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The Dilemma of SAFTA and Beyond

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Abstract

This paper attempts to evaluate the Pareto optimality of SAFTA for all the member states. Besides, the welfare optimality of three other alternative sets of coordinated trade policies that go beyond SAFTA has also been studied here. These include (a) extended preferential trading between SAFTA and three other major trading blocs (ASEAN, NAFTA and EU27), (b) coordinated full trade liberalisation (carried out unilaterally or as part of a multilateral agreement) by South Asian countries, and (c) SAFTA plus a customs union (two variants with 5% and 10% CET). The analysis, using the standard static GTAP model, shows that the welfare basis for establishing SAFTA or for deeper trade policy coordination is not very strong. Nor is it obvious that cooperation among the South Asia would be forthcoming given the anticipated welfare impacts.

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1 Introduction

During last decade, the stalemate in multilateral trade negotiations under the framework of World Trade Organization (WTO) regime has provided impetus to the signing of regional trade agreements world over and South Asia is not an exception to this trend. In South Asia, the regional integration process started-off when seven South Asian countries—Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan, and Sri Lanka—initiated a framework for region-wide integration under the South Asian Preferential Trade Agreement (SAPTA) in 1995. However, problems such as limited coverage of commodities, political disagreements, bilateral issues, and non-cooperation among members made SAPTA ineffective. The South Asia Free Trade Agreement (SAFTA) signed in early 2004, which came into force on 1st July 2006, is expected to overcome these problems. The SAFTA is a parallel initiative to the multilateral trade liberalization commitments of the South Asian Association for Regional Cooperation (SAARC) member countries. SAFTA aims to reduce tariffs for intraregional trade among the seven SAARC member countries. It has been agreed that for the South Asian countries, Pakistan and India will eliminate all tariffs by 2012, Sri Lanka by 2013 and Bangladesh, Bhutan, Maldives and Nepal by 2015.

In addition to SAFTA, some countries in the region are members of other regional / bilateral trade agreements. Bangladesh, India, and Sri Lanka are members of two other regional groups, viz., the Bangladesh, India, Myanmar, Sri Lanka, Thailand Economic Cooperation (BIMST-EC) group, and the Indian Ocean Rim Association of Regional Cooperation (IOR-ARC), which was formed in 1997. The latter is a larger-scale regional initiative, and includes many members of the Indian Ocean Rim, including South Africa and Australia. Besides, India and Sri Lanka are parties to a bilateral free trade agreement, viz., the Indo-Sri Lanka Free Trade Agreement (ILFTA) that came into effect from 1 March 2000.

There have been some strong arguments for the regional economic integration in South Asia, as this integration is thought to generate significant intraregional trade and welfare gains for the South Asian countries. However, critics have pointed out that the potential benefits from the SAFTA and other regional trading arrangements in South Asia are little because there are limited complementarities in the region; major trading partners of the individual South Asian countries are located in the west etc. It is also alleged that an RTA in South Asia will lead to substantial trade diversion than trade creation and it may work as a stumbling bloc to multilateral trade liberalization. Given these aforementioned arguments and

counter-arguments it is therefore imperative to examine the impacts of the SAFTA and cooperation among the South Asian countries for greater trade policy coordination.

Literature available on the theory of RTAs mainly deals with two important questions: what are the impacts of RTAs on member countries? And what are their impacts on the world trading system as a whole? However, many researchers find these theoretical models ambiguous in determining whether RTAs are net trade-creating or net trade-diverting; and whether they are "building blocs" or "stumbling blocs" to multilateral trade liberalisation. Bhagwati and Panagariya (1996) and Panagariya (1996, 1998) argued that RTAs are likely to reduce welfare in member countries and impede multilateral trade liberalisation (Robinson and Thierfelder 1999). Others have argued that, "it is essentially an empirical issue that must be settled by analysis of data" (Lewis et al. 2001). Such views have led to the increasing importance of quantitative evaluations of RTAs to provide insight into the effects of RTAs.

The effects of South Asian economic integration have not been investigated as extensively as similar agreements in other regions. While there are many qualitative studies on SAARC and SAPTA (e.g. Panchamukhi et al 1990; Kelegama 1996, 1999; Khan 1999), quantitative studies are rare. Against this background, this paper attempts to provide a quantitative assessment of the likely impact of the SAFTA on the South Asian countries. We use the multi-country Computable General Equilibrium (CGE) model developed by the Global Trade Analysis Project (GTAP) to examine the effects of SAFTA. Besides, we also examine the impacts of alternative trade liberalization scenarios involving the South Asian countries. These include extended regional trading arrangements involving the South Asian countries and other countries / regions such as the ASEAN, the EU, the USA; unilateral and multilateral full trade liberalization scenarios; and finally, a South Asian customs union with alternative rates of common external tariffs.

The rest of the paper is structured as follows: the next section, presents some stylized facts about SAFTA. Section 3 reviews the literature on the potentials of SAFTA, its impact on intra-regional trade, and the alternative trade policy options available to the countries of the region for promoting greater regional co-operation. The experimental design with GTAP model and methodology of this study is introduced in Section 4. Simulation results of different policy scenarios are presented in section 5; and the concluding remarks and limitations of the study are discussed in the final section.

2 Regional Integration in South Asia – Some Stylized Facts

South Asia has been involved in setting up its own RTA. The South Asian Association for Regional Cooperation (SAARC) was formed in 1985 with the objective of exploiting "accelerated economic growth, social progress and cultural development in the region" for the welfare of the peoples of South Asia (SAARC Secretariat, 2006a). In 1995, the South Asian Preferential Trade Area (SAPTA) came into force.

SAPTA advanced the region's commitment to deeper integration with limited success. The implementation of the agreement was characterized by sequential rounds of negotiations in which trade preferences were granted on a product-by-product basis. Its rules of origin, however, were too restrictive for most of its members and these were subsequently relaxed somewhat in 1999, and trade facilitation measures were implemented on a limited scale. Only the Least Developed Countries (LDCs) within the region obtained significant trade preferences while most of the trade among the larger countries of the region was still subject to considerable trade barriers (Baysan et al., 2006 and SAARC Secretariat, 2006b).

At the Ninth SAARC Summit held in Male in May, 1997, the Heads of State or Government recognised the importance of achieving a free trade area by the year 2001 and reiterated that steps towards trade liberalisation must take into account the special needs of the smaller and the least developed countries and benefits of trade liberalisation must accrue equitably. This mandate was reiterated at the Tenth SAARC Summit held at Colombo in July, 1998. Towards this end, they decided that a Committee of Experts (CoE), in consultation with Member States, be constituted with specific Terms of Reference (TOR) to work on drafting a comprehensive treaty regime for creating a free trade area.

Recognising the need to move quickly towards a South Asian Free Trade Area, the Heads of State or Government directed the Council of Ministers to finalise the text of the Draft Treaty Framework by the end of 2002 at the Eleventh SAARC Summit held at Kathmandu, Nepal in January, 2002. They also directed that in moving towards the goal of SAFTA, the Member States expedite action to remove tariff and non-tariff barriers and structural impediments to free trade. The CoE held several meetings during 2002 and 2003 in Kathmandu to finalise the text of the agreement. Some of the contentious issues were finally resolved in the Council of Ministers (Foreign Ministers) Meeting on 2-3 January, 2004 and the agreement was signed during the Twelfth SAARC Summit held in Islamabad on 4-6 January, 2004. Subsequently, the South Asian Free Trade Agreement (SAFTA) has been ratified and entered into force in mid-2006.

SAFTA builds on the provisions of SAPTA. SAFTA extends the scope of SAPTA to include trade facilitation elements and switches the tariff liberalization process from a positive to a negative list approach. A special consideration in SAFTA is the compensation for revenue losses for small countries in the event of tariff reductions (Baunsgaard and Keen, 2005). For these countries SAFTA proposes that "until alternative domestic arrangements are formulated to address this situation, the Contracting States agree to establish an appropriate mechanism to compensate the Least Developed Contracting States…" (SAARC Secretariat, 2006c).

The SAFTA accord, signed in January, 2004, now proposes not only to turn the SAPTA into an FTA but goes beyond it by including in the core agreement provisions for trade facilitation, harmonization of customs classification, removal of restrictions on intra-regional investment, macroeconomic consultations, and development of communication systems and

transportation infrastructure. Under the trade liberalization component, the member countries agree to gradually harmonize and eventually bring down their import tariffs on trade within SAFTA to 5 percent or less. Accordingly, in the first phase, the LDC members in SAFTA will reduce their maximum tariff rates to 30 percent within two years from the date of coming into force of the Agreement (i.e., by January 1, 2008). The non-LDC members will reduce their maximum rates to 20 percent within the same time frame. In the second phase, which will resume on January 1, 2008, the non-LDC members will reduce their import tariffs to 5 percent or less in 5 years (i.e., by January 1, 2013), while the LDCs will do the same in 8 years (i.e., by January 1, 2016). The agreement allows the exclusion of "sensitive" items through member-specific negative lists, which are to be negotiated by the member countries.

