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## **QUANTITATIVE ANALYSIS OF SAFTA: A BANGLADESH PERSPECTIVE**

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### **Abstract**

The South Asian Free Trade Area (SAFTA) is the first FTA implemented in the South Asian region. The paper explores and analyses quantitatively the impact of SAFTA on trade flows and customs revenue of Bangladesh by using Partial Equilibrium (PE) framework. The paper also analyses in details the trade and revenue effects on some selected commodities at the aggregate level, and products have been selected for simulation on the basis of trade complementarity and export specialisation. The economic characteristics of South Asia and the salient features of the SAFTA agreement suggest that FTA alone may not generate substantial economic benefit for the countries of the region. The current trade structure reveals that there are only few commodities that demonstrate high trade complementarities and export specialisation between Bangladesh and other South Asian countries. The paper finds that the estimated trade generation by SAFTA is not substantial for Bangladesh and that the overall trade expansion is mostly driven by trade creation. Another finding is that most of the expanded trade would be generated by the efficient producer in the region. The likely consequences of SAFTA for Bangladesh's revenue would not be significant and the amount of any revenue loss would be at a manageable level for the country.

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## 1. INTRODUCTION

The economic doctrine prevailing in the present era of international trade is the theory of comparative advantage. According to this theory, international trade must be dictated by the comparative advantage of each country in producing certain products, and thus every nation would benefit from such trade.<sup>1</sup> In order to reap benefits from international trade it is essential to create a situation that is free from all trade barriers. Virtually, all countries of the world have sought to exploit the advantages of free trade through multilateral institutions under the aegis of WTO and regionally by forming regional trading arrangements (RTAs). South Asian countries have not stood aside from the trend towards RTAs.<sup>2</sup> They are either participants or potential participants in RTAs, and some of them participate simultaneously in several such agreements. The first initiative towards regional cooperation in South Asia was the South Asian Association for Regional Cooperation (SAARC) that was established in 1985. The SAARC countries started their economic integration with SAARC Preferential Trading Arrangement (SAPTA) that came into force in December 1995 and then moved towards even deeper economic integration - South Asian Free Trade Area (SAFTA). SAFTA was signed in 2004 and it came into operation from 1 July 2006.

SAFTA is the first FTA that came into operation in Bangladesh, as well as in the rest of the region. FTA is a matter of lively debate among politicians, non-governmental organizations (NGOs), businessmen, intellectuals and policy makers. Much of this debate is often fuelled by perceptions rather than careful review of the analytical framework or empirical foundations. Critics have pointed out that joining SAFTA exposes the poorer countries to the whims of the advanced countries that benefit more from this open access, leading to unequal exchange and exploitation. The popular view is that the potential benefits accrued from the SAFTA would be minimal. Most of these critics have pointed their fingers to the

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<sup>1</sup> Bo Sodersten and Geoffrey Reed, *International Economics*, MACMILAN Publishers, London, 1994, pp. 5-9.

<sup>2</sup> In this paper, SAARC countries, SAFTA countries and South Asian countries are used as substitutable and these countries are Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka.

limited complementarities in the region, the informal trade between member countries, the minimal intra-regional trade, the SAARC countries' western-directed trade, the inadequate preconditions for SAFTA, and the possibility of substantial trade diversion by SAFTA.

Another concern for Bangladesh is the possible loss of revenue due to the implementation of SAFTA. It is worth mentioning that Bangladesh's revenue to GDP ratio remains among the lowest in the world and most of its revenues come from import related taxes. Due to the low revenue collection, public investment in infrastructure and human capital has been inadequate in Bangladesh compared with most countries in the world.<sup>3</sup> Although the concerns of the least developed countries (LDCs) in this regard are reflected in the SAFTA agreement, as it includes the mechanism for compensation of revenue loss to be incurred by LDCs, the debate over revenue loss and compensation mechanism has not yet abated.

The objective of the paper is to analyse the impact of SAFTA on the trade flows and customs revenue of Bangladesh in the light of this regional trade arrangement and thus contribute modestly to the debates. Before going to examine the impact of SAFTA, it is desirable to analyse in brief the SAFTA agreement itself. The agreement is the blueprint of shaping future trade relations in this region. Although SAFTA is in operation, a careful investigation at the product level is also required to know the probable opportunities or losses for the product. The paper aims to analyse in details the trade and revenue effects for selected commodities at the aggregate level. Against such a backdrop, the paper is organised in six sections, including the introductory one. The second section discusses about the methodology and data required for the quantitative analysis of SAFTA. A brief overview of South Asian trade patterns and an analysis of SAFTA agreement are highlighted in the third and fourth sections respectively. Section five presents a quantitative analysis of trade gains and revenue loss in the context of Bangladesh. The final section highlights certain limitations of the paper and ends with some concluding remarks.

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<sup>3</sup> Trade Policy Review: Bangladesh, WTO, 2006, available at: [http://www.wto.org/english/tratop\\_e/tpr\\_e/tp269\\_e.htm](http://www.wto.org/english/tratop_e/tpr_e/tp269_e.htm), accessed on July 4, 2008.

## 2. METHODOLOGY

The paper has used partial equilibrium (PE) framework while analysing one product, with all other markets remaining constant. The SMART simulation technique, jointly developed by the UNCTAD and the World Bank (WB) and widely utilised by negotiators of both bilateral and multilateral trade agreements, is used to quantify trade gains. The PE model developed by Hoekman and others (2001), modified to incorporate domestic taxes into the import demand and revenue, is used for simulations and calculations of revenue effect.<sup>4</sup> The paper is based on the cross sectional data covering the year 2005. The major sources of data for the estimation are WITS (World Integrated Trade Solution), ITC Trade Map, Tariff and Trade Database of OECD, and the National Board of Revenue (NBR) of Bangladesh.

For quantification of the effects on trade flows, partial equilibrium model (see Methodological Appendix-1) is applied with different trade indexes, explaining in details with all main equations, the analytical tools and the steps required to arrive at the final results. For the quantitative analysis, the author has applied simulation only for four member countries of SAFTA - Bangladesh, India, Pakistan and Sri Lanka - and has analysed the data on bilateral basis and not treating the SAFTA as a group. Like Calfat and Flores (2006), a filtering mechanism is used to assess prospective products for trade effect. The following criteria are used as filters<sup>5</sup>:

- i. Complementarity between one country as exporter and another country as importer;
- ii. World comparative advantage (for the exporting country);
- iii. The tariff the product faces in the importing country is equal or more than 6 per cent;

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<sup>4</sup> Bernard Hoekman, *et.al.*, "Eliminating Excessive Tariffs on Exports of Least Developed Countries", *Policy Research Working Paper 2604*, World Bank, 2001, Washington, D.C.

<sup>5</sup> G Calfat and R.G.Jr Flores, "The EU-Mercosul Free Trade Agreement: Quantifying mutual gains" *Journal of Common Market Studies*, Issue 44, No. 5, 2006, pp. 865-1116.

- iv. The product is not in the sensitive list of the importing countries under SAFTA.

If the product scores high in the first three dimensions, it is considered to have prospective gains from the agreement. Trade Complementarity Index (TCI) and Revealed Comparative Advantage (RCA) are used to assess the first two requirements. For the third requirement, tariff data is used for the simplicity that tariff liberalisation will apply only on tariff. The quantitative analysis is performed at six-digit level of the Harmonized System (HS) code. Calculation of TCI, RCA, and trade creation (TC) and trade diversion (TD) is based on the data of 2005. Before going to present the outcome of calculation, one thing should be mentioned that the calculation is based on statistics of formal data. Considering tariff lines, in which no trade occurred before liberalisation, the calculation would project no trade after liberalisation either. When the absence of trade is caused by a lack of comparative advantage of the commercial partner, this is the course of a perfectly acceptable projection. Absence of trade is not only due to the lack of comparative advantage but also due to prohibitive tariffs, non-tariff barriers, stringent rules of TBT, SPS and rules of origin and many other reasons. If non-tariff, para-tariff and other barriers are withdrawn and informal trade directed through formal channel, the simulation would be an underestimation.

On the other hand, to calculate revenue effect the paper has incorporated excise taxes and other surcharges and VAT into the import demand and revenue equation in the model (see Methodological Annex-2) developed by Hoekman and others. The impact of implementing FTA on customs revenue is examined on the basis of the country's tariff level prior to joining the FTA, the trade liberalisation programme under FTA and import demand elasticity. Based on the trade flows and trade policy data in 2005, the revenue effect is estimated only for Bangladesh.

