Myanmar	0.55	0.53
Sri Lanka	0.47	0.54
Thailand	0.70	0.43
Nepal	0.42	0.48
Japan	0.68	.....

Source: Calculated based on World Bank WITS.

It is evident from the table that the complementarity index for Bangladesh, Sri Lanka and Nepal with the rest of BIMSTEC countries including Japan is less than that of excluding Japan. The complementarity indices for India and Myanmar with the rest of BIMSTEC countries, including and excluding Japan, remain more or less same. The index for Thailand rises up significantly if we incorporate Japan in the BIMSTEC. Japan also seems to have high complementarity with the BIMSTEC region.

Now let us turn to see the compatibility between the imports of the BIMSTEC countries and the exports of Japan. Table 15 depicts the Trade Complimentarity Index of BIMSTEC Countries as importer with Japan for the year 2003.

Table 15: Trade Complimentarity Index of BIMSTEC Countries as Importer with Japan in 2003

Trader	TCI
Bangladesh	0.38
India	0.37
Myanmar	0.50
Sri Lanka	0.39
Thailand	0.67
Nepal	0.36

Source: Calculated based on World Bank WITS.

It can be seen that all of the BIMSTEC countries' import structure shows some compatibility with the export structure of Japan. On average, Nepal's import structure exhibits the lowest complementarity with Japan's exports. The degree of complementarity is higher for trade between Thailand and Japan, relative to other countries in the region.

Table 16 shows the trade complementarity of Japan as an importer with the BIMSTEC countries. The export structures of Bangladesh, Nepal and Sri Lanka do not exhibit significant match with the import structure of Japan, whereas the export structures of India, Myanmar and Thailand show some compatibility with the import structure of Japan. In summary, the foregoing discussion points out lack of strong complementarity in the trade structures between BIMSTEC and Japan.

Table 16: Trade Complimentarity Index of Japan as Importer with BIMSTEC Countries in 2003

Trader	Trade Complimentarity Index
Bangladesh	0.13
India	0.50
Myanmar	0.42
Sri Lanka	0.25
Thailand	0.46
Nepal	0.14

Source: Computed from World Bank WITS.

Intra-Industry Trade

The Grubel-Lloyd indicator (1975) being one of the standard and most used measure of intra-industry trade is used here to measure intra-industry trade.

$$IIT = 1 - \frac{\sum_{j=1}^n |X_{ij} - M_{ij}|}{\sum_{j=1}^n (X_{ij} + M_{ij})}$$

where X_{ij} =value of country i 's exports of product j to the world and M_{ij} =value of country i 's imports of product j from the world. Higher the index value indicates better trade integration among the countries.

Given the importance of intra-industry trade in the context of regional economic co operation initiatives, it is worthwhile to investigate as to how far the BIMSTEC countries have engaged in intra-industry trade. We focus on this question, and examine the extent of intra-industry in the BIMSTEC+Japan according to HS commodity classifications.

In the case of trade between Bangladesh and World in 2003, there has been high intra-industry trade in textile, ceramic products, fertilizer, leather and travel goods, toys, aircraft, spacecraft, and parts thereof. While moderate intra-industry trade has occurred in products like natural/cultured pearls, footwear and gaiters, manufactured tobacco substitutes and furniture and related products (see, Table 17 and Table 17a (Appendix))⁸.

Table17: Commodity-wise Intra-Industry Trade Indicator for Bangladesh in 2003

Product (HS 2002)	Product Name	IIT
56	Wadding, felt & nonwoven; yarns; twine, cordage,	1.00
57	Carpets and other textile floor coverings.	0.99
69	Ceramic products.	0.91
95	Toys, games & sports requisites; parts & access t	0.88
88	Aircraft, spacecraft, and parts thereof.	0.87
42	Articles of leather; saddlery/harness; travel goo	0.77
31	Fertilisers.	0.65
97	Works of art, collectors' pieces and antiques.	0.61
67	Prepr feathers & down; arti flower; articles huma	0.59
09	Coffee, tea, matn and spices.	0.58

Source: Calculated based on World Bank WITS.

Tables 18 and 18a (Appendix) show that India exhibits high intra-industry trade in rubber articles, textiles, organic chemicals, mining and metal products, plastics, ceramics, glass and glassware, leather products, locomotives, natural/cultured pearls, arms and ammunitions, spirits and beverages and miscellaneous manufactured articles.