However, the level of regional integration in South Asia – especially among its largest members – remains low, and trade barriers continue to be relatively high for any region in the world. The proportion of trade originating in the region has increased in the last decade but still lags behind ASEAN levels. While Bangladesh, India and Pakistan sustain 5 percent of their exports and 2½ percent of their imports with regional partners, the smallest members (Bhutan, Nepal, Maldives, and Sri Lanka) exhibit a higher reliance on local trade relations averaging 20 percent and 9 percent for imports and exports, respectively.[2] In terms of trade barriers the region has undertaken an overall liberalization program with India reducing its average tariff level by around 20 percentage points during the last 8 years. However, there is significant room for further liberalization given that all seven countries still impose higher tariff barriers than ASEAN and ASEAN Plus3.

3 Literature on Regional Integration in South Asia

In this section, we review the studies on regional integration in South Asia specifically with regard to the potential of SAFTA delivering benefits to the member countries, and the options for co-operation amongst them towards coordinated trade policies, and the likely impact on intra-regional trade.

3.1 Potential of SAFTA

In the literature on RTA political harmony, complementarities, and differences in competitiveness are often mentioned as pre-conditions for a RTA to be successful. Analysts believe that the political tension between the two large countries in the region, India and Pakistan, is a main constraint to the regional integration. The nuclear tests conducted by India and Pakistan, the Kargil war and the political change in Pakistan are major obstacles for regional cooperation. SAARC failed to hold a previously scheduled summit in November 1999 because relations between India and Pakistan worsened in the wake of their "tit-for-tat" nuclear tests and the military takeover in Pakistan. Pakistan has also not given its word on the

[2] Due to limited availability of trade statistics for smaller members, the variability should be interpreted with caution. The last observation year for these four members (exports and imports) is 1999.

opening of land routes at Wagah and Karachi for trade with India. Pakistan allows import of only onions, potatoes, garlic, animals, halal meat, vaccines, medicines for cancer and AIDS, and sugar through land route and rest of the items are to be routed through third countries such as UAE, which complicates procedures and increases freight costs. Similarly, the internal conflict in Sri Lanka and the illegal trade along the Indo-Bangladesh and Indo-Nepal borders are frequent cause for political discord amongst the countries of the region. Unless SAARC countries are able to develop cordial political relations it would be very hard to achieve the real gains from SAFTA.

Among the economic factors, trade complementarity and differences in competitiveness of the countries are usually mentioned as important for the success of RTAs. Empirical literature suggests that the existence of complementarity is needed to enhance the probability of a regional trade arrangement to be net trade-creating, rather than net trade-diverting. The statistical measures such as the complementarity index argue that the higher the observed values of the index between partners, the more likely is it that a proposed regional trade agreement will succeed (Michaely, 1996). Indices of trade complementarity developed by Drysdale (1969) can be used to check the existence of trade complementarity in South Asia. Kemal et al. (2000) have estimated the complementarity indices for all five leading South Asian countries using time series trade data and found that there is a lack of strong trade complementarity in the bilateral trade structures of South Asia. Lack of trade complementarities raises the questions on the future prospects of SAFTA.

Countries with different comparative advantage profiles, in principle, have more opportunities to trade with each other compared with those with similar comparative advantage profiles. The prospects of increasing regional trade depends more on the existence of product complementarities and export efficiencies (defined by comparative advantage) and other characteristics such as the degree of concentration and diversification of trade profiles amongst the regional partners. The main problem related to South Asian economic integration is that countries in the region are producing and trading similar commodities. To identify different country's competitiveness among different commodity groups, the Export Revealed Comparative Advantage indices (XRCA) have been estimated by two recent studies for commodities at the three-digit level using recent UN trade data (Samaratunga 1999 and Kemal et al. 2000). These indices show the comparative advantage in terms of the share of a particular industry in a country's total exports relative to the industry's share in total world exports. The results of these two studies indicate that countries in South Asia have an almost identical pattern of comparative advantage in a relatively narrow band of commodities and these countries do not have comparative advantages in a wide range of capital goods and advanced manufactured products. The lack of trade complementarity in bilateral trade flow and the similarity of the pattern of comparative advantage in the region have been the main constraints for the growth of intraregional trade (Kemal et al. 2000). In a recent study Pitigala (2005) summarized that the region has shown a mutual dependency in basic foods and agricultural products, although they are not fully liberalized. A narrow group of products

which are mostly made up of agriculture and raw material for manufacture, on which most countries display comparative advantage has created inroads in regional trade. Countries have to develop comparative advantages in the different commodities especially in the products which they are trading with non-members to make the SAFTA successful in its true sense.

Given the political friction, limited complementarities, broad similarities in comparative advantage of the South Asian countries, it is pertinent to ask what if any would be the potential benefits of SAFTA to the member countries? Would all the member countries gain? If not, then what could be the other choices? In what follows we review the studies that examined the impacts of SAFTA on intra-regional trade in South Asia, and the trade policy alternatives that have been suggested for these countries.

3.2 Impact on Intra-Regional Trade

Some studies predict the potential impact of tariff elimination on intra-regional trade. Few are reviewed here. Srinivasan and Canonero (1995) employ the gravity model and predict that the impact of a South Asian FTA on trade flows will be small for India but much larger on the smaller countries. Their simulation shows that the effect of removing all tariffs would be to increase total trade between 3 percent of GDP for India and 59 percent of GDP for Nepal and in between for other countries. Sengupta and Banik (1997) predict a 30 percent increase in the official intra-SAARC trade and as much as 60 percent if illegal trade, which is currently out of the official count, becomes a part of official trade. These results are intuitive; India being large, the impact on its trade of the FTA with the small neighbours cannot be proportionately large. Rajapakse and Arunatilake (1997) have also used the gravity approach to investigate the implications of SAPTA for Sri Lanka and have found that Sri Lanka would gain from SAPTA. To evaluate the magnitude of preferential trade under SAPTA, Mukherji (2000) has estimated the extent of trade preference under all SAPTA rounds in terms of trade values and the percentages of preferential imports to total values of imports related to all member countries. Mukherji's estimates show that the region's total preferential imports amounted to about US$479.8 million, nearly half of which went to Pakistan. India's share of preferential trade out of total regional preferential imports was about 26 per cent while that for Sri Lanka was about 16 per cent. He also estimated percentages of each member country's total preferential imports in terms of its total regional imports. Pakistan has the highest coverage of preferential imports (about 40 per cent), followed by Nepal (35 per cent), India (30 per cent), Bhutan (17 per cent) and Sri Lanka (12 per cent). RIS (2004) reports the result of studies conducted in the framework of gravity model. It suggests that complete elimination of tariffs under SAFTA may increase the intra-regional trade by 1.6 times. It further suggests that in the dynamic framework the gains from liberalisation are at least 25 per cent higher than the static gains.

3.3 Free Trade Agreement and/or Custom Union in South Asia

Some studies attempted to quantify the gains from custom union scenario in South Asia. Jayaraman (1978) looked at the static effects of a hypothetical customs union in South Asia, with the post-union common external tariff equal to the lowest pre-union tariff rate. The study shows that gains are however of a small magnitude only. Similarly, Rahman, *et al.* (1981) studied the static welfare effects of a South Asian customs union with the common external tariff equal to the weighted average rates of all country averages. They show that the expected welfare gain for the region as a whole is likely to be quite modest, not exceeding 0.07 percent of the region's total regional product. Siriwardana (2002) uses the GTAP model version 5 database, which contains data for Bangladesh, India, Sri Lanka and the rest of the world, to explore two plausible scenarios for free trade in South Asia; first, the effects of elimination of all tariffs between South Asian countries under a FTA; second, the effects of a 10 per cent Common External Tariff (CET) targeting non-members of the proposed South Asian FTA. The results suggest that trade liberalisation is beneficial to South Asian countries in terms of GDP and welfare gains under both policy scenarios. However, the extent of the benefits varies between countries. In the event that an FTA is established for South Asia, the effects of trade creation are likely to outweigh the effects of trade diversion, leading to net expansion of trade in the entire region.