### **3. SOUTH ASIAN TRADE: A BRIEF OVERVIEW**

There are enormous variations in South Asian countries in terms of the size of their population and the size and other characteristics of their economies. Table 1 illustrates the points by presenting population, GDP, trade per capita, trade to GDP ratio and share in

the world trade of the seven South Asian countries in 2005. The SAARC countries' total population is almost 1.56 billion and their combined gross domestic product is US\$2.6 trillion measured at current rate. India is by far the largest economy in South Asia, followed by Pakistan and Bangladesh. India alone represents 80 per cent of the region's GDP and 76 per cent of the its population. This region is one of the most densely populated and poorest regions in the world. South Asia accounts for merely 2 per cent of global GDP whereas almost one-fifth of global population lives here.<sup>6</sup> The economic size of the region remains tiny; this region accounts for 2.53 per cent of world exports and 2.55 per cent of world imports. If India is excluded, the share of South Asian exports in the global total becomes 0.31 per cent and the share of South Asian imports in the world import becomes 0.47 per cent. The trade GDP ratio of India, Pakistan and Bangladesh is not as much as other small economies in the region. As the region remains poor and the trade is not contributed much to the GDP, trade per capita for most of these countries is also poor. Bangladesh, Bhutan, Nepal and Maldives are Least Developed Countries (LDCs), designated by the UN, while India, Pakistan and Sri Lanka are considered as developing countries. As of 2007, all South Asian countries, except Bhutan (Observer), are members of WTO. Considering the economic characteristics of South Asian countries - mainly small regional market relative to the world both in terms of GDP and trade flows and the high level of external protection – the World Bank (2007) envisages that regional integration may not generate the beneficial productivity and growth in the region<sup>7</sup>.

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<sup>6</sup> "India Country Note South Asia Regional Economic Cooperation: Private Sector Perspectives", *World Bank Annual Program*, 1 October, 2004, Washington, D.C.

<sup>7</sup> "South Asia: Growth and Regional Integration" WB, 2007, Washington D.C., available at :  
<http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/SOUTHASIAEXT/0,,contentMDK:21224087~pagePK:2865106~piPK:2865128~theSitePK:223547,00.html>, accessed on 07 July 2008.

**Table 1: Population, GDP and Trade Related Indicators of South Asian Countries, 2005**

	Populati on (In thousan d)	GDP		Trade Per capita *	Trade to GDP ratio *	Share in world trade	
		PPP (Current US\$ m)	Current US\$ m			Exports	Imports
Banglade sh	141,822	283,225	59,958	153	38.0	0.09	0.13
Bhutan	918	----	840	593	73.2	0.00	0.00
India	1,094,58 3	3,815,553	785,468	235	36.6	2.22	2.08
Maldives	329	----	817	3,982	166.3	0.00	0.01
Nepal	27,133	41,485	7,346	128	51.3	0.01	0.02
Pakistan	155,772	374,313	110,732	172	33.1	0.15	0.23
Sri Lanka	19,582	89,481	23,479	831	78.3	0.06	0.08

**Source:** WTO Statistics database, 2007

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\* denotes that trade per capita and trade to GDP ratio data are in 2003-05.

It is evident from the trade statistics (Table 2) that the intra-regional trade in South Asia did not increase substantially during the 1980s. It has steadily increased after 1990. Unilateral trade liberalisation policies took place in India, Pakistan, Bangladesh and Nepal in the 1990s and these unilateral policy reforms contributed to a more rapid expansion of trade not only outside but also between each other. The total intra-South Asian export was US\$ 640 million in 1980, which went up to US\$ 861 million in 1990. In 1996, the total intra-regional export increased to US\$ 2,242 million - just within 6 years. It further promisingly increased in 2005 and stood at US\$ 7,062 million. Nevertheless, it is noteworthy that despite such increment in export, it did not contribute much to the growth of intra-regional export, as evident from the share of intra-regional export in global export of South Asian countries. It was only 4.9 per cent in 1980, which remained almost the same in 2005 with 5.5 per cent.

**Table 2: Intra-regional Export in South Asia since 1980 (In million \$ US)**

Country	1980	1985	1990	1996	2001	2003	2005
Bangladesh	68.5	77.4	60.0	60.9	92.1	109.2	186.5
Bhutan				97.1	106.7	116.9	
India	307.0	22.0	487.0	1,650.0	2,051.0	2,785.0	5129.0
Maldives	2.1	4.1	7.0	11.0	17.0	15.7	17.2
Nepal	23.9	45.8	15.0	74.1	243.8	335.2	343.7
Pakistan	165.7	145.4	223.0	240.0	264.0	342.0	733.0
Sri Lanka	73.2	53.3	59.0	109.0	157.7	350.1	653.4
Grand Total	640.0	551.0	861.0	2,242.1	2,931.7	4,054.0	7,062.7

**Source:** IMF Direction of Trade Statistics, 2006.

On the other hand, intra-regional import in South Asia did not register any significant growth during the nineteen eighties, which stood at US\$ 603 million in 1980 and US\$ 729 million in 1990. In the 1990s, a steady increase was observed, having gone up to US\$ 2,866 million in 1996. By 2005, the total intra-regional imports went up to US\$ 7,103 million. However, intra-regional import over total import of South Asian countries represented 2.4 per cent in 1980 and 3.83 per cent in 2005.

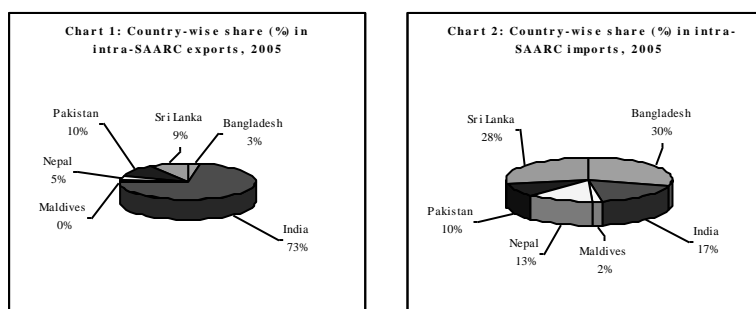
**Table 3: Intra-regional Import since 1980 (In million US\$)**

Country	1980	1985	1990	1996	2001	2003	2005
Bangladesh	96.7	87.8	257.0	1,129.7	1,299.1	1,608.1	2119.0
Bhutan				80.6	152.4	193.4	
India	141.0	125.0	97.0	198.0	504.0	754.0	1241.0
Maldives	4.7	6.5	18.0	60.6	93.2	114.2	129.3
Nepal	104.9	96.7	52.0	457.0	178.5	238.1	921.6
Pakistan	124.5	95.1	121.0	293.0	295.0	314.0	711.0
Sri Lanka	131.3	117.9	184.0	647.0	712.5	1,175.4	1981.1
Grand Total	603.0	529.0	729.0	2,866.0	3,234.6	4,397.1	7,103.1

**Source:** IMF Direction of Trade Statistics, 2006



Bangladesh is the leading regional importer in South Asia (Chart 1). A careful analysis of intra-regional trade reveals that whatever increase is observed in intra-South Asian export during the 1990s and thereafter was due to a sharp increase of exports of India to other South Asian countries, notably to Bangladesh and Sri Lanka. In fact, the increasing trend of imports to Bangladesh was observed throughout the period between 1990 and 2003 due to trade liberalisation measures initiated by Bangladesh in the early 1990s. On the other hand, import of Sri Lanka from India increased since 2000 because of the commencement of Indo-Sri Lanka Free Trade. Chart 2 reveals that regional export is dominated by India and it accounts for three-fourths of the intra-regional exports. Apart from Maldives, Bangladesh is the lowest exporter in South Asia as far as regional exports are concerned.



Intra-regional trade in the SAARC region as a share of total merchandise trade of SAARC region is very low, even less than 5 per cent. Insignificant bilateral trade between India and Pakistan persistently resists expanding of intra-regional trade in South Asia. Compared to other regions, intra-regional trade as a share of GDP was also lowest for the South Asian economies<sup>8</sup>.

#### 4. SAFTA AGREEMENT: AN ANALYSIS

A circumspect view of the SAFTA agreement reveals that the agreement is implemented through a number of core instruments such as trade liberalisation programme (TLP), rules of origin,

<sup>8</sup> Global Economic Prospect 2005, World Bank.

institutional arrangements, consultations and dispute settlement procedures, safeguard measures, technical assistance for LDCs, revenue compensation mechanism, etc. SAFTA consists of arrangements relating to tariffs, para-tariffs, non-tariff measures and direct trade measures.