Table 18: Commodity-wise Intra-Industry Trade Indicator for India in 2003

Product (HS 2002)	Product Name	IIT
40	Rubber and articles thereof.	0.99
08	Edible fruit and nuts; peel of citrus fruit or me	0.98
43	Furskins and artificial fur; manufactures thereof	0.98
50	Silk.	0.98
29	Organic chemicals.	0.97
54	Man-made filaments.	0.96
76	Aluminium and articles thereof.	0.96
56	Wadding, felt & nonwoven; yarns; twine, cordage,	0.94
35	Albuminoidal subs; modified starches; glues; enzy	0.93
74	Copper and articles thereof.	0.92

Source: Calculated based on World Bank WITS.

In case of Myanmar, there is high trade integration with the world in leather articles, textiles, sugars and sugar confectionery, furniture and related products, footwear and gaiters, mineral salts and fuels, aircraft, spacecraft, and parts thereof. Intra-industry trade was moderate in rubber articles, tobacco and manufactured tobacco substitutes in 2003 (see, Table 19 and Table 19a (Appendix)).

Table 19: Commodity-wise Intra-Industry Trade Indicator for Myanmar in 2003

Product (HS 2002)	Product Name	IIT
42	Articles of leather; saddlery/harness; travel goo	0.98
17	Sugars and sugar confectionery.	0.83
63	Other made up textile articles; sets; worn clothi	0.82
94	Furniture; bedding, mattress, matt support, cushi	0.79
23	Residues & waste from the food indust; prepr ani	0.79
13	Lac; gums, resins & other vegetable saps & extrac	0.78
53	Other vegetable textile fibres; paper yarn & wove	0.73
08	Edible fruit and nuts; peel of citrus fruit or me	0.72
57	Carpets and other textile floor coverings.	0.70
64	Footwear, gaiters and the like; parts of such art	0.67

Source: Calculated based on World Bank WITS.

Sri Lanka exhibits high intra-industry trade in ores, slag and ash, ceramic products, natural/cultured pearls, tobacco and manufactured tobacco substitutes, printed books, newspapers, pictures, ships, boats and floating structures, furniture and miscellaneous manufactured articles in 2003. It shows moderate intra-industry trade in Rubber and articles thereof, footwear and gaiters and photographic supplies (Table 20 and Table 20a (Appendix)).

Thailand exhibits high intra-industry trade in printed materials, electrical machinery and equipments, paper, photographic supplies, spirits and beverages, man-made filaments, nuclear reactors, locomotives, articles of base metals, cement, glass and glassware, textiles, metal products, organic chemicals and miscellaneous manufactured articles in 2003 (Table 21 and Table 21a (Appendix)).

Table 20: Commodity-wise Intra-Industry Trade Indicator for Sri Lanka in 2003

Product (HS 2002)	Product Name	IIT
26	Ores, slag and ash.	0.99
21	Miscellaneous edible preparations.	0.97
11	Prod.mill.indust; malt; starches; inulin; wheat g	0.87
57	Carpets and other textile floor coverings	0.86
69	Ceramic products	0.82
71	Natural/cultured pearls, prec stones & metals, co	0.81
20	Prep of vegetable, fruit, nuts or other parts of	0.79
24	Tobacco and manufactured tobacco substitutes	0.78
08	Edible fruit and nuts; peel of citrus fruit or me	0.72
49	Printed books, newspapers, pictures & other produ	0.68

Source: Calculated based on World Bank WITS.

Table 21: Commodity-wise Intra-Industry Trade Indicator for Thailand in 2003

Product (HS 2002)	Product Name	IIT
49	Printed books, newspapers, pictures & other produ	1.00
85	Electrical mchy equip parts thereof; sound record	1.00
48	Paper & paperboard; art of paper pulp, paper/pape	0.97
90	Optical, photo, cine, meas, checking, precision,	0.97
96	Miscellaneous manufactured articles.	0.97
39	Plastics and articles thereof.	0.96
71	Natural/cultured pearls, prec stones & metals, co	0.96
22	Beverages, spirits and vinegar.	0.96
83	Miscellaneous articles of base metal.	0.95
54	Man-made filaments.	0.94

Source: Calculated based on World Bank WITS.