3.4 Extending SAFTA to Other Regional Blocs

Few researchers used GTAP database for computable general equilibrium (CGE) modelling to assess the likely gains from different integration options in the region. In theses studies attempts have been made to assess possible gains from different alternative policy scenarios particularly the extension of SAFTA to other blocs such as NAFTA, EU, ASEAN, APEC etc. and comparing these scenarios with either multilateral and/or unilateral choice. Pigato *et al.* (1997) employs used the Global Trade Analysis Project (GTAP) version 3 and examined the effects of a South Asian RTA under the following two policy scenarios; *first* the effects of preferential trade liberalisation in the region; *second* the effects of unilateral trade liberalisation. The results show that SAPTA generates significant benefits for India and the rest of South Asia (0.5 per cent of GDP or a 1.3 billion US 1992 dollar increase for India; and 1 per cent of GDP or 0.7 billion US 1992 dollar increase for the rest of South Asia). India's gains were much higher in the unilateral trade liberalisation scenarios (4.1 per cent or 10.9 billion US 1992 dollar of GDP compared to 0.8 per cent of GDP or 0.6 billion US 1992 dollar). Siriwardana (2001) using version 4 GTAP database focuses on bilateral trade liberalisation between Sri Lanka and SAARC countries and the implications for Sri Lanka. It conducted 12 trade liberalisation related experiments between SAARC countries, ASEAN countries and other Asian countries. The results of this study suggest that Sri Lanka would benefit from bilateral trade liberalisation between Sri Lanka and SAARC countries. Sri Lanka would benefit further by expanding bilateral trade liberalisation into ASEAN and other Asian countries. However, the results were mixed in terms of detailed commodity-wise analysis.

De Rosa and Govindan (1995, 1996) evaluate three possible policy options for South Asia First, the implications of SAPTA by looking at the effects of removal of tariffs and Para-tariffs on intra-regional imports; second, The implications of closer economic ties between SAARC and APEC countries by looking at removal of trade barriers between the two regions; and third, the implications of unilateral trade liberalization in South Asia. The results support SAPTA in terms of an increase in food trade. However, this study suggests that SAARC countries might achieve much larger gains in trade and welfare by intensifying efforts to integrate the South Asian economies with the world economy. This study found that the net trade creation of SAPTA was limited due to extensive trade diversification. Samaratunga (1999) investigated the effects of SAARC-APEC trade links and found that the potential for export expansion of the SAARC region into APEC countries is limited within the 1991–1995 policy framework.

Bandara and Yu (2003) applied the CGE model with version 5 of GTAP database and conducted a series of policy simulations to answer the question of how desirable a South Asian Free Trade Area is? These policy simulations are related to unilateral trade liberalisation by South Asia; preferential trade liberalisation in South Asia; preferential trade liberalisation between South Asia and ASEAN, NAFTA, EU; and multi-trade liberalisation. The results suggest that the impact of preferential trade liberalisation is very small, but that the impact of unilateral trade liberalisation is significant for South Asian countries. Under preferential trade liberalisation, small countries would lose or gain marginally. Daniel (2007) evaluates the SAFTA within the global structure of overlapping RTAs using modified gravity equation. First, it examines the effects of the Trade Liberalization Program (TLP) which started in 2006. SAFTA would have a minor effect on regional trade flows and the impact on custom duties would be a manageable fiscal shock for most members. Second, the paper ranks the trade effects of other potential RTAs for individual South Asian countries and SAFTA: RTAs with North American Free Trade Agreement (NAFTA) and the European Union (EU) dominate one with the Association of South East Asian Nations (ASEAN).

Baysan, et al. (2006) conclude that, considered in isolation, the economic case for SAFTA is quite weak. When compared with the rest of the world, the region is tiny both in terms of economic size as measured by GDP (and per capita incomes) and the share in the world trade. It is argued that prima facie, these facts make it likely that trade diversion would be dominant as a result of SAFTA. This point is reinforced by the presence of high levels of protection in the region and the tendency of the member countries to establish highly restrictive ‘sectoral exceptions/sensitive lists’ and stringent ‘rules of origin’. They further argue that SAFTA makes sense only in the context of a much broader strategy of creating a larger preferential trade area in the region that specifically would encompass China and the member nations of the Association of South East Asian Nations. In turn, the case for the latter is strategic; the pursuit of regionalism in the Americas and Europe has created increasing discrimination against Asian exports to those regions, which must inevitably impact the region’s terms of trade adversely. An Asian bloc could be a potential instrument of changing

incentives for the trade blocs in the Americas and Europe and forcing multilateral freeing of trade. Assuming that the SAFTA here to stay, the study further suggests steps to ensure that the agreement can be made more effective in promoting intra-regional trade, while minimizing the likely trade diversion costs and maximizing the potential benefits.

Raihan and Razzaque (2007) examined the features and prospects of different regional integration and bilateral FTAs in South Asia involving Bangladesh. The paper has also estimated the trade creation and trade diversion aspects of the total welfare effects of SAFTA scenarios. Results suggest that a full implementation of SAFTA will lead to welfare gains for India, Sri Lanka and rest of South Asian countries, though Bangladesh suffers from welfare loss. Bangladesh's welfare loss is mainly driven by the negative trade diversion effect. Simulation results also suggest that the negative trade diversion effect can be undermined by some associated unilateral trade liberalisation measure.

4 Methodology and Experimental Design with GTAP

The analytical framework used to quantify the impact of bilateral tariff reductions is the well known GTAP model (Hertel, 1996). It is a comparative-static multi-regional CGE model that is being used by many researchers around the world. Global CGE models are more useful than econometric models and partial equilibrium models in analysing issues related to PTAs. Firstly, these models incorporate the necessary links between different agents in each country / region. Secondly, these models are based on the input-output structure of each country, which links industries together. Thirdly, all individual countries are linked through international trade flows to form a general equilibrium model in which prices and quantities supplied and demanded are determined simultaneously in all primary factor markets and domestic and international commodity markets. Finally, a global CGE model structure reflects the fact that all parts of the world economy hinge together in a network of direct and indirect linkages. This means that any changes in any part of the system will in principle affect the entire world. Quantitative assessments have provided valuable inputs into policy debates on PTAs. These CGE modelling applications have been surveyed by Flam (1992), Baldwin and Venables (1995), Francois and Shields (1994), De Rosa (1998), Bandara (1998) and Robinson and Thierfelder (1999). Despite the criticism levelled at CGE evaluations of PTAs (see Panagariya (2000); Panagariya and Dattagupta 2001), Baldwin and Venables (1995), De Rosa (1998) and Robinson and Thierfelder (1999) have clearly recognised the contributions made by CGE models in evaluating PTAs.

However, GTAP has rarely been used to address issues of South Asia (with few exceptions such as Pigato et al., 1997). One of the main reasons for this is the inadequate treatment of the member countries of SAARC in earlier versions of the GTAP database. South Asia (except India) was only an aggregated region in the earlier versions of GTAP database until 1998. Subsequently, Sri Lanka and Bangladesh have been incorporated as separate countries in the GTAP database versions 5 and 6. Thus, Bangladesh, India, Sri

Lanka and the Rest of South Asia (RSA) are the four separate country / regions in the GTAP database, which provides us an opportunity to use the GTAP model in a sensible way to illustrate the quantification of the effects of regional integration in South Asia. In order to perform policy simulations, we aggregate the GTAP version 6 database[3] into 15 regions, keeping Bangladesh (BGD), India (IND), Sri Lanka (LKA), and the Rest of South Asia (RSA) as separate regions (see the Appendix A1) and 11 sectors (see the Appendix A2). While we carry out the simulations at this level of regional and sectoral aggregation, for ease of interpretation we report the results at the level of five sectors: Agriculture (AGRI) (aggregate of cereals, other crops, animal products incl. fishing); mining and manufacturing (M&M) (natural resources, petroleum & coal products, other manufactures); services (SRVS) (construction, margin services, other services. Besides, agro-processing (AGPR) and textiles (TXTL) are reported as such. On the region side, the results have been reported primarily for the four South Asian countries in the GTAP model / database

The relative size South Asian economies in world GDP and trade are reported in Table 1. In 2001, the region as a whole accounted for just 2% of world GDP, and about 1.3% of world imports and world exports. As the largest nation in the region, India accounts over three-fourth of the GDP of the region, and about two-thirds of the region's trade. The relative insignificance of the region as a whole in world trade is largely due to the historically autarchic policies followed by the countries of the region, especially by India, that accorded a very low importance to international trade. Although all the countries of this region have embarked upon trade liberalization effort especially during the 1980s and 1990s, dependence on international trade is still not very high for most of these countries (except Sri Lanka) as reflected in the low ratios of exports and imports to GDP.