#### 4.1. Trade Liberalisation Programme

Trade liberalisation programme (TLP), which is the most important part of the agreement, has three components: period and pace of tariff reduction, product coverage and provisions for addressing para-tariff and non-tariff barriers. The TLP provides for different time frame for tariff reduction by LDCs and non-LDCs. It also requires accelerated tariff reduction by non-LDCs for the products of LDCs. Tariff will be reduced from MFN tariffs applied on 1 January 2006, which are considered as the base rates. Thus, the agreement requires tariffs to be reduced to zero to five per cent by non-LDCs among them, following the next schedule:

**Table 4: Pace of Tariff Reduction by non-LDCs to non-LDCs**

Tariff lines	SAFTA tariff on 1 July 2006	SAFTA tariff on 31 December 2006	SAFTA tariff on 31 December 2007	31 Dec. 2008 to 31 Dec. 2012 (SL 2013*)
Lines >20%	$(t-20)/4$	$(t-20)/4$	$(t-20)/2$	(0-5)% in 5 equal instalments (SL 6 Instalments)
Lines < 20%	5% MoP	10% MoP	10% MoP	

- MoP means margin of preference ,  $t$  denotes the MFN tariff applied on 1 January 2006
- \* For Sri Lanka 1 extra year.

The non-LDCs are required to reduce their tariffs to zero to five per cent within three years for the products of LDCs. The agreements provide longer time frame for LDCs to reduce their tariff. They are required to reduce their tariffs for both LDCs and non-LDCs by 31 December 2015. It is evident from the TLP that LDCs have been given sufficient flexibility to reduce their tariffs in terms of longer time period. Moreover, LDCs will be provided market access opportunity within shorter periods by non-LDCs. So, it can be

deduced that the agreement takes care of the vulnerability of the economies of LDCs, on the one hand, and gives increased opportunity, on the other, for export products of LDCs in non-LDC markets.

### *Sensitive List*

The extent of benefits to be accrued under SAFTA largely depends on the size of the sensitive lists and their product coverage since tariffs on the products covered by the sensitive lists are not subjected to reduction. The sensitive lists shall be reviewed after every four years with a view to reducing the number of items.

**Table 5: Size of the Sensitive Lists under SAFTA**

Country	Total number of products in Sensitive List (6-digit HS)		Coverage of Sensitive List as % of Total HS Lines (6-digit HS)	
	For Non-LDCs	For LDCs	For Non-LDCs	For LDCs
Bangladesh	1,254	1,249	24.0%	23.9%
Bhutan	157	157	3.0%	3.0%
India	865	744	16.6%	14.2%
Maldives	671	671	12.8%	12.8%
Nepal	1,335	1,299	25.6%	24.9%
Pakistan	1,191	1,191	22.8%	22.8%
Sri Lanka	1,079	1,079	20.7%	20.7%

**Source:** Author's own calculation from SAFTA Sensitive List<sup>9</sup>

A detailed analysis of the sensitive lists shows that Bangladesh is not willing to open up the sectors like textiles and clothing, base metal, electrical appliances and miscellaneous industrial products, while Bhutan tries to protect prepared foodstuff, vegetable products, mineral products and wood products. On the other hand, most sensitive products for India are vegetable products, apparel and

<sup>9</sup> "SAFTA Sensitive List", available at: [www.saarc-sec.org](http://www.saarc-sec.org), accessed on 4 July, 2008

plastic and rubbers, while Nepal gives importance to animal products, vegetable products, prepared foodstuff, plastic and rubber and textiles and clothing. Pakistan has given importance to plastic and rubber products, textiles and clothing, machinery and electrical appliances, base metal and articles. The major items included in the sensitive list of Sri Lanka are vegetable products, prepared foodstuff, plastic and rubber products, animal and animal products and base metal and products. Maldives basically gives importance to plastic and rubber products and base metal.

### ***Tariff Rate Quota of Garments***

Under tariff rate quota (TRQ), India agreed to provide duty free access from 1 July 2006 for readymade garments, which are covered by sensitive lists in the following manner:

- 3 million pieces made of fabrics, yarn of Indian origin;
- 3 million pieces made of fabric produced either in Bangladesh or India; and
- 2 million pieces by satisfying the SAFTA rules of origin.

Moreover, India agreed to remove specific duty on 99 tariff lines of textile sector from the date of implementation and 105 tariff lines of textile sector on which specific duty would be removed within three years of implementation.

### **4.2. Rules of Origin**

The Rules of Origin (ROO) agreed under SAFTA are general in nature (i.e. single criterion for all products). In order to enjoy preferential market access under SAFTA a product must undergo sufficient processing for changing the tariff heading from the non-originating inputs and for having value at least 40 per cent value addition of fob value. However, value addition requirements are lower for LDCs - 30 per cent of fob value – while 35 per cent of fob value for Sri Lanka. Moreover, regional cummulation rules are applied if the aggregate value addition is 50 per cent and the exporting country has at least 20 per cent value addition and sufficient processing for changing the tariff heading from the non-originating inputs.

### 4.3. Mechanism for Compensation of Revenue Loss

A mechanism has been established to compensate the probable revenue loss to be incurred by the LDCs due to reduction in tariffs. The compensation will be paid in cash in US dollars and partial. Revenue loss will be estimated using a formula and compensation will be available for four years (for Maldives compensation will be available for six years). The extent of compensation for each of the LDC contracting members is different only in percentage of the customs duty collected from SAARC import in 2005 - 1 per cent for the first year, 2 per cent for the second year, 5 per cent for the third year and 3 per cent for the fourth year; for Maldives it is 5 per cent for the fifth and sixth years. It is only an apparent success for LDCs that such type of provision is there in the agreement considering their vulnerability, for the extent of compensation is not that impressive.

## 5. A QUANTITATIVE ANALYSIS OF SAFTA: BANGLADESH PERSPECTIVE

### 5.1. Impact on Trade Flows

RTAs are likely to succeed in strengthening intra-regional trade if the trade structures of member countries exhibit strong complementarities. However, the existing South Asian trade structure shows a limited number of products with high trade complementarities. High trade complementarity of Bangladesh exports in other SAARC countries is summarised in the following table 6.

**Table 6: Trade Complementarities of Bangladesh Products in Other SAARC Countries**

Importing country	No HS lines (6-digit HS)	Major Products
India	27	Jute, jute yarn, jute twine, jute sacks, anhydrous ammonia, cotton waste, leather, vegetable fats etc.
Sri Lanka	14	Jute fabrics, terry towel, coriander seeds, textile products, Jute twine, Jute sacks, Jute yarn, etc.
Pakistan	15	Jute, tea, vegetable products, textile machinery, urea, bamboo, synthetic fibres, jackets, etc.

**Source:** Author's own calculation

The outcome of TCI for certain products like jute, jute yarn, twine, rope of jute, jute sacks is surprisingly high, as Bangladesh is one of the major producers of jute and jute products in the world. South Asian countries are the major importers of those products. On the other hand, other South Asian countries have high trade complementarities mainly in cotton, fabrics, and textile materials in Bangladesh market that can be seen in the following table 7. Pakistan and India produce high-quality cotton and they export good volume of cotton and textiles all around the world. On the other hand, readymade garments are the prime export items of Bangladesh and Bangladesh imports most of its textiles and accessories from rest of the world, including South Asia. The trade complementarities show the intuitive results for these products. India being one of the major import sources of Bangladesh shows high trade complementarity in wide range of products. The TCI shows that Sri Lanka has high trade complementarities in copra, coconut oil, textile labels, enzymes, etc.

**Table 7: Trade Complementarities of Other SAARC Countries' Products in Bangladesh**

Exporting country	No HS lines (6-digit HS)	Major Products
India	181	Yarn, cotton, woven fabrics, textile materials, lentils, turmeric, machinery, onions, aluminium wire, steel tubes, chemicals, foods, ores and basic metals, etc.
Sri Lanka	27	Woven fabrics, cotton, copra, crustaceans, labels, coconut oil, enzymes, insecticides, etc.
Pakistan	101	Cotton, fabrics, textile materials, cumin seeds, motor-cycles, nuts, etc.