In case of Nepal, the intra-industry trade in 2003 has been significant in textiles, sugars and sugar confectionery, natural/cultured pearls, leather articles and miscellaneous articles of base metal, shown in Table 22 and Table 22a (Appendix).

Table 22: Commodity-wise Intra-Industry Trade Indicator for Nepal in 2003

Product (HS 2002)	Product Name	Nepal
65	Headgear and parts thereof.	0.99
63	Other made up textile articles; sets; worn clothi	0.93
17	Sugars and sugar confectionery.	0.92
71	Natural/cultured pearls, prec stones & metals, co	0.86
67	Prepr feathers & down; arti flower; articles huma	0.84
43	Furskins and artificial fur; manufactures thereof	0.81
42	Articles of leather; saddlery/harness; travel goo	0.73
92	Musical instruments; parts and access of such art	0.70
44	Wood and articles of wood; wood charcoal.	0.55
62	Art of apparel & clothing access, not knitted/cro	0.52

Source: Calculated based on World Bank WITS.

Japan traded a variety of products on an intra-industry basis (Table 23 and Table 23a (Appendix)). The categories in which intra-industry trade occurred in 2003 were textile, paper, organic chemicals, ceramic products, clocks and watches, soap and cleansing materials, pharmaceutical products, articles of base metals, cement, glass and glassware, toys, photographic supplies, plastics, locomotives, arms and ammunitions, electrical machineries, nuclear reactors, printed materials, metal articles and miscellaneous manufactured articles.

Table 23: Commodity-wise Intra-Industry Trade Indicator for Japan in 2003

Product (HS 2002)	Product Name	IIT
52	Cotton.	0.97
48	Paper & paperboard; art of paper pulp, paper/pape	0.96
29	Organic chemicals.	0.89
69	Ceramic products.	0.88
56	Wadding, felt & nonwoven; yarns; twine, cordage,	0.88
91	Clocks and watches and parts thereof.	0.88
97	Works of art, collectors' pieces and antiques.	0.87
34	Soap, organic surface-active agents, washing prep	0.83
30	Pharmaceutical products.	0.81
81	Other base metals; cermets; articles thereof.	0.79

Source: Calculated based on World Bank WITS.

The country-wise average intra-industry trade for BIMSTEC and Japan in 2003 is shown in Table 24. What we found is that (Table 24) only Thailand and to some extent India and Japan exhibit high intensity of intra-industry trade with the world.

Therefore, barring few exceptions, the intra-industry trade has been highly erratic in the BIMSTEC-Japan region. Few products such as textiles and clothing, leather products, and some basic machinery and tools dominate the intra-industry trade profile in this region. However, for most of the products, there has been a low intensity of intra-industry trade in the region.

Table 24: Country wise Average Intra Industry Trade Indicator for BIMSTEC-Japan in 2003

Country	IIT
Bangladesh	0.1
India	0.45
Myanmar	0.19
Sri Lanka	0.19
Thailand	0.71
Nepal	0.08
Japan	0.45

Source: Calculated based on World Bank WITS.

The intra-industry trade can play a pivotal role in promoting regional integration between BIMSTEC and Japan. This is because this type of trade can flourish even in situations where the trade and production structures of the trading partners lack strong complementarities as has been observed between BIMSTEC and Japan. In this scenario, the BIMSTEC countries can strengthen their trade linkages by devising mechanisms to promote intra-industry trade within the region. One way to accomplish this is through regional production sharing arrangements that involves the initiation of part of a manufacturing process for a specific good in one country and transfer of the activity to another for further processing. The BIMSTEC countries including Japan can achieve greater economic cooperation and integration by evolving a vertically integrated regional production structure in sectors that are of economic significance in the regional

context. This would allow the BIMSTEC economies to specialize in different lines of production within a particular industry and thus achieve benefits of specialization and scale economies. The regional production sharing arrangements depends upon factors including low tariffs, wage differentials, low transportation costs and favourable government policies and it is needless to say that these arrangements are unlikely to succeed in the absence of such an environment.

Trade Specialization and Competitiveness Indicators

Revealed Comparative Advantage (RCA) 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 is the Balassa (1965) formula:

$$RCA_{ij} = \frac{X_{ij} / X_i}{X_{wj} / X_w}$$

where X_{ij} , X_{wj} are exports of product 'j' by country 'i' and the world respectively, X_i , X_w are values of total export of country 'i' 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. 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.