Table 1: South Asia in the World

	Share in the World			Trade Dependence Ratio	
	GDP %	**Exports %**	**Import %**	**Export/GDP**	**Import/GDP**
Bangladesh	0.15	0.11	0.14	0.17	0.22
India	1.53	0.89	0.87	0.13	0.13
Sri Lanka	0.05	0.09	0.09	0.41	0.42
Rest of South Asia	0.27	0.21	0.21	0.17	0.18

Source: GTAP database version 6

A possible reason for the relatively low dependence of these economies on international trade is the high import tariffs that remain in South Asia even after the attempts at liberalization. Appendix Tables 3 to 6, report the bilateral import tariff rates in the year 2001

[3] We do not adjust the base GTAP data for the impact of the implementation of Agreement on Textiles and Clothing (ATC) and abolishing the Multi-Fibre Arrangement (MFA).

of the four South Asian countries. India retains high tariffs on agriculture, textile, manufacturing sector with the tariff rates ranging between 12 to 95 per cent. India has relatively higher tariffs than any other South Asian country. Though Bangladesh, Sri Lanka and Rest of South Asia are less protective compared to India, their tariff rates in some sectors are on a par with India. In all the South Asian countries the highest tariff rates are in general applied on imports from non-South Asian trading partners.

Turning to the trade patterns, all the South Asian countries trade more with non-South Asian countries than amongst themselves (Table 2). In general China, Japan, REA, ASEAN, NAFTA, EU27, and MENA are the major trading partners for most of the South Asian countries. Two features stand out of the little intra-regional trade that takes place in South Asia. First, the intra-regional trade for Bangladesh, Sri Lanka and Rest of South Asia is primarily India centric, with very little trade taking place amongst each other. Second, while India is an important source of imports and market for exports to these three countries, none of them is a major trade partner for India.

Table 2: South Asian Countries Trade Share

	Import Share from World					**Export Share to World**			
Import source	**BGD**	**IND**	**LKA**	**RSA**	**Export destination**	**BGD**	**IND**	**LKA**	**RSA**
1 ANZ	0.028	0.027	0.04	0.026	1 ANZ	0.005	0.012	0.012	0.013
2 CHN	0.121	0.044	0.061	0.062	2 CHN	0.002	0.034	0.007	0.042
3 JPN	0.062	0.042	0.05	0.055	3 JPN	0.019	0.048	0.048	0.035
4 REA	0.148	0.053	0.144	0.058	4 REA	0.022	0.049	0.02	0.052
5 ASEAN	0.173	0.14	0.186	0.115	5 ASEAN	0.025	0.076	0.025	0.035
6 BGD	0	0.001	0.001	0.004	6 BGD	0	0.019	0.002	0.011
7 IND	0.121	0	0.097	0.04	7 IND	0.008	0	0.011	0.041
8 LKA	0.001	0.001	0	0.008	8 LKA	0.001	0.01	0	0.009
9 RSA	0.017	0.01	0.021	0.013	9 RSA	0.006	0.009	0.017	0.013
10 NAFTA	0.068	0.134	0.077	0.097	10 NAFTA	0.397	0.225	0.402	0.28
11 RAMR	0.042	0.085	0.013	0.014	11 RAMR	0.01	0.031	0.02	0.025
12 EU27	0.122	0.272	0.196	0.207	12 EU27	0.444	0.299	0.318	0.282
13 REUR	0.032	0.036	0.026	0.039	13 REUR	0.018	0.043	0.042	0.031
14 MENA	0.053	0.112	0.08	0.238	14 MENA	0.036	0.101	0.069	0.104
15 SSA	0.01	0.04	0.006	0.023	15 SSA	0.007	0.044	0.007	0.027
Total (US $ millions)	10306	62295	6726	15228	Total (US $ millions)	7921	61126	6528	14388

Source: GTAP database version 6

Given these trading patterns, and the fact that intra-South Asian tariffs are not significantly higher than those applicable to non-South Asian trading partners, would SAFTA as a preferential trading bloc be beneficial to the South Asian countries? Would these countries be better off with 'expanded' preferential trading blocs such as a SAFTA-ASEAN, SAFTA-NAFTA or SAFTA-EU? Would such preferential trading arrangements be a better policy option for these countries than unilateral trade liberalization or even a multilateral free trade agreement? These policy questions form the basis of the alternative scenarios that are experimented with using the GTAP model in this paper. In all eight alternative policy scenarios are considered here (see Table 3).

Table 3: Alternative Scenarios for GTAP Simulations

Scenario	**Scenario description**
1. SAFTA	South Asia Free Trade Area: All the South Asian countries remove their bilateral tariffs, while the tariff rates against countries outside of the region remain unchanged, i.e. the case of a SAFTA.
Extended preferential trading arrangements	
2. SAFTA-ASEAN	SAFTA plus extension of preferential trade to ASEAN countries
3. SAFTA-NAFTA	SAFTA plus extension of preferential trade to NAFTA countries
4. SAFTA-EU27	SAFTA plus extension of preferential trade to EU27 countries.
Full trade liberalisation	
5. UTL	Unilateral Trade Liberalisation by South Asian Countries: All the South Asian countries unilaterally remove all their tariffs against all other countries in the world, while the rest of the world retains its tariff against South Asia
6. MTL	Multilateral Trade Liberalisation: All countries remove border protection completely for all the other countries in the world.
South Asia customs union	
7. SACU5	South Asian Custom Union with 5% Common External Tariff: SAFTA plus all the South Asian countries adopt a common external tariff rate of 5% against rest of world.
8. SACU10	South Asian Custom Union with 10% Common External Tariff: SAFTA plus all the South Asian countries adopt a common external tariff rate of 10% against rest of world.

Scenario 1 depicts the case of South Asian Free Trade Area (SAFTA), in which we consider the hypothetical case of removal of all import tariffs and export subsidies by the four South Asian countries on a preferential basis. That is, we assume that all tariffs and export subsidies between the four South Asian trading partners are removed while the same against other regions outside South Asia remain unchanged at the base level. This scenario deviates from the actual tariff concessions agreed upon by the SAFTA member countries. There are three reasons for doing that. First, tariff concessions under SAPTA rounds are moderate. Second, the products considered under these rounds are very narrowly defined (at 6-digit HS code level) and it is very difficult to aggregate them in a sensible way according to the GTAP commodity classification. Third, hypothetical simulations can be used to evaluate the possible effects of the SAFTA and to contribute to the debate on the desirability of SAFTA.

In Scenarios 2, 3 and 4, we consider integration possibilities of SAFTA with three other major trade blocs, viz., ASEAN, NAFTA and EU27, respectively. Scenarios 1 to 4 are alternative preferential trade scenarios of varying geographical coverage. The impacts of these four preferential trade scenarios are evaluated against two broad policy alternatives.

In the first we consider the case of full trade liberalization by all the South Asian countries, either unilaterally (Scenario 5) or as part of a multilateral agreement (Scenario 6). In Scenario 5, the four South Asian countries remove all tariffs and export subsidies unilaterally vis-à-vis all trading partners, while Scenario 6 is a full blown global free trade scenario wherein all countries remove all tariffs and export subsidies vis-à-vis all trading partners.[4]

The second broad policy alternative considered here is the case where the South Asian countries form a Customs Union wherein they allow free trade amongst themselves while maintaining a common external tariff. Two variants are studied here in which the common external tariff is set at 5% (Scenario 7) and 10% (Scenario 8). Thus, these two scenarios reflect a deeper regional integration than just SAFTA. This has helped us to present a most preferred choice of regional integration for South Asian countries.

In all the GTAP experiments, we assume full employment condition and allow free movement of resources across sectors within each country.

5 Simulation Results

Results of the eight scenarios for the four South Asian countries are discussed in sequence first. The outcomes are evaluated in terms of their welfare effects, and impacts on sectoral output, prices and trade. With regard to the welfare effects, we examine allocative efficiency,

[4] First six hypothetical scenarios have adopted from "Jayatilleke S. Bandara, Wusheng Yu (2003) How Desirable is the South Asian Free Trade Area? A Quantitative Economic Assessment, The World Economy 26 (9), 1293–1323." Our study is different due to two reason *first*, we have done the simulations with GTAP version 6 updated database and *second*, regional and sectoral aggregation are different. And last two scenarios are the extension to these.

Terms of Trade (TOT), Investment & Saving (IS) effect and GDP Quantity Index (GDP QI) as a measure of real GDP. First the simulation results from four preferential options i.e. SAFTA, SAFTA-ASEAN (SASEAN), SAFTA-NAFTA (SNAFTA), SAFTA-EU27 (SEU27) are discussed; then the results of unilateral and multilateral trade liberalization are presented; and lastly results obtained from South Asian Custom Union (SACU) with 5% and 10% CET are reported. Table 4 compares the welfare results obtained from different scenarios, while Tables 5 to 8 report the results on sectoral output, prices, imports and exports, respectively. The final sub-section discusses the aggregate welfare impacts of these eight scenarios on the rest of the countries / regions of the world.