**Source:** Author's own calculation

Export specialisation of Bangladesh in other SAARC countries and other SAARC countries' export specialisation in Bangladesh are shown in the table 8 and 9 respectively. Jute and jute products are the main areas of Bangladesh's specialisation. Although Bangladesh exports its RMG to many countries of the world, very few are exported to South Asia, particularly to India. Why is it so? It is found

that most of Bangladesh's apparel and textile products are facing compound tariffs in these countries; in such a case the imported product is subjected to the higher ad-valorem or specific duties (5.3 per cent of Indian tariff line). Moreover, import of Bangladesh's textile and textile articles are facing technical regulation in that these products shall not contain any of the hazardous dyes whose production, carriage or use is prohibited by the Government of India. This type of non-tariff barriers (NTBs) in Indian trade policy thwart Bangladesh's exports to India.

**Table 8: Export Specialisation of Bangladesh in Other SAARC Countries**

Importing country	No HS lines (6-digit HS)	Major Products
India	20	Jute, jute twine, jute sacks, jute yarn, anhydrous ammonia, cotton waste, saltwater fish, etc.
Sri Lanka	8	Jute fabrics, terry towel, jute twine, jute sacks, jute yarn, etc
Pakistan	7	Jute, tea, jute fabrics, vegetable products, urea, bamboo, jackets, etc.

**Source:** Author's own calculation

Although India is one of the major sources of imports for Bangladesh, it has trade complementarity in 181 HS lines while only 36 HS lines have high export specialisation. It means that imports of Bangladesh from India are not coming from the most competitive source since these products do not show a high export specialisation. Pakistan demonstrates high export specialisation in 53 HS lines and most of these products are textile related and few others from motorcycles, nuts, cumin seeds, etc. Sri Lanka has high export specialisation in only 9 HS lines.

**Table 9: Export Specialisation of Other SAARC Countries in Bangladesh**

Exporting country	No HS lines (6-digit HS)	Major Products
India	36	Yarn, cotton, lentils, turmeric, onions, machinery for sugar, woven fabrics, textile materials, aluminium wire, steel tubes, chemicals, foods, ores and basic metals, etc.
Sri Lanka	9	Copra, crustaceans, woven fabrics, cotton, labels, coconut oil, enzymes, etc.
Pakistan	53	Cotton, fabrics, textile materials, cumin seeds, motor cycles, nuts, etc.

**Source:** Author's own calculation

Before going to check the opportunities for Bangladeshi exportable products to different SAARC countries, the products that have already enjoyed the preferential access in different SAARC countries need to be identified (Table 10). It is evident that Bangladesh has already got preferential access in other SAARC countries. Most of its exportable products include jute and jute products, fertiliser, etc at different rates.

**Table 10: Products with Preferential Access Enjoyed by Bangladesh in Other SAARC Countries under SAPTA and APTA**

Country	Products
Bhutan	Preparation of cereals, soap, ceramic products, footwear, tea, pharmaceutical products,
India	Fish, edible oil, Fertiliser, Sugar confectioneries, biscuits, preparations of vegetables, pharmaceutical products, paints and varnishes, cosmetics, soap, Plastic products, Leather products, textiles and clothing, Jute and jute products, footwear, ceramic products, artificial flower, electrical goods, Clocks and watches, Furniture, etc.
Nepal	Fruit juices, pharmaceutical products, cosmetics, cotton fabrics, footwear, ceramic products, etc.
Maldives	Leather goods, paints and varnishes, etc.
Pakistan	Cotton yarn and fabrics, tea, jute and jute yarn, clocks and watches, silk yarn and fabrics, bamboo, molasses, tobacco, betel leaves.
Sri Lanka	Glycerol, cosmetics, leather, jute fabrics, jute carpets, etc.

**Source:** Based on Consolidated National Schedule of Concessions



Through the four steps of filtering process, it is found that Bangladesh exhibits trade opportunities for 13 HS lines at 6-digit level in India, 1 HS line at 6-digit level in Pakistan and 1 HS line at 6-digit level in Sri Lanka. These selected 13 HS products account for 40 per cent of the total export of Bangladesh to India. The highest number of opportunities of 5 HS lines exists in the jute sector. In case of Pakistan, the only opportunity is bamboo that accounts for an insignificant share of total Bangladeshi export to Pakistan. The only opportunity in Sri Lanka is jute bag that accounts for 3.6 per cent of total Bangladesh's export to Sri Lanka. Those HS lines have high trade complementarity and export specialisation for Pakistani and Sri Lankan market; most of these products are facing very low tariff protection therefore they were screened out by the filters. Table 11 shows number of opportunities for Bangladesh in the South Asian market and table 12 shows the frequency of opportunities for Bangladesh.

**Table 11: Opportunities for Bangladesh's Export in Other SAARC Countries**

Importing country	No of opportunities (6-digit HS level)	% of total exports
India	13	39.63
Sri Lanka	1	3.60
Pakistan	1	0.11

**Source:** Author's own calculation

Among the three countries, Pakistan has the highest number of trade opportunities in Bangladesh; the opportunities contain 22 HS lines, which cover almost half of its export to Bangladesh. India and Sri Lanka have opportunities in 19 HS lines and 1 HS lines that do not cover significant share of their own exports to Bangladesh. The numbers of HS lines at 6-digit level that have high complementarity and export specialisation but screened out by the filter of sensitive list of Bangladesh under SAFTA are as follows: for Pakistan 27 (out of 53), for India 13 (out of 36) and Sri Lanka 8 (out of 9).

**Table 12: Frequency Distribution of Opportunities for Bangladesh**

HS 2-digit	Description	No of opportunities (6-digit HS level)		
		India	Sri Lanka	Pakistan
14	Vegetable plaiting materials, vegetable products			1
15	Animal, vegetable fats and oils, cleavage products, etc	1		
17	Sugars and sugar confectionery	1		
52	Cotton	2		
53	Other vegetable textile fibres, paper yarn and woven fabrics of paper yarn	5		
56	Wadding, felt, non-wovens, yarns, twine, cordage, etc	1		
63	Other made textile articles, sets, worn clothing etc	1	1	
65	Headgear and parts thereof.	1		
79	Zinc and articles thereof.	1		
Total		13	1	1

**Source:** Author's own calculation

**Table 13: Opportunities for Other South Asian Countries in Bangladesh**

Exporting country	No of opportunities (6-digit HS level)	% of total exports
India	19	7.27
Sri Lanka	1	16.84
Pakistan	22	48.27

**Source:** Author's own calculation

The most frequent opportunities for other SAARC countries are in the cotton sector; 20 HS lines of Pakistan, 6 HS lines of India and only 1 HS lines of Sri Lanka are in this sector. India has opportunities in wide range of sectors. The other frequent opportunities are related also to the textile sectors.

**Table 14: Frequency Distribution of Opportunities for Other South Asian Countries in Bangladesh**

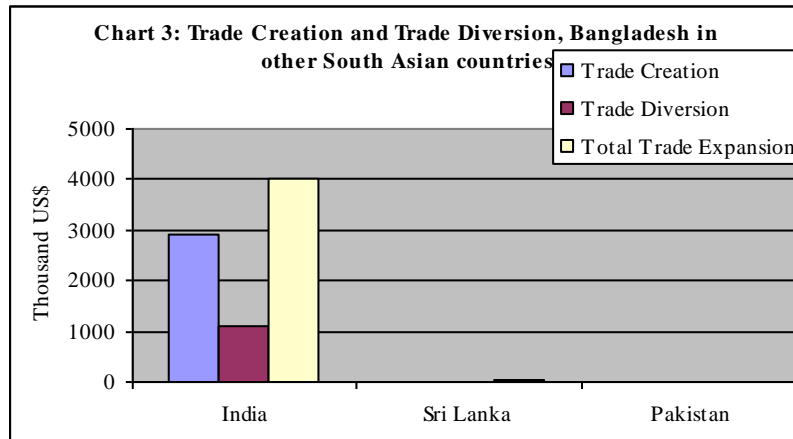
HS 2-digit	Description	No of opportunities		
		India	Sri Lanka	Pakistan
09	Coffee, tea, mate and spices			1
13	Lac, gums, resins, vegetable saps and extracts	1		
25	Salt, sulphur, earth, stone, plaster, lime and cement	1		
26	Ores, slag and ash	1		
32	Tanning, dyeing extracts, tannins, derives, pigments etc	1		
48	Paper & paperboard, articles of pulp, paper and board	1		
52	Cotton	6	1	20
54	Manmade filaments	2		
55	Manmade staple fibres	3		
60	Knitted or crocheted fabric			1
72	Iron and steel	1		
73	Articles of iron or steel	1		
84	Nuclear reactors, boilers, machinery, etc	1		
Total		19	1	22

**Source:** Author's own calculation

### ***Bangladesh's Gains in Other SAARC Countries***

Market access simulations are performed for a subset of the products exhibiting trade opportunities. For the simulation, consideration is emphasised on only a full tariff liberalisation, which means that the final tariff would be per cent ad-valorem. Trade expansion with the category of TC and TD of the selected Bangladeshi export products is depicted in chart 3. For India, the 13 HS Bangladeshi export product show a total trade expansion of 4 million US dollars in which TC effect of almost 2.9 millions of US dollars and TD effect is 1.1 millions of US dollars. The scenario reflects that after full implementation of SAFTA (3 years for LDCs products in Non-LDCs) for the selected 13 products would generate

4 million dollars of additional exports. Bangladesh's current export of these 13 products is 50.54 million US dollars, which represents 8 per cent increase over their actual export volume towards India. Moreover, in such a case, trade creation dominates over trade diversion.