Prospects of regional trade expansion are likely to be weak for countries that have comparative advantage in similar products. Here we examine the pattern of RCA with a view to ascertain the extent to which the existing trade structure of individual countries can support immediately the regional economic cooperation initiatives.

We have computed the revealed comparative advantage scores based on 4-digit HS 2002 commodity classification. From Table 25, we observe that in the year 2004, Bangladesh possessed revealed comparative advantage in 81 commodities, India in 380 commodities, Myanmar in 86 commodities, Sri Lanka in 154 commodities, Thailand in 298 commodities, Nepal in 219 commodities. In 2004, Japan possessed revealed comparative advantage in 327 commodities.

**Table 25: Number of Commodities with RCA>1 in 2004
(4-digit HS 2002 classification)**

Country	No of Commodities
Bangladesh	81
India	380
Myanmar	86
Sri Lanka	154
Thailand	298
Nepal	219
Japan	327

Source: Calculated based on World Bank WITS.

The RCA scores at 4-digit HS indicate that in 2004 (Table 26 and Table 26a (Appendix)) Bangladesh has comparative advantage in fish, fish crustaceans, vegetables, tea, jute, leather, textile yarn, tobacco, woven cotton fabrics, clothing and fertilizers.

In 2004, India has revealed comparative advantage in (Table 26 and Table 26a (Appendix)) a wide range of food, beverages and tobacco products including fish, crustaceans, rice, fruits and nuts, tea, spices, feeding stuff for animals, tobacco and tobacco products. The country also has comparative advantage in oilseeds, products of cotton, ores and concentrates of basic metals, vegetable materials, petroleum oils and preparations, organic chemicals, medicinal and pharmaceutical products, cosmetic and soaps, steel products, leather, articles of textile and clothing. India also enjoys revealed comparative advantage in motor vehicles, motor cycles, and cycles.

At the 4-digit HS, in the year 2004, Myanmar has comparative advantage (Table 26 and Table 26a (Appendix)) in crude animal,

Table 26: Top 20 Commodities having RCA>1 in BIMSTEC and Japan in 2004 (at 4-Digit HS)

Bangladesh	India	Myanmar	Sri Lanka	Thailand	Nepal	Japan
5303	2305	0713	1203	1519	5310	9104
5307	0501	2609	0906	1903	0908	8711
5310	1508	4403	5305	0714	5701	3705
6505	2610	1401	0902	4001	7905	3707
6205	2516	1207	4012	1006	1516	8113
6209	6803	4007	1402	7006	1403	9010
6306	7906	5303	2824	1108	7212	8458
4106	5310	2530	1403	4015	6214	5405
6201	6703	1403	1404	1605	5307	8457
6206	5701	0910	0907	3505	5607	9201
6207	5006	0306	1520	4007	3306	9108
6103	0801	2602	7103	1604	0910	8429
6108	2601	2617	5510	7103	5509	8908
6210	2525	7103	6201	2006	0903	8504
6211	5702	4405	6116	4414	6305	8444
6101	7114	4402	1106	9110	8003	7020
6113	2514	0813	2302	1603	3806	9002
6203	7012	7101	2504	2008	5006	8446
6208	5307	2308	6206	4014	1213	9612
8476	6003	2302	6212	9114	0713	9009

Source: Calculated based on World Bank WITS.

manufactured tobacco and tobacco products, ores and concentrates of basic metals, petroleum oils and preparations, products of cotton, textile yarn, woven fabrics, fruits and nuts, organic chemicals, cereals.

In 2004, Sri Lanka possessed comparative advantage (Table 26 and Table 26a (Appendix)) in petroleum oils, crustaceans, fruits and nuts, rice, tea and coffee, vegetable textile fibres, crude vegetables, rubber materials, wood manufactures, textile yarn, malt extract, fertilizers, woven fabrics of textile materials, clothing, electric power machinery and leather.

For the year 2004, Thailand enjoyed revealed comparative advantage (Table 26 and Table 26a (Appendix)) in textile yarn, clothing, meat, crustaceans, coffee, furniture, spices, soaps and

perfumes, synthetic rubber, electric power machinery, crude animals, cotton, woven fabrics of textile materials, fruits and nuts, leather products, crude vegetable materials, petroleum oils and mineral fuels, ores and concentrates of basic metals, rice, organic chemicals, pharmaceutical products, wood products, and dairy products.