5.1 Scenario 1: SAFTA

A South Asian Free Trade Area, as envisaged under the SAFTA scenario, does not result in welfare gains for all the member countries (Table 4). SAFTA results in small welfare gains for all the South Asian countries except Bangladesh. Rest of South Asia (RSA) gains most by about half a billion dollars, while India gains by about US $204 millions and Sri Lanka by just US$89 millions only. Bangladesh on the other hand suffers welfare loss of about US$225 millions. The gains in welfare for RSA, India and Sri Lanka are basically due to gains in terms of trade, and to a lesser extent from improvements in allocative efficiency in the case of RSA and Sri Lanka. Bangladesh loses out both in terms of allocation efficiency and terms of trade by US$104 and US$106 millions, respectively.

At an aggregate level, only Sri Lanka and RSA witness a marginal rise in real output (GDP quantity index reported in Table 4), while Bangladesh witnesses a decline in output and there is hardly any change in the output level in India. This aggregate picture, however, masks several changes in the output at a sectoral level within each of the country.

For Bangladesh, removal of tariff barriers reduces the sectoral output in most of the commodities except textile which increase by 4.5% (Table 5). Textile has also observed an increase in imports and exports by 18.8% and 10.9% respectively (Tables 7 & 8). Higher imports have caused price decline in most of the commodities and hence a negative term of trade effect (Table 6). These results for Bangladesh are understandable given its high base tariff rates in several sectors like textile, agriculture, and manufacturing, and also its relatively (within the region) large dependence on India for imports and exports. While the other three South Asian countries also have high base tariff rates, especially, India, their dependence on the rest of the region especially in highly protected sectors is relatively less. Consequently, the TOT movement is not adverse for India, Sri Lanka and RSA.

Under SAFTA, India witnesses a rise in output by 0.3% in the mining and manufacturing sectors, and another 0.1% rise in textiles sector. On the contrary, agro-processing sector suffers a loss in output even as the output in agriculture and services sectors is hardly affected. Prices of all commodities rise following SAFTA. This is because, under SAFTA India’s exports rise equals or exceeds the rise in its imports in all the sectors, which puts an upward pressure on prices within India.

Table 4: Welfare (US$ millions) and GDP Impacts (% change from base)

Parameter	SAFTA	SAFTA-ASEAN	SAFTA-NAFTA	SAFTA-EU27	UTL	MTL	SACU 5	SACU 10
Bangladesh								
Allocative efficiency	-104	-75	-19	-152	366	338	348	274
Terms of Trade	-106	-179	199	-166	-453	-814	-329	-231
Investment/Savings	-16	-42	86	-44	-86	-166	-55	-30
Total welfare change	-225	-296	266	-362	-173	-641	-36	14
GDP quantity index	-0.22	-0.16	-0.04	-0.33	0.79	0.73	0.75	0.59
India								
Allocative efficiency	-3	894	-453	375	5738	5656	5466	4909
Terms of Trade	209	-1290	17	-1119	-4728	-4415	-3462	-2344
Investment/Savings	-3	8	-13	-6	-108	38	-46	-9
Total welfare change	204	-389	-448	-751	902	1279	1958	2556
GDP quantity index	0	0.19	-0.09	0.08	1.21	1.19	1.15	1.03
Sri Lanka								
Allocative efficiency	10	12	74	25	47	55	24	-23
Terms of Trade	78	56	399	177	11	123	37	55
Investment/Savings	1	0	17	3	-6	-1	-1	1
Total welfare change	89	68	489	206	52	178	61	33
GDP quantity index	0.06	0.08	0.46	0.16	0.3	0.35	0.15	-0.15
Rest of S. Asia								
Allocative efficiency	91	223	128	302	951	707	906	803
Terms of Trade	416	46	647	83	-613	-730	-364	-144
Investment/Savings	15	0	26	13	-30	-30	-7	9
Total welfare change	521	269	801	398	308	-52	534	668
GDP quantity index	0.11	0.26	0.15	0.36	1.13	0.84	1.08	0.95

Table 5: Sectoral Output Changes (% change from base)

Sector	Base (US$ million)	SAFTA	SAFTA-ASEAN	SAFTA-NAFTA	SAFTA-EU27	UTL	MTL	SACU 5	SACU 10
Bangladesh									
AGRI	15032	-0.3	-0.6	-0.8	-0.2	-1.5	-0.7	-0.9	-0.5
M&M	12190	-1.8	-5.3	-8.7	-2.7	-12.0	-3.4	-9.2	-6.4
AGPR	10643	-0.7	-1.3	-1.6	-0.9	-3.8	-2.7	-3.0	-2.3
TXTL	11800	4.5	8.5	13.5	5.6	18.4	7.5	11.9	6.7
SRVS	43712	-0.2	-0.1	-0.2	-0.2	0.0	0.0	0.2	0.3
India									
AGRI	142744	0.0	-0.7	-0.1	0.4	-1.0	-0.3	-0.7	-0.6
M&M	235060	0.3	1.8	-1.9	-4.4	-2.4	-2.0	-2.7	-2.8
AGPR	50404	-0.3	-9.7	-1.4	-1.0	-11.8	-10.5	-10.9	-10.1
TXTL	40770	0.1	5.4	18.0	22.2	25.4	16.1	21.8	18.5
SRVS	398292	0.0	0.4	0.0	0.2	1.3	1.2	1.2	1.1
Sri Lanka									
AGRI	5003	-0.3	-0.5	-1.8	-0.6	-1.0	0.6	-0.4	0.0
M&M	3203	5.8	5.5	-5.0	-0.5	9.6	12.0	10.5	11.6
AGPR	1497	-0.8	-2.6	-4.0	-1.4	-5.4	-6.1	-3.2	-1.2
TXTL	3725	-3.4	-2.8	13.4	3.8	-5.6	-10.9	-8.4	-10.7
SRVS	8869	0.0	0.3	-0.2	0.0	0.8	0.7	0.5	0.1
Rest of S. Asia									
AGRI	27882	0.3	-0.5	0.1	0.7	-1.0	0.9	-0.8	-0.5
M&M	27695	2.9	3.3	-2.1	-6.2	-9.8	-6.0	-7.7	-5.6
AGPR	10516	4.4	-8.1	2.0	1.5	-10.7	-9.9	-9.5	-8.4
TXTL	13493	-8.4	1.3	6.2	12.0	29.7	11.3	23.0	16.9
SRVS	62416	-0.1	0.3	-0.2	-0.3	0.7	0.7	0.7	0.7

Table 6: Price Change Index (% change from base)

Sector	SAFTA	SAFTA-ASEAN	SAFTA-NAFTA	SAFTA-EU27	UTL	MTL	SACU 5	SACU 10
Bangladesh								
AGRI	-0.7	-1.6	3.2	-1.3	-3.0	-6.5	-1.8	-0.8
M&M	-0.7	-1.4	2.5	-1.6	-7.0	-10.5	-5.5	-4.0
AGPR	-0.6	-1.4	3.2	-1.3	-2.8	-6.4	-1.7	-0.8
TXTL	-1.4	-2.7	2.1	-2.2	-6.7	-10.0	-5.3	-4.0
SRVS	-0.2	-0.4	4.9	-1.1	-0.3	-5.5	0.0	0.2
India								
AGRI	0.4	-2.7	1.5	2.0	-4.0	-3.0	-2.9	-1.9
M&M	0.2	-2.2	-1.1	-0.9	-8.1	-8.7	-5.8	-3.5
AGPR	0.4	-2.0	1.3	0.6	-3.6	-3.7	-2.6	-1.6
TXTL	0.3	-1.7	1.0	-0.1	-4.1	-4.4	-2.9	-1.7
SRVS	0.4	-1.1	1.2	0.0	-2.8	-3.4	-1.8	-0.8
Sri Lanka								
AGRI	1.2	0.4	5.4	3.3	-0.3	5.0	0.1	0.5
M&M	1.9	1.5	6.6	3.1	1.3	1.8	2.4	3.5
AGPR	1.1	0.2	8.1	3.5	-0.4	1.4	-0.6	-1.0
TXTL	1.3	0.9	6.6	2.9	0.6	0.7	1.6	2.5
SRVS	2.0	1.7	9.4	4.3	1.9	2.8	1.5	1.0
Rest of S. Asia								
AGRI	4.5	0.1	6.4	7.5	0.4	2.2	1.9	3.2
M&M	1.8	0.5	2.3	1.3	-4.9	-6.7	-2.5	-0.2
AGPR	3.6	0.4	5.7	5.5	0.8	-0.6	2.1	3.3
TXTL	2.9	0.4	5.0	4.1	0.2	-2.2	1.7	3.0
SRVS	3.3	1.2	5.6	4.5	1.8	-1.6	2.9	4.1