**Source:** Author's own calculation

On the other hand, trade expansion for the selected products in Pakistan and Sri Lanka is insignificant - only 9 thousand and 29 thousand US dollars respectively. However, for the selected products export to Pakistan and Sri Lanka will be increased by 12 per cent and 9 per cent of the pre-SAFTA amount. In case of bamboo exports, expansion is driven by trade diversion effect in the Pakistani market.

At the product level, trade expansion of Bangladeshi selected exportable products in India is presented in table 18. The highest export in terms of volume will be generated in jute sacks - almost 1.2 million US\$ followed by jute - and these products have higher trade creation effect implying that Bangladesh will be the cheapest source of import for these categories of products. The highest export in terms of percentage will be generated in zinc waste and hat. On the other hand, trade diversion will be generated by jute twine and unbleached woven fabrics. This implies that Bangladesh will export to India, although it is a relatively high cost producer.

**Table 15: Bangladesh's Gains in India (In thousand US \$)**

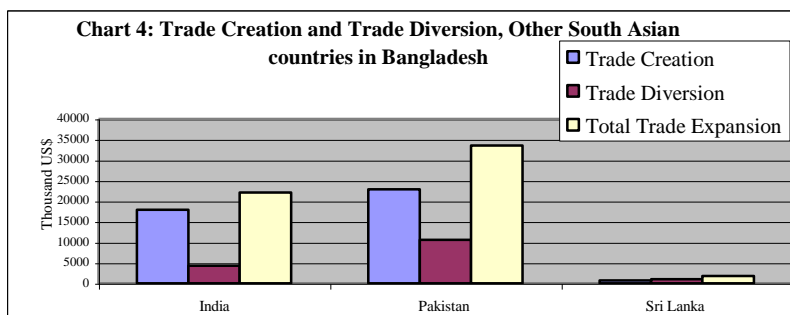
HS Code	Description	TC	TD	Total effect	% Change
152000	Glycerol, crude; glycerol waters & lyes	15.16	28.22	43.38	27.46
170310	Cane molasses resltd frm extractn/rfng of sugr	92.47	154.45	246.92	28.19
520299	Other cotton waste	124.59	114.83	239.42	15.57
521122	Mxd cotn fabrics of bled & 3 thrd or 4-thrd twl incl cross twl wegn> 200gsm	6.80	3.30	10.1	14.23
530110	Flax raw or retted	0.01	0.05	0.06	0.05
530310	Jute & othr txtl bast fbres,raw or retted	622.20	2.03	624.23	2.96
530710	Yarn ofjut & othr txtl bast fbres, single	406.70	19.95	426.65	8.15
530720	Multiple folded or cabled yarn of jute	122.88	22.44	145.32	9.19
531010	Unblechd woven fabrics of jute/other textile bast fibres	139.89	180.72	320.61	17.80
560710	Twine, cordage, rope & cables, of jute or othr textile bast fbres of headng no 5303	266.11	283.33	549.44	16.04
630510	Sacks & bags for packing, made of jute or of othr txtl bast fbres of hdg no.5303	1,018.69	168.81	1,187.5	8.36
650100	Hat-forms-hat-bodies & hoods of felt nthr blkcd to shape nor wth made brims plateaux& manchons (incl slit manchons) of felt	27.26	12.74	40	40.40
790200	Zinc waste and scrap	46.34	83.75	130.09	42.51
<b>Total</b>		<b>2,895.52</b>	<b>1,102.95</b>	<b>3,833.63</b>	<b>7.59</b>

**Source:** Author's own calculation

### ***Other South Asian Countries' Gains in Bangladesh***

Other South Asian countries' potential trade gains are also simulated in a scenario with zero final tariffs. However, Bangladesh will reduce tariff up to zero to five per cent by the end of 2015. That means the simulated trade expansion will take place in 2016. Among three South Asian countries, Pakistan has the potential to

gain more in Bangladeshi market as the estimated trade expansion for selected 22 products at 6-digit level amounts to a total of 33.5 million US dollars, from which US\$ 22.9 million is trade creation and 10.6 million is trade diversion. The current export volume of these 22 products represents 113.5 million US dollars; as such, the estimated export expansion of these products represents a 30 per cent increase in the export trade. Almost all of this trade will be generated in the cotton sector. Though overall trade creation dominates over trade diversion, one-third of the newly generated export will come from Pakistan, which is a high cost producer. On the other hand, India has more TC effect as it will generate exports of US\$ 22 million, of which TC accounts for 18 million and only 4 million from TD for its 19 products at 6-digit HS level. Most of this trade will be created by cotton, aluminium ware, steel tubes and fabric dyes. In case of Sri Lanka, only one product - woven fabrics of cotton - will produce a trade worth US\$ 1.75 million and most of the generated trade will fall into trade diversion. This means that Bangladesh will import woven fabrics of cotton from high cost producer, Sri Lanka. From the product level analysis, it can be determined that most of other South Asian countries export will be generated in cotton, fabric and textile related sector.



**Source:** Author's own calculation

From the estimated trade expansion, it is found that Bangladesh has high export expansion in India compared to Pakistan and Sri Lanka. On the contrary, Pakistan has a high potential to gain in Bangladeshi market. Comparing net trade gain between Bangladesh and other countries reveals that it is always against Bangladesh. Contemporary economic literature uses different approaches to

determine the impact of South Asian integration and comes up with different outcomes. As the study was based on static data, the used method was unable to capture the impact of SAFTA on those products, which have not been recorded in trade figure. Current trade structure reflects that there are limited trade complementarities and export specialisation between Bangladesh and other SAARC countries. Bangladesh has limited scope of trade expansion. Unlike other studies, this estimation shows that trade creation is dominant over trade diversion in most of the cases for the selected products.

## 5.2. Impact of Revenue

Tariffs and other duties on imports presented in table 16 show that Bangladesh has lowered its import tariffs substantially over time. As part of rationalisation of tariff structures, maximum tariff has been reduced from 350 per cent in 1990-91 to 25 per cent in 2005-06. Number of tariff slabs reduced from 18 in 1990-91 to 4 in 2005-06. In 2005-06 MFN tariffs are applied in four slabs zero, 6 per cent for basic raw materials, 13 per cent for intermediate goods and 25 per cent for finished products. Now, all tariffs are *ad valorem* type and this simplified tariff structure makes it more transparent reducing the administrative burdens of dealing with a complex and high number of tariff slabs. Bangladesh maintains other border charges and levies at import stages like infrastructure development surcharge (IDSC), advance income tax (AIT), etc. for additional protection. IDSC is applied at the rate of 4 per cent of the c.i.f. values on all import products except 257 HS lines (at 8-digit level) and AIT is levied on all imports at the rate of 3 per cent of the c.i.f. value of imports. Value added tax (VAT) is levied at the rate of 15 per cent on all imports and domestically produced goods except 774 HS lines (8-digit level). The advance trade VAT is introduced on 1 September 2004 at 1.50 per cent on almost all imports and domestically produced goods. Supplementary duties (SD) are, in principle, imposed on imports of luxury goods, and production and supply of goods and services are considered undesirable on social, moral and religious grounds. Three highest SD rates of 100 per cent, 250 per cent and 350 per cent are applied for alcoholic beverages, tobacco products, and road transport equipment, and parts. Regulatory duty (RD) is levied on 1 HS lines at the rate of 12 per cent. (WTO Trade Policy Review 2006: Bangladesh)