Nepal has comparative advantage (Table 26 and Table 26a (Appendix)) in fish, crustaceans, ores and concentrates of basic metals, hard rubber, leather, articles of jewelry, woven fabrics of textile materials, fruits and nuts, oil seeds, textile yarn, floor coverings, clothing, electric power machinery, motor vehicles, motor cycles and cycles.

In 2004, Japan shown revealed comparative advantage (Table 26 and Table 26a (Appendix)) in fish, preserved food items, edible oils, vegetable products, fruits and nuts, clothing, cereals, arms and ammunitions, automobiles, electrical machinery and articles, electronic devices, agricultural and horticultural machineries, mechanical and electrical appliances, articles of jewelry, woven fabrics of textile materials, textile yarn, organic chemicals and crude animals. It also possessed comparative advantage in basic metals and metal articles including copper, tin nickel, aluminium, zinc, lead, and bismuth.

The above discussion provides that the pattern of revealed comparative advantage is quite similar across the BIMSTEC-Japan region. Except India, Thailand and Japan, all other countries in this region enjoy comparative advantage in a relatively narrow range of products.

Despite the fact that the countries in the BIMSTEC-Japan region possess comparative advantage in similar commodities, there is some potential for increasing intra-regional trade. Fish products, vegetables, jute, and fertilisers can be imported from Bangladesh by the remaining countries in this region. India can be a potential exporter of a variety of products ranging from various food items to machinery and transport equipment. Myanmar can become a potential exporter of cereals, oilseeds and ores and concentrates of base metals in the region. Sri

Lanka's potential exports to the region include rubber products, raw or processed textile fibres, wood manufactures, electric machinery and parts. Thailand's potential exports to BIMSTEC-Japan region include meat, dairy products, crude vegetables, preserved food items, organic chemicals and pharmaceutical products. Nepal can be a potential exporter for oilseeds and floor coverings. It is evident that Japan's export interest lies in automobiles, electronic devices, electrical machinery and articles, agricultural and horticultural machineries, mechanical and electrical appliances.

7. Strengthening Economic Cooperation between BIMSTEC and Japan Some Policy Implications

The BIMTEC region possesses an almost identical pattern of comparative advantage. The complementarities in trade in goods between BIMSTEC and Japan are presently low. BIMSTEC countries are deficient in capital. With the exception of India and to some extent Thailand, these deficiencies made the BIMSTEC countries dependent on industrialized countries for their capital goods and technology. The regional exports largely consist of raw materials and traditional products like textile and garments. On the other hand, the import requirements of the region mainly consist of capital goods and high-tech products. In this scenario, Japan can play an important role in strengthening resource base of BIMSTEC countries and trade capacity. From Japan's perspective, Japan can substantially extend its economic space and its technological capabilities and capacities through partnership with firms in BIMSTEC countries, particularly in knowledge-intensive areas such as biotechnology, pharmaceuticals IT, space and certain manufacturing areas.

An examination of the revealed comparative advantage profiles of the countries in BIMSTEC and Japan shows that major Japan imports where BIMSTEC countries have comparative advantage and role as supplier can be expanded on following commodities.

- fish
- fruits
- charcoal
- iron ore concentrates

- non-ferrous metal
- silver platinum ores
- crude vegetable materials
- wood manufactures
- office machine
- travel goods/ handbags
- clothes, excluding fur
- watches and clocks
- other manufactured goods
- zoo animals / pets (non-threatened & non-endangered)

Some of the major BIMSTEC imports where Japan has comparative advantage and its role as supplier can be expanded on following commodities:

- arms and ammunitions
- automobiles
- organic chemicals
- electrical machinery and articles
- electronic devices
- agricultural and horticultural machineries

Intra-industry trade can play an important role in boosting trade relations between BIMSTEC and Japan. This is because intra-industry trade can take place even in situations where the trade and production structures of the trading partners lack strong complementarities as observed between BIMSTEC and Japan. The average intra-industry trade in BIMSTEC+Japan is low, which indicates the scope for widening this type of trade within the region. An increased level of intra-industry trade can be achieved if the regional countries are able to develop the technological capacity to produce different product varieties at decreasing average cost. This technological assistance can be obtained by the BIMSTEC countries from Japan.