Table 7: Change in Imports (%)

Sector	Base (US$ million)	SAFTA	SAFTA-ASEAN	SAFTA-NAFTA	SAFTA-EU27	UTL	MTL	SACU 5	SACU 10
Bangladesh									
AGRI	1023	7.4	10.1	21.3	6.1	16.4	-1.4	9.2	3.4
M&M	5675	5.4	12.6	13.9	8.2	24.2	16.4	17.8	12.1
AGPR	879	6.3	18.8	16.5	6.7	38.4	23.9	30.3	23.0
TXTL	1982	18.8	35.4	37.7	20.5	81.5	57.5	64.2	49.9
SRVS	747	-0.7	-1.3	9.8	-2.5	-0.9	-10.5	-8.7	-15.8
India									
AGRI	2370	7.9	22.7	31.3	21.2	56.5	50.2	44.9	34.6
M&M	44821	3.2	12.2	17.3	33.2	51.8	53.9	40.3	30.4
AGPR	2227	25.3	214.8	41.3	53.0	226.7	220.3	203.6	182.9
TXTL	1075	10.4	36.7	26.2	49.7	109.1	112.6	84.6	64.1
SRVS	11803	0.8	-1.2	2.3	0.1	-3.2	-4.0	-9.1	-14.4
Sri Lanka									
AGRI	390	13.9	17.5	23.6	18.8	21.0	27.1	15.2	10.0
M&M	3630	4.3	5.8	10.9	7.5	10.4	11.3	6.0	2.1
AGPR	387	11.4	19.3	28.9	18.4	29.9	31.9	20.9	12.8
TXTL	1427	-1.0	-0.4	18.6	6.7	-1.7	-4.8	-6.8	-11.1
SRVS	892	2.0	1.7	9.5	4.2	2.1	2.8	-2.5	-6.8
Rest of S. Asia									
AGRI	1043	13.9	9.1	27.9	27.2	40.2	38.7	31.0	23.1
M&M	9898	10.7	12.6	15.8	20.8	32.3	28.0	25.8	20.2
AGPR	1008	23.4	83.7	33.4	28.8	97.5	89.0	86.6	77.0
TXTL	622	20.0	33.4	36.8	46.4	103.0	76.7	80.6	62.5
SRVS	2656	5.2	2.2	9.4	7.6	4.1	-1.6	-2.0	-7.4

Table 8: Change in Exports (%)

Sector	Base (US$ million)	SAFTA	SAFTA-ASEAN	SAFTA-NAFTA	SAFTA-EU27	UTL	MTL	SACU 5	SACU 10
Bangladesh									
AGRI	138	44.1	32.7	21.9	54.6	21.1	42.8	24.4	28.2
M&M	930	8.5	18.4	-14.2	13.4	21.2	71.7	14.0	8.2
AGPR	317	3.7	30.3	-13.9	7.5	15.1	25.8	9.1	4.1
TXTL	5678	10.9	21.2	28.0	12.8	54.1	33.0	39.9	28.2
SRVS	858	0.3	0.7	-17.9	3.6	-0.9	20.5	-1.4	-1.7
India									
AGRI	3166	5.2	24.7	2.5	23.0	27.3	62.0	22.6	18.7
M&M	28819	5.2	20.7	8.5	22.1	60.6	69.5	44.3	30.6
AGPR	3751	9.1	34.7	6.4	22.9	22.3	36.2	18.0	14.1
TXTL	12401	0.8	16.6	49.5	63.6	77.6	53.3	65.6	54.8
SRVS	12426	-1.6	3.7	-4.5	0.0	9.8	12.4	6.1	2.6
Sri Lanka									
AGRI	966	2.1	4.2	-9.5	0.4	5.4	16.4	5.2	5.4
M&M	1272	16.0	17.2	-2.7	5.2	32.2	39.3	29.3	27.6
AGPR	128	7.8	6.9	-20.1	9.5	2.7	-8.4	5.5	8.9
TXTL	2972	-3.3	-2.6	18.3	5.7	-5.3	-11.1	-10.0	-14.0
SRVS	1136	-7.4	-6.4	-29.2	-15.2	-8.0	-11.5	-5.9	-3.6
Rest of S. Asia									
AGRI	683	18.8	30.6	5.6	36.1	17.0	148.9	14.9	13.6
M&M	2066	65.7	73.4	35.9	21.6	41.3	72.9	34.4	30.1
AGPR	963	66.7	10.8	48.9	46.0	0.9	8.4	0.4	0.3
TXTL	7287	-11.1	4.1	10.3	23.4	55.2	24.8	43.0	32.3
SRVS	2971	-11.2	-4.4	-18.1	-15.1	-7.1	5.0	-10.6	-13.8

In Sri Lanka only the mining and manufacturing sector witnesses a rise in output, while agriculture, agro-processing and textiles sector suffer loss of output following a move to SAFTA. Not surprisingly domestic prices rise, even as imports rise in agriculture, mining and manufacturing and agro-processing sectors.

RSA's exports show a steep rise in three commodities i.e. agricultural (18.8%) manufacturing (65.7%) and agro-processing (66.7%). RSA's textile output declines under SAFTA by -8.4%. As a result of these sectoral changes price rise in RSA is sharpest within the region.

One of the main considerations behind the formation of SAFTA is that it would promote trade within region. Indeed the results of the SAFTA scenario do suggest that intra-regional trade will rise dramatically (Table 9). Total intra-regional imports at c.i.f. prices rise almost three times from about US$ 4 billions to about US$ 11.5 billions following SAFTA. Imports by Bangladesh, India and RSA from each of the regional trade partners rise by well over 100%. The biggest jump is in India's imports from RSA by almost US$ 3 billions, followed by Bangladesh's imports from India (US$ 1.6 billions) and RSA's imports from India (US$ 1.4 billions). At a commodity level, Other Crops, Agro-processing, Textiles and Other Manufactures witness large rise in intra-regional trade (Appendix Table A7).

Table 9: Intra-regional trade in South Asia (US$ millions)

Exporting country	Base values					SAFTA (Scenario 2)				
	Importing country					Importing country				
	Bangladesh	India	Sri Lanka	RSA	Total	Bangladesh	India	Sri Lanka	RSA	Total
Bangladesh		64.3	4.9	53.3	122.5		137.8	6.9	105.3	250
India	1250		653.8	616.3	2520.1	2849		985.5	2026.4	5860.9
Sri Lanka	15.2	79		120	214.2	56.8	388.6		367	812.4
RSA	174.8	631.4	143.5	202.2	1151.9	623.6	3618	194.2	174.1	4609.9
Total	1440	774.7	802.2	991.8	4008.7	3529.4	4144.4	1186.6	2672.8	11533

Note: Bilateral imports at c.i.f. prices are reported.

In sum, SAFTA scenario presents a mixed picture. It is clear that SAFTA may not result in a win-win situation for all its member countries, with Bangladesh suffering significant welfare losses even as other members gain, albeit modestly in relation to their base GDP. This imbalance in the impacts across member countries may not be politically acceptable, especially in Bangladesh. However, intra-regional trade does rise significantly, which is likely to improve regional co-operation amongst members and bring with a peace dividend for its members that could out weigh the economic benefits. Nevertheless, it is pertinent to explore other policy options that might be economically beneficial to all the member countries even without compromising increased intra-regional trade and the non-economic benefits that it might bring along. Towards this we next examine if integration of SAFTA

with other major trading blocs in the world be welfare improving for all the South Asian countries. We start with the case of SAFTA-ASEAN integration, followed by SAFTA-NAFTA and SAFTA-EU27.

5.2 Scenario 2: SAFTA–ASEAN

In general, a combined SAFTA–ASEAN free trade bloc is expected to have a negative impact on the region's welfare (Table 4). The move from SAFTA to SAFTA-ASEAN results in an additional welfare loss of about US$ 71 millions for Bangladesh, while India, Sri Lanka and RSA suffer an erosion of the welfare gains that SAFTA brings them. Indeed, India loses more than half a billion dollars, which turns the situation from one of welfare gain under SAFTA to a situation of welfare loss of about US$389 millions under SAFTA-ASEAN.

For all the South Asian countries, the welfare loss arises out of adverse movement in the TOT that this scenario brings about. All these countries witness a decline in prices in all sectors compared to the SAFTA scenario (Table 6). As seen earlier, ASEAN is a major trading partner for all the South Asian countries and all of them have high base tariff rates vis-à-vis ASEAN.