**Table 16: Tariff and Other Duties on Imports, 1999-00 and 2005-06**

	1999-00		2005-06	
Customs Tariff				
Number of tariff bands	18		4	
Maximum rate (%)	350.00		25.00	
	<i>Ad valorem</i> rate (%)	Coverage (% of tariff lines)	<i>Ad valorem</i> rate (%)	Coverage (% of tariff lines)
Customs tariff	0-37.5	100.0	0-25.0	100.0
Other border charges				
IDSC	2.5	98.4	4.0	96.2
AIT	2.5	100.0	3.0	100.0
LCA/IPP fee	2.5	89.6	n.a.	n.a.
Internal taxes				
VAT	15.0	93.7	15.0	88.3
Advance trade VAT	n.a.	n.a.	1.5	92.3
SD	5.0-270.0	6.6	20.0-350.0	15.8
RD	n.a.	n.a.	5.0-30.0 (2003/04) or 12.0 (2005/06)	334 tariff lines or 1 tariff line

**Source:** WTO, 2006

Bangladesh has been persistently facing the problem of low revenue collection since 1988-99 and the revenue to GDP ratio remains among the lowest in the world, around 10 per cent, owing to narrow tax base and problems encountered in tax collection. Almost 80 per cent of the country's revenue come from tax revenues and



mainly from import-related taxes.<sup>10</sup> Import related tax accounts for more than half of Bangladesh's total revenues. In 2004-05 the total revenue of Bangladesh was around 5 billion US dollars, of which import related revenue accounted for 2.5 billion dollars. Again, most of this tax was generated from customs duty (1.3 billion US dollars) and VAT (0.9 billion US dollars). This heavy dependence on import related taxes remains a concern for the country in terms of further tariff liberalisation either unilaterally or via implementing RTAs. It is intuitive that implementation of RTAs will adversely affect the revenue sources. Revenue source is directly related to public finance, which depends on infrastructure, human development, and many other development related issues.

**Table 17: Tax Revenue Receipts by Sources, 1998-99 to 2004-05 (In million US \$)**

	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
Total Tax Revenue	3,094	3,005	3,479	3,521	4,085	4,444	4,879
Income tax	492	517	647	658	731	800	922
Tax on imports	1,779	1,644	1,861	1,824	2,083	2,235	2,459
Customs duty	987	844	946	940	1,152	1,204	1,288
VAT	634	610	682	655	711	747	873
SD	161	189	233	232	221	284	302
Tax on domestic goods	780	811	943	1,011	1,230	1,360	1,454
VAT	377	418	501	563	633	733	829
SD	356	340	393	398	560	600	605
Excise duty	46	51	52	49	37	27	24
Other taxes	43	33	28	28	41	49	39

**Source:** Bangladesh Bank

<sup>10</sup> Trade Policy Review: Bangladesh, World Trade Organization, 2006, Geneva. Online available at: [http://www.wto.org/english/tratop\\_e/tpr\\_e/tp269\\_e.htm](http://www.wto.org/english/tratop_e/tpr_e/tp269_e.htm) accessed on July 4, 2008.

The import revenue collected from SAARC countries' imports are shown in the table 21 based on NBR data. Though the data do not represent total import and total revenue collected from import, it is an indication of revenue collected from SAARC countries' import. Due to unavailability of data this is the only source of revenue data. The table shows that India is one of the major sources of imports and the revenue collected from Indian import is also important. The table shows that Indian imports register revenues of 332 million US dollars, which is 14 per cent of total import revenue. Other taxes collected at import stage are also in line with that. However, the import share of Pakistan and Sri Lanka is not substantial and the revenue collected from imports of these countries is not noteworthy. The current structure of revenue suggests that if most of the Indian imports get tariff preference, Bangladesh's import revenue would be dependent on Indian import.

**Table 18: Import and Collected Customs Duties and Other Taxes from Import of SAARC Countries, 2004-05 (In thousand US \$)**

Country	Import	Collected CD	Collected SD	Collected AIT	Collected VAT	Collected IDSC	Import revenue
India	1,554,236	133,356	27,586	116,805	27,955	16,176	332,169
Pakistan	207,645	5,091	2,840	4,507	1,025	770	14,624
Sri Lanka	11,663	9	1	15	5	4	35

**Source:** NBR database<sup>11</sup>, Bangladesh

According to the SAFTA agreement, Bangladesh has already reduced its tariffs for the period between 1 July 2006 and 30 December 2006 by 2.5 per cent of the tariff applied on 1 January 2006 on 4741 products defined at 8-digit level. The tariff reduction scenario of Bangladesh is shown in table 19. The table shows that only 1499 HS line at 8-digit level are subjected to tariff reduction under SAFTA whereas 3,238 HS lines at 8-digit level are out of any reduction under the agreement. Moreover, these products are under tariff reduction process and most of these are going to reduce insignificant amount in absolute proportion point. It can be inferred that as there is no significant reduction for most of the products, the implication on revenue may not be huge.

<sup>11</sup> This data does not include information regarding EPZ's import and other special import.

Analysis of NBR data shows that the sensitive list of Bangladesh covered 51.37 per cent of the import volumes, 79.73 per cent of customs duty, and 80.28 per cent of total revenue in FY 2005. In fact, these products have high trade, and revenue coverage is included in the sensitive list. The trade data of ITC Trade Map shows that in 2005 Bangladesh imported from different SAARC countries in 1836 HS lines at 6-digit HS level, in which 654 HS lines are in the sensitive list of Bangladesh that covers 56 per cent of import from SAARC countries. Only 46 per cent of traded HS lines are under tariff reduction, and many HS lines are excluded from the tariff reduction. It is noteworthy that the impact of revenue is likely to be minimal due to the sensitive list, which covers most of the traded and revenue sensitive goods.

**Table 19: Extent of Tariff Concession by Bangladesh under SAFTA**

Number of HS line (8-digit level)	Tariff as of 1 July 2006	SAFTA tariff between 1 July and 30 December 2006	SAFTA tariff between 31 December 2006 and 30 December 2007	Remarks
440	0	0	0	No SAFTA concession
1	0	12.675%	12.35%	No SAFTA concession
2	12%	24.675%	23.75%	No SAFTA concession
52	5%	12.675%	12.35%	No SAFTA concession
3	0	5.850%	5.70%	No SAFTA concession
1290	5%	5.850%	5.70%	No SAFTA concession
1450	12	12.675%	12.35%	No SAFTA concession
1493	25%	24.675%	23.75%	Concession in absolute percentage points (0.625% and 1.25%)
2	12%	5.850%	5.70%	Concession in absolute percentage points (6.15% and 6.3%)
1	25%	12.675%	12.35%	Concession in absolute percentage points (12.33% and 12.65%)
1	25%	5.850%	5.70%	Concession in absolute percentage points (19.15% and 19.3%)
2	14.9 US\$/LTD	14.53 US\$/LTD	14.16 US\$/LTD	Concession in absolute percentage points (0.37 US\$/LTD and 0.74 US\$/LTD)

**Source:** Author's own calculation

Delgado (2007) by using gravity model examines the effects of SAFTA on trade flows and customs duties and ranks trade effects of other RTAs for individual South Asian countries and SAFTA. The analysis shows that SAFTA has a minor effect on regional trade flow and the impact on customs duties would be manageable for most members. The tariff collection could be decreased by up to 2.5 per cent of GDP for Bhutan, 1.5 per cent of GDP for Maldives and less than 0.2 per cent of GDP for Bangladesh<sup>12</sup>. The available literature also indicates that the likely impact of SAFTA on revenue loss is small. Generally, the estimation of the impact of implementing FTA on customs revenue is misjudged as the FTA has effects on duty revenue from the change in tariff rates as well as the effect on domestic tax receipts (excise and VAT) collected on imports. It is essential to capture both of the effects to assess the likely impact of SAFTA on tariff revenues by using a partial equilibrium model. On the other hand, the estimation of revenue effect is overestimated as imports are getting special preference like duty drawback, bonded-warehouse facilities, and special facilities for EPZs that also calculate for the revenue effect. Bangladesh also uses such types of export-incentive schemes like bonded warehouse facilities for RMG, specialised textiles, leather and other industries, duty drawback, duty free import machinery, special facilities for EPZs, etc.

For the selected commodities the paper estimates the baseline scenario where Bangladesh could receive highest amount of revenue of US\$ 177.3 million from importing 22 products from Pakistan. It is impractical that the tariff revenue collected from 22 products is much higher than the total collected revenue. Most of these products are in cotton sectors, which are imported as raw materials for Bangladesh's export-oriented RMG industries. Though for domestic consumption, these products are currently facing highest tariff of 25 per cent ad valorem and other surcharges SD at @<sup>13</sup> 20 per cent, IDSC @ 4 per cent and AIT @ 3 per cent. This paper has no information regarding import for domestic consumption and export-oriented industries; it is essential to use the total import values and calculate the revenue effects. The estimated total revenue from importing 19 products of

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<sup>12</sup> D. R Rodríguez-Delgado1, "SAFTA: Living in a World of Regional Trade Agreements", IMF working paper No.P-07-23, 2007.