BIMSTEC can be benefited by forming export marketing alliance with Japan. BIMSTEC and Japan compete in the world market for fish, edible oils, vegetable products, fruits and nuts, clothing, textile yarn and crude animals. In this scenario, it would be in the interest of

the BIMSTEC countries to form an alliance with Japan for the marketing of their competing export products. This would promote mutual economic cooperation in the region on one hand, and to collectively reap the benefit on the other.

Although BIMSTEC countries have collectively gained substantial experience in agro-based industries, textiles and clothing, and light engineering, there seems to be scope for joint ventures with Japan in these areas. Such ventures will particularly benefit the small BIMSTEC countries which lack the resources to undertake industrial investment on an efficient scale.

To foster an economic cooperation, the size of tariffs would be crucial. Tariff rate should be kept sufficiently low to expose domestic industries in the region to some competition, but at the same time it should maintain some safeguards so that the domestic industries are not unfairly exposed to competitive imports. One of the ways may be applying uniform rate of duty on the import of a product from other regional partners. The duties on imports may be imposed to the extent by which exporting countries subsidise their exports.

The tariff level in Japan was as low as 2.4 percent in 2003, whereas the same was significantly higher in BIMSTEC countries. Although Japan has long since been trading partners with each of the BIMSTEC countries, the latter could not benefit from the imports from Japan due to high tariff and non-tariff barriers imposed by each of them. For example, in India, tariff imposed on imports from Japan works approximately along 7271 lines at present (increased from 2528 lines in 1997)⁶. The average tariff rate has also increased. On the contrary, to increase the trade volumes, these need to be reduced drastically.

There is an apprehension for the bloc countries that once tariffs are lowered; there will be a surge in imports from Japan which will take advantage of the liberalized tariff regime. On the other hand, exports from the BIMSTEC countries to Japan cannot rise significantly because of their existing lower tariffs on one hand and higher incidence of non-tariff barriers (NTBs) on the other. Therefore, there should be

a comprehensive program to liberalize NTB and remove in tandem with the liberalization of tariffs. Success of PTA and FTA depends on the liberalization of NTBs, and every member should prepare a comprehensive plan on how to minimize it⁷.

8. Conclusions

The study has highlighted various structural as well as policy induced factors that may have induced greater economic cooperation between BIMSTEC and Japan. It is emphasized that although various economic factors have contributed to a low level of intra-regional trade in the region; there exists potential for economic cooperation in some areas. Japan can act as a catalyst for sustaining economic growth in BIMSTEC region.

Japan, having much domestic natural resources, has been doing well and thereby enjoying rising wealth. On the other hand, BIMSTEC is endowed with relatively better natural resources but facing problems in the era of globalisation. This underlines the importance of cooperation and collaboration. Members in BIMSTEC and Japan are at different levels of economic and industrial development and different natural resource endowments. Hence, the complementarities between them are substantial. The technological supremacy of Japan could facilitate the exploitation of potential of efficiency seeking restructuring of industry in BIMSTEC, provided conditions for such restructuring are created.

The BIMSTEC countries need to pursue domestic reforms to improve upon their growth prospects. Countries like Bangladesh, India and Myanmar adopted a close door policy in their early stages of development. As a result their relations with Japan have not been very close. BIMSTEC countries will have to create an investor-friendly environment through speedier economic reforms and freeing the region from clutches of deregulation at the earliest in order to make the economic cooperation with Japan fruitful.

However, efforts to promote economic cooperation between BIMSTEC and Japan are unlikely to succeed in absence of political harmony and convergence in economic perceptions.

Endnotes

- ¹ This nomenclature became effective from July 31, 2004, which was earlier known as Bangladesh, India, Myanmar, Sri Lanka and Thailand – Economic Cooperation
- ² See, for example, CSIRD (2006) which carries some interesting studies on this subject.
- ³ See, Viner (1950)
- ⁴ Implication of Trade Creation and Trade Diversion Effect on Trade between RTAs and China and Australia: Tianshu Liu (2004).
- ⁵ The classifications of the sectors have been obtained from the United Nations Statistics Database (Commodity Trade Statistics Database) according to the HS 2002 sorting.
- ⁶ See, Bhattacharya and Bhattacharyay (2006).
- ⁷ See, Bhattacharya and Bhattacharyay (2006).
- ⁸ Due to space constraints, we avoid placing all the appendix. Interested readers may contact CSIRD for the same.

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