Aggregate output, however, expands in all the South Asian countries (output loss in Bangladesh is less in this scenario than under SAFTA). At a sectoral level, the results are somewhat mixed (Table 5). In all the South Asian countries, textiles output level is expected increase when integrating with ASEAN. Output of mining and manufacturing sectors in India and in RSA rises. SAFTA-ASEAN also results in a marginal increase in services output in all these countries.

With the integration of SAFTA with ASEAN imports are expected to increase. In particular, imports of agro-processing products into India and RSA rise dramatically by 214% and 84%, respectively, mostly from ASEAN countries. Large rise in textiles and manufacturing imports is also seen into Bangladesh, India and RSA, and agricultural imports into Bangladesh and India.[5] Exports by the South Asian countries too witness significant rise in this scenario compared to the case of SAFTA alone (Table 8).

5.3 Scenario 3: SAFTA–NAFTA

A preferential trading arrangement between SAFTA and NAFTA is expected to bring welfare gains for all South Asian countries except India (Table 4). Indeed the welfare gains for Bangladesh, Sri Lanka and RSA are the highest in this scenario amongst all the eight scenarios studied here. Favourable terms of trade are the most important source of welfare gains in Bangladesh, Sri Lanka and RSA, followed by improvements in allocative efficiency

[5] Here it's important to note that India maintains a long list of sensitive sectors with ASEAN and Indian industries might get a big hit from imports following an FTA with ASEAN. The implementation of Early Harvest Scheme (EHS) for 84 commodities under India-Thailand FTA has already resulted in huge imports from not only from Thailand but also from ASEAN due to ineffective Rules of Origin (ROOs) and consequently loses for Indian industries, in general and for auto industry and Colour TV industry, in particular (Sahay and Saini, 2006).

especially in Sri Lanka and RSA. For India too, terms of trade improves marginally, but is inadequate to compensate the welfare loss due to reallocation of resources.

The terms of trade improvement for the South Asian countries is primarily due to the sharp increase in textiles exports Textiles is a major export item for all these countries, and NAFTA's base tariffs, which are very low in general, are highest for textiles (the rates for South Asia range from 10.4 to 12.8). Removal of these tariffs by NAFTA results in sharp rise in exports from the already high base levels in all the South Asian countries. The sharp rise in textiles output required to meet the surge in exports, entails dramatic reallocation of factors across sectors and, given our assumption of full employment of all factors, puts an upward pressure on factor prices (especially wages of unskilled labour) in all these countries.[6] Rising factor prices drives up domestic prices of all commodities in all these countries, with the exception of manufacturing sector prices in India.

The fall in the price of manufacturing sector in India is understandable given the large rise in her imports in this scenario. India had high base tariffs on these goods (24% - Appendix Table A4) imports and imported substantial amounts of these goods from NAFTA (about 12.2%; Source: GTAP database version 6.0). This leads to a 1.9% decline in output, which is large given the high base output level for this sector in India.

The results of this scenario highlight the contrasts within South Asia. What turns out to be highly beneficial for a three of the countries within this region is not beneficial at all to the largest country in this region, raising doubts about the feasibility of such an extended preferential trading bloc between SAFTA and NAFTA.

5.4 Scenario 4: SAFTA–EU27

This scenario of an enhanced preferential trade bloc between SAFTA and EU27 yields a different set of winners and losers in terms of welfare amongst the South Asian countries. Bangladesh, India and RSA suffer welfare loss in this scenario than under SAFTA (though it is still welfare improving for RSA when compared with the base case), while Sri Lanka gains in welfare under this scenario. Indeed, at US$ 362 and 751 millions, respectively, welfare loses for Bangladesh and India are highest in this scenario amongst the four preferential trading scenarios studied here.

The source of welfare loss/gains differ across these countries. Bangladesh is likely to lose due both to an adverse terms of trade and allocative efficiency. For India (Sri Lanka), adverse (favourable) terms of trade is the main source of welfare loss (gain). Compared to the SAFTA scenario, RSA's welfare gain is basically due to improvements in allocative efficiency, while the contribution of terms of trade effect is positive but lower than under SAFTA.

The reasons behind these results are fairly easy to understand. EU27 is a major trading partner for all the four South Asian countries. The relative importance of different

[6] Changes in factor prices in the scenarios have not been reported here, but are available upon request.

commodities, both on the export and import side, and the base tariff structure in the EU and in these four countries present a mixed picture. In the case of Bangladesh, India and RSA, the base tariffs applicable for imports from EU27 are high for most commodities, including major imports such as for some agricultural and agro-processed products, and other manufactures. In contrast, Sri Lanka's base tariffs on its major imports from EU27 are generally low. Consequently, tariff removal by the South Asian countries for EU27 products has greater impacts for Bangladesh, India and RSA than for Sri Lanka. Imports rise substantially in many of these products in Bangladesh, India and RSA. In contrast, the rise in Sri Lanka's imports are relatively smaller.

EU27's base tariffs for the South Asian countries are low on most commodities except cereals (from all the four countries), agro-processed products (from India, Sri Lanka and RSA) and textiles products (from India and Sri Lanka). Amongst these few high tariff items EU27's major imports from South Asia includes cereals (from India and RSA), and textiles (from all the four countries). Thus, tariff removal by EU27 for the South Asian countries brings benefits mainly to the textiles sector in these countries, that too primarily for India, and to the cereals sector in India and RSA.

As a result of these changes in trade flows, prices decline in Bangladesh more than in the SAFTA case, and consequently output declines in all the sectors (except Textiles) and in the aggregate as well. In India, the mining and manufacturing sectors witness declining prices and substantial loss in output. In Sri Lanka prices of all sectors rise more than in SAFTA case but only the Textiles sector witnesses a rise in output, which more than offsets the output loss in agriculture and mining and manufacturing sectors.

The output and price impacts in RSA are similar to that seen earlier for Bangladesh in the SAFTA-NAFTA scenario. The surge in textiles export from RSA in this scenario triggers a very large rise in textiles output, which in turn rises the demand for unskilled labour in the textiles sector. Given our specification of full employment closure unskilled labour wages rises in this scenario by nearly 6.5% over base levels, resulting in price rise in all sectors of the economy.

5.5 Scenario 5: Unilateral Trade Liberlisation

None of the above four preferential trading scenarios in which the South Asian countries liberalise trade with specific trading partners on a reciprocal basis brings welfare gains for all the countries of the region. As an alternative, would full trade liberalisation by the South Asian countries benefit all of them? Would the impacts vary depending upon whether the South Asian countries embark upon full trade liberalisation unilaterally or as part of an multilateral trade agreement. The case of unilateral trade liberalisation (UTL) by all the South Asian countries is discussed in this section, while the next section examines the case of multilateral trade liberalisation (MTL).

Full trade liberalisation carried out unilaterally by the South Asian countries has differential welfare impacts on them. Bangladesh suffers welfare losses, while India, Sri Lanka and RSA gain in welfare. Welfare loss (gain) for Bangladesh (Sri Lanka and RSA) under UTL is, however, less than under SAFTA. For India UTL is clearly a better option than SAFTA or any of the other preferential trading arrangements studied earlier. Interestingly, all the South Asian countries lose heavily due to adverse terms of trade compared to the SAFTA case. Gains in allocative efficiency mutes or surpasses the loss due to adverse terms of trade for all of them.

The adverse terms of trade suffered by them is not surprising given their generally high base tariffs on most commodities. Two way trade is expected to grow much faster under UTL than under any of the preferential trade scenarios. Higher imports in this scenario causes prices to decline sharply. Indeed, prices of all the commodities in all the South Asian countries are lower in UTL than under SAFTA. For Sri Lanka and RSA, though prices of several commodities are higher than base levels, the extent of price rise is less than under the preferential trade scenarios.

Exports too rise dramatically for many commodities in all the South Asian countries. Notable are the cases of textiles in Bangladesh, India and RSA, and mining and manufacturing in India Sri Lanka and RSA. Significant rise in agricultural exports too take place under UTL unlike in the preferential trading scenarios. The rise in exports, however, does not lead to a rise in output in all these cases. In fact, output of many commodities decline all across the region. Output rises primarily in the textiles sector in Bangladesh, India and RSA, and in the mining and manufacturing sector in Sri Lanka. These changes in the output composition results in efficiency gains that dampens (dominates) the welfare loss due to adverse terms of trade in Bangladesh and Sri Lanka (India and RSA) compared to SAFTA.

To sum up, UTL too producers winners and losers amongst the South Asian countries, and does not seem to be a welfare improving policy option for them except for India.