<sup>13</sup> In this paper @ indicates at the rate of.

India is 62 million, which is almost one fifth of the collected revenue from the total import of India to Bangladesh. It is also exaggerated as these 19 HS products represent 7.27 per cent of the total export of India to Bangladesh and a good number of products are also cotton and textile products. Most of these products are facing average tariff@ 13 per cent and no SD. Bangladesh's import of only one HS line from Sri Lanka could generate total revenue of 52 million US dollars.

**Table 20: Customs Revenue Baseline (In Thousand US\$)**

HS Lines (6-digit HS)	Country	Tariff Revenue	Excise Revenue	Revenue from VAT	Total Revenue
19 HS lines Total	<b>India</b>	18,208	16,504	27,019	61,732
22 HS lines Total	<b>Pakistan</b>	50,617	66,927	59,768	177,312
1 HS lines Total	<b>Sri Lanka</b>	15,523	21,836	14,917	52,276

**Source:** Author's own Calculation

For the simulation we considered full tariff liberalisation, meaning that the final tariff would be 0 percent ad valorem tariff and other import taxes including Para-tariffs will remain, as there is no specific time frame for the removal of Para-tariff in the SAFTA accord. The results implied the revenue loss after the full implementation of SAFTA -that means 2016 for Bangladesh. Estimated result shows that the maximum revenue loss will be incurred from Pakistani import of 22 HS lines to the tune of 77 million US dollars, which is 43.6 per cent of pre-FTA revenue. It implies that Bangladesh will have lost 77 million US dollars of revenue from importation of selected 22 products from Pakistan in 2016 and the estimated loss of revenue is 43.6 per cent of 2005 revenue. The major revenue shock will come from following HS lines 521213, 521031, 520532, 520511 etc. On the other hand, SAFTA will affect Bangladesh revenue by 32 million US dollars for the importation of 19 HS products from Indian import and this loss is 52 per cent of pre-FTA revenue. The highest amount of revenue from Indian import will be lost in single cotton yarn (520511) and it is almost 12 million. Other importing products that generate major revenue losses are synthetic dyes (320416), steel products (720719), steel tubes (730590), etc. The only one HS line importing from Sri

Lanka guided to US\$14 million in revenue loss that is 27 per cent of the pre-FTA of revenue. If it is considered that Bangladesh has to abolish its para-tariff, the revenue generated from SD, IDSC, AIT will be forgone.

**Table 21: Customs Revenue loss of Bangladesh (In thousand US\$)**

HS Lines	Country	Revenue loss	Change (in %)
19 HS lines Total	<b>India</b>	-31,893	-51.66
22 HS lines Total	<b>Pakistan</b>	-77,301	-43.59
1 HS lines Total	<b>Sri Lanka</b>	-14,061	-26.89

**Source:** Author's own calculation

The estimated revenue loss to Bangladesh from these selected products is almost 123 million US dollars, which represents 2.5 per cent of the country's total revenue and 35.54 per cent of the revenue collected from SAARC countries. The revenue compensation under SAFTA will offer only 15.4 million US dollars in four years, which is far below than calculated revenue (only 12.5 per cent). It is estimated that the likely effects of SAFTA on Bangladesh's tariff revenue by capturing both the effects of tariff change and the domestic effects of domestic tax receipts collected on imports (such as excise and VAT). However, the estimation fails to take into account the special preferential imports like bonded warehouse, EPZs, etc. due to the unavailability of data in this regard.

## 5. CONCLUDING REMARKS

For investigating trade complementarities and export specialisation two types of indexes have been used. These indexes are based on comparative advantages that are of a revealed type. The indexes could be biased due to the existing trade policy barriers, subsidies, geography, tastes and foreign direct investment, which are not uniform across sectors and countries. Moreover, these indexes only consider trade opportunities when the corresponding tariffs are different from zero rather the level of the existing tariffs. Here two different partial equilibrium models for the paper are also used. The main strengths of the PE models are straightforward, thus simplifying the task of constructing and evaluating alternative phase-out scenarios. The calculations are providing an indication of the

projected outcome of the phase-out of tariffs on both exports and imports at the highest disaggregated level data. The calculation is based on the dataset that does not include substantial volume of informal trade, trade under different condition like quota, special incentives for export-oriented industries, non-tariff barriers and other trade policy issues. That is why, the paper could not capture the trade expansion and revenue loss for these special circumstances.

The SAFTA agreement reveals that it offers sufficient flexibility for the LDCs to share economic benefits deriving from trade. While current trade structure shows very few numbers of commodities' high trade complementarities and export specialisation between the countries, the product coverage in the sensitive lists raises the question of real benefit under SAFTA. The estimated trade effect is not substantial for Bangladesh but the overall trade expansion is mostly driven by trade creation. Unlike in many other studies, the estimation in this paper shows that most of the trade will be expanded by efficient cheap producer in the region. The likely effects of SAFTA on Bangladesh's revenue show that Bangladesh may lose about 123 million US dollars, which is 2.5 per cent of its total tax revenue and 36 per cent of the import revenue from SAARC countries. This results are proximate to Delgado's (2007) who estimated Bangladesh's revenue loss to be in the region of 0.2 per cent of its GDP. The revenue loss is manageable for Bangladesh, as the economy will have ten years to adjust such amount of revenue.

The goal of SAFTA is to promote and enhance mutual trade and economic cooperation among its members through eliminating trade barriers and facilitating cross-border movement of goods. Nevertheless, the sensitive lists of the member countries are a threat to the promotion of trade in this region. Member countries should consider reviewing their sensitive lists with the intention of reducing or even eliminating the lists. Another threat is the protection under para-tariff and non-tariff measures. Although the agreement contains the vague provision of reducing these barriers, definite procedure and time frame should be implemented to reduce all these barriers that resist expanding trade in the region. Some other measures can support and complement SAFTA to fulfil its objectives. These measures include harmonisation of customs classification, removal of restrictions on intra-regional investment, macroeconomic

consultations, and development of communication systems, transportation, infrastructure, trade facilitation, etc. This type of measures will help reduce the real transaction costs involved in the formal trading.

## Methodological Appendix – 1

### 1.1. Trade Complementarity and Related Indexes

Opportunities are identified at 6-digit HS level with the help of Trade Complementarity Index (TCI) and Revealed Comparative Advantage (RCA). TCI measures the similarity between the export supply of a country and import demand of its partner, the greater this similarity the more likely trade between them is<sup>14</sup>. If the TCI demonstrates values greater (less) than one, it implies the existence of strong (weak) complementarity between the export specialisation of the country and the import specialisation of its partner. TCI can be defined as:

$$TCI_{ij}^a = \frac{X_i^a / X_i}{M_{World}^a / M_{World}} \cdot \frac{M_j^a / M_j}{M_{World}^a / M_{World}} \quad (1)$$

Where,

- $X_i^a$  = country  $i$ 's exports of good  $a$ ,
- $X_i$  = total exports of country  $i$ ,
- $M_j^a$  = country  $j$ 's imports of good  $a$ ,
- $M_j$  = total imports from country  $j$ ,
- $M_w^a$  = world imports of good  $a$ ,
- $M_w$  = total world imports.

The TCI can be decomposed into two, the RCA of the exporting country  $i$  and the Revealed Comparative Disadvantage or Import Specialisation Index (RCD) of the importing country  $j$ , which can be expressed as:

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<sup>14</sup> M. Vaillant and A. Ons, "Preferential Trading Arrangements between the European Union and South America: The Political Economy of Free Trade Zones in Practice", *The World Economy*, Vol. 25 No. 10, 2002.



$$RCA_i^a = \frac{X_i^a / X_i}{M_{World}^a / M_{World}} \quad (2)$$

$$RCD_j^a = \frac{M_j^a / M_j}{M_{World}^a / M_{World}} \quad (3)$$

RCA shows the export specialisation of a country. If RCA is greater than 1, the country is more export oriented in that particular good than the “world average” and, therefore, it displays a *revealed* comparative advantage in that particular product. On the other hand, when RCD is higher than 1, the country reveals a comparative disadvantage in that good. Therefore, for identifying product for trade opportunities for each country, the following criteria are set:

- i. TCI (Exporting country to importing country) is higher than 1;
- ii. RCA (for the exporting country) is higher than 1;
- iii. The tariff equivalent the product faces at the importing country is equal or superior to 7 per cent;
- iv. The product is not in the sensitive list of the importing countries under SAFTA.