5.6 Scenario 6: Multilateral Trade Liberlisation

In this scenario, the South Asian countries undertake trade liberalisation as part of a global agreement under which all countries remove all import tariffs and export subsidies vis-à-vis all other countries. Results of this multilateral trade liberalisation (MTL) scenario are for most part qualitatively similar to those of UTL seen above, but interesting variations at the commodity level emerge, especially with regard to the trade flows.

As with the scenarios seen so far, multilateral trade liberalisation (MTL) too producers winners and losers amongst the South Asian countries. India and Sri Lanka gain in welfare to the tune of US$ 1279 and 178 millions, respectively, while Bangladesh and RSA suffer welfare loss of about US$ 641 and 52 millions, respectively (Table 4). The welfare gains for India and Sri Lanka and the welfare loss for Bangladesh are more in this scenario than under UTL and also SAFTA. For RSA, the situation changes from welfare gain under UTL or any

of the preferential trading scenarios seen earlier to welfare loss in this scenario. Amongst the eight scenarios considered here welfare loss is highest in this scenario for Bangladesh, and this is the only scenario wherein RSA suffers welfare losses. Thus, MTL is a superior option for India and Sri Lanka compared to both UTL and also SAFTA, but not for Bangladesh and RSA.

All the South Asian countries suffer adverse terms of trade under this scenario, which is compensated partially or more than fully by gains in allocative efficiency. Removal of tariffs results in a surge in imports of almost all the commodities into all the South Asian countries, as was the case in UTL. However, this does not lead to declining prices in all the commodities in all the countries as seen earlier under UTL. This is primarily because interesting deviations in the results are seen in the export basket of these countries. While exports of several commodities rise, Textiles does not lead the export surge in Bangladesh, India and RSA in this scenario as was the case in UTL and all the preferential trading scenarios. This could be because in this scenario where all countries liberalise trade, the South Asian countries could be facing greater competition in textiles sector from other countries. Consequently, output expansion is lower in MTL than in UTL, though the sectoral pattern of change in output remains similar to that in UTL in all the South Asian countries.

The MTL scenario brings out the true state of comparative advantages and disadvantages faced by the South Asian countries. It also reveals that not all the countries of the region would benefit from a global free trade regime. From the perspective of this study that focuses on the potential for coordinated trade policies in South Asia, full free trade whether carried out unilaterally or in a multilateral framework is not an uniformly superior alternative for all the member states. In the following sections we examine the potential for economic cooperation in South Asia in forming a customs union with alternative rates of common external tariffs (CET) at 5% (Scenario 7) and 10% (Scenario 8).

5.7 Scenario 7: SACU 5

This scenario involves deeper regional integration in South Asia wherein the countries establish a free trade zone (SAFTA) and a customs union with a CET of 5% on all commodities against all non-regional trading partners. Given the high base tariffs on several commodities, especially in Bangladesh, India and RSA, this scenario still involves large tariff cuts by the South Asian countries against the rest of the world.

The combination of SAFTA plus a customs union with 5% CET appears to be a better option for Bangladesh, India and RSA than just SAFTA alone or full trade liberalisation (UTL / MTL) though Bangladesh still loses in terms of aggregate welfare. The loss in welfare for Bangladesh at just US$ 36 millions is much less than in either the SAFTA or in MTL. India, Sri Lanka and RSA gain in welfare in this scenario compared to base levels. The gains for India and RSA in this scenario are much higher than under SAFTA or full trade liberalisation, whereas the converse is happens for Sri Lanka.

All the South Asian countries except Sri Lanka continue to suffer adverse terms of trade following the large cuts in tariffs mentioned earlier. However, gains in allocative efficiency more than compensates the loss due to terms of trade. Turning to the movements in imports, exports, prices and output, the pattern that emerges is that the changes (rise / fall) in this scenario are less than under UTL[7] but more than under SAFTA. The domination of textiles in the changes to the export basket and in the output composition continues in this scenario also.

5.8 Scenario 8: SACU 10

This scenario is similar in design to the previous one except that the CET is fixed at 10%. Even at this level of CET this scenario involves substantial tariff cut in many commodities by Bangladesh, India and RSA from their high base levels, while for Sri Lanka some of the tariffs actually rise. Consequently, the impacts for Sri Lanka are qualitatively (and quantitatively) different from those for Bangladesh, India and RSA.

Aggregate welfare increases in all the four South Asian countries in this scenario compared to base levels (Table 4). It is noteworthy that this is the only scenario amongst the eight alternative studied here where this happens. There is, however, enormous variation in the welfare gains across countries, from a paltry US$ 14 millions for Bangladesh to slightly over US$ 2.5 billions for India. As expected, Bangladesh, India and RSA suffer adverse terms of trade due to the tariff cuts in this scenario, which results in a rise in imports and a fall in prices of several major commodities. However, the fall in price in this scenario is less than in the previous scenario where the CET was only 5%. Welfare gains for these three countries are largely due to gains in allocative efficiency, which more than offsets the loss due to adverse terms of trade. The results for Sri Lanka are exactly opposite. Terms of trade improves as many of Sri Lanka's tariffs increase, and this additional tariff protection results in a loss in allocative efficiency that dampens some of the welfare gains due to favourable terms of trade. Overall, the trade pattern, price and production behaviour is not much different from that under SACU5.

As mentioned above, this is the only scenario amongst all the eight scenarios considered in this study wherein all the four South Asian countries enjoy welfare gains compared to base levels. However, it would be a mistake to conclude that this scenario is the best for regional cooperation in South Asia. First of all, welfare gains vary substantially across the countries in this scenario. Secondly, welfare gain is not the highest in this scenario for Bangladesh, Sri Lanka and RSA, but in an expanded preferential trade between SAFTA and NAFTA. In fact for Sri Lanka, the welfare gains of US$ 33 millions in this scenario is the lowest amongst all the eight scenarios studied here. On the contrary, the gains for India are highest in this scenario. In a situation where the largest country in the region gains most while the other

[7] Note that the UTL scenario can also be interpreted as SAFTA plus South Asian Customs Union with 0% CET, and thus varies from the present scenario only with respect to the CET specified.

smaller countries gain little (though they do not suffer losses) is unlikely to propel all the countries of the region to work towards a common trade policy as described in this scenario.

5.9 Welfare Impacts on Other Regions

Thus far we have discussed the results from the perspective of the four South Asian countries. What are the impacts of these scenarios on the other countries / regions of the world? This especially relevant for the three extended preferential trading scenarios, viz., SAFTA-ASEAN, SAFTA-NAFTA and SAFTA-EU27. While the GTAP model does provide detailed results for all the countries, we confine the discussion here to the aggregate welfare impacts on the other countries in the eight scenarios. Table 10 reports the changes in aggregate welfare across all the eight scenarios for all 15 the countries / regions that we have considered here.

As expected, SAFTA does not bring welfare gains for any of the non-member countries, which is consistent with theory. Similarly, the three extended preferential trading scenarios, viz., SAFTA-ASEAN, SAFTA-NAFTA and SAFTA-EU27, benefit only to that particular participating region amongst the non-South Asian countries, viz., ASEAN, NAFTA and EU27, respectively. In contrast, the two full trade liberalisation scenarios (UTL and MTL) and the two South Asia customs union scenarios (SACU5 and SACU10) bring welfare gains to several other non-South Asian countries. Notable amongst the gainers is Sub-Saharan Africa (SSA). Surprisingly, China and Japan, both major trading powers, do not gain in welfare from any of these scenarios except the full global free trade scenario (MTL).

6 Conclusion

Regional economic cooperation in South Asia has historically been a half hearted halting attempt at best despite efforts over more than two decades. The agreement to establish a South Asian Free Trade Area (SAFTA) is an attempt to accelerate cooperation amongst member states. The advisability and potential of SAFTA has, however, been questioned both theoretically and empirically. Theoretical objections have centred around the potential trade diversion that can take place following the establishment of SAFTA. Empirical doubts have been expressed over the agreement's potential to expand trade within the region due to the limited complementarities that exist amongst the countries of the region. This paper attempts to evaluate the Pareto optimality of SAFTA for all the member states. Besides, the welfare optimality of three other alternative sets of coordinated trade policies that go beyond SAFTA has also been studied here. These include (a) extended preferential trading between SAFTA and three other major trading blocs (ASEAN, NAFTA and EU27), (b) coordinated full trade liberalisation (carried out unilaterally or as part of a multilateral agreement) by South Asian countries, and (c) SAFTA plus a customs union (two variants with 5% and 10% CET). The analysis has been carried out using the standard static GTAP model, a global computable general equilibrium model, with 15 countries / regions and 11 sectors. GTAP has been widely

Table 10: Aggregate Welfare Change (US$ millions)

Country / region	SAFTA	SAFTA-ASEAN	SAFTA-NAFTA	SAFTA-EU27	UTL	MTL