## 1.2. Partial Equilibrium Model Specification

The simulation technique applied here is based on the SMART simulation developed by UNCTAD Secretariat in cooperation with the World Bank for quantification of the effects on trade flows induced by changes in market access negotiations. The impact comprises of two components, namely trade creation and trade diversion.

### *Trade Creation (TC)*

It measures the increase in other SAARC countries’ imports from Bangladesh, owing to a decrease in the relative price of these imports vis-à-vis domestically produced goods, resulting in a net

increase in India's total imports and a net decrease in other SAARC countries' domestic production.

### ***Trade Diversion (TD)***

It measures the increase in other SAARC countries' imports from Bangladesh, owing to a decrease in the relative price of these imports vis-à-vis imports from other countries (third countries, not a party of SAFTA) whereby imports from Bangladesh increase at the expense of imports from other sources, with no change in total SAARC countries' imports.

### ***Notation***

M	Imports
X	Exports
P	Domestic price
RP	Relative price
$E_m$	Elasticity of import demand with respect to domestic price of imports
$E_s$	Elasticity of substitution between imports from Bangladesh and imports from other sources
TC	Trade creation
TD	Trade diversion
$T_0$	Pre-SAFTA tariff
$T_1$	Post-SAFTA tariff

### ***Calculation of Trade Creation***

The step by step calculation is used to clarify the underlying analysis. TC depends on three factors<sup>15</sup>:

- i Current volume of imports from the relevant commercial partner ( $M$ );
- ii Elasticity of import demand ( $E_m$ ), and
- iii Change in the tariff.

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<sup>15</sup> J. Viner, "The Customs Union Issues (1950)", New York: the Carnegie Endowment for International Peace.

TC can be expressed in the following equation (1):

$$TC = E_m \times M \times \frac{T_1 - T_0}{T_0} \tag{4}$$

**Calculation of Trade Diversion**

To calculate TD, the process divides into two steps: the change in relative prices (*dRP/RP*) and then calculation of TD. Due to the preferential liberalisation of tariffs on imports from Bangladesh brings to zero while retaining a positive tariff on imports from other sources, the price of imports from Bangladesh relative to the price of imports from other sources will fall proportionally to the reduction in the tariff. Relative price change can be expressed as follows (2):

$$(dRP^{bd}/RP^{bd}) = \frac{\frac{1+T_1^{BD}}{1+T_1^{other}}}{\frac{1+T_0^{BD}}{1+T_0^{other}}} - 1 \tag{5}$$

Considering that there is no change in the tariffs applying to imports from other sources, the expression reduces to equation (3):

$$(dRP^{BD}/RP^{BD}) = \frac{1+T_1^{BD}}{1+T_0^{BD}} - 1 \tag{6}$$

By using relative price trade diversion can be calculated by applying the following formula (4):

$$TD^{BD} = \frac{M^{BD} \times M^{other} \times (dRP^{BD}/RP^{BD}) \times E_s}{M^{BD} + M^{other} + M^{BD} \times (dRP^{BD}/RP^{BD}) \times E_s} \tag{7}$$

The calculation of TD and TC gives the value of US thousand dollars that portrays the market access gains for each identified product. The “total value” results from adding up two effects - trade creation and trade diversion.

The simulation is based on cross sectional data covering the year 2005. Trade data is used from the Trade Map, ITC, and the applied tariff data has been taken from the TRAINS, UNCTAD via WITS. Three different levels of elasticity are used to grasp the impact of tariff liberalisation. The central value has been taken from the “Tariff & Trade” Data Base, OECD (2003), and an upper and lower band by multiplying and dividing the central value by 1.5 respectively. To some extent, it is verified with WITS. The sensitive lists of member countries under SAFTA are used from SAARC Secretariat<sup>16</sup>.

## Methodological Appendix – 2

### 2.1. Partial Equilibrium Model Specification

In order to assess the likely effects of Trade Liberalisation Program (TLP) under SAFTA on tariff revenue and flows, a modified version of a model developed initially by Hoekman and others (2001) has been used. This is a partial equilibrium model of total import demand disaggregated at a 6-digit HS level. The model assumes perfectly competitive markets and homogeneous products. For the present analysis, like Castro et al. (2004) the model was tailored in order to include tariff exemptions, excise taxes, and other surcharges. The main modification with the original model developed by Hoekman and others (2001) is the incorporation of excise taxes and other surcharges<sup>17</sup> and value-added taxes (VAT) into the import demand and revenue equations. Taking into account surtaxes, import demand for each 6-digit HS product of country  $i$ = Bangladesh is given by:

$$M_i = \frac{A_i}{[(1+T_i)(1+\Phi_i)]^E} \quad (8)$$

<sup>16</sup> Available at <http://www.saarc-sec.org/main.php?t=2.1.6>, accessed on 05 September 2007.

<sup>17</sup> L. Castro, *et.al.*, “Regional Trade Integration in East Africa: Trade and Revenue Impacts of the Planned East African Community Customs Union”, *Africa Region Working Paper Series No. 72*, World Bank, 2004.

Where,  $T_i$  is MFN tariff rate in country  $i$ ;  $A_i$  is a demand parameter in country  $i$ ; and  $E$  is the demand import elasticity.  $\Phi_i$  is an excise duty, surcharge, or any other discriminatory tax imposed on imports.

To capture direct and indirect effects of SAFTA, the author has used different equations for tariffs, excise duties, and other surtaxes and value-added taxes (VAT). Tariff revenue at pre-SAFTA period is given by:

$$\mathbf{TR}_0 = T_i (M_{tot} - M_{i \rightarrow j}) + M [T_i (1 - \Pi_{i \rightarrow j})] \quad (9)$$

Where,  $M_{tot}$  is total imports and  $M_{i \rightarrow j}$  is imports of country  $i$  from country  $j$ .  $\Pi_{i \rightarrow j}$  is the level of tariff preference granted by country  $i$  to exports from  $j$ . Thus, if  $\Pi_{i \rightarrow j} = 0$ , imports of  $i$  from  $j$  have to pay country  $i$ 's MFN tariff. Likewise if  $\Pi_{i \rightarrow j} = 1$ , exports from  $j$  enter duty free into  $i$ .

The initial excise duty revenue is given by:

$$\mathbf{ER}_0 = \Phi_i [(M_{tot} (1 + T_i) + M_{i \rightarrow j} (1 + T_i (1 - \Pi_{i \rightarrow j})))] \quad (10)$$

Where,  $\Phi_i$  represents various surtaxes such as excise duties and suspended duties.

Finally, the original revenue from VAT on imports is defined as:

$$\mathbf{VR}_0 = \Psi_i [(M_{tot} + \mathbf{TR}_0 + \mathbf{ER}_0)] \quad (11)$$

Where  $\Psi_i$  is the VAT rate on imports.

Therefore, total customs duty revenue is calculated as follows:

$$\mathbf{R}_0 = \mathbf{TR}_0 + \mathbf{ER}_0 + \mathbf{VR}_0 \quad (12)$$

Tariff, excise and surtaxes, VAT, and total customs duty revenues after implementation of SAFTA are given by:

$$\mathbf{TR}_{SAFTA} = T_{SAFTA} (M_{SAFTA}) \quad (13)$$

$$\mathbf{ER}_{SAFTA} = \Phi_i [(M_{SAFTA} (1 + T_{SAFTA}))] \quad (14)$$

$$\mathbf{VR}_{\text{SAFTA}} = \Psi_i [(\mathbf{M}_{\text{SAFTA}} + \mathbf{TR}_{\text{SAFTA}} + \mathbf{ER}_{\text{SAFTA}})] \quad (15)$$

$$\mathbf{R}_{\text{SAFTA}} = \mathbf{TR}_{\text{SAFTA}} + \mathbf{ER}_{\text{SAFTA}} + \mathbf{VR}_{\text{SAFTA}} \quad (16)$$

Thus, the change in tariff revenue is simply:

$$\Delta \mathbf{TR} = \mathbf{TR}_{\text{SAFTA}} - \mathbf{TR}_0 \quad (17)$$

The changes in excise and surtaxes ( $\Delta ER$ ), VAT ( $\Delta VR$ ), and total revenues ( $\Delta R$ ) can be estimated by the same specification. Change in total revenue is given below:

$$\Delta \mathbf{R} = \mathbf{R}_{\text{SAFTA}} - \mathbf{R}_0 \quad (18)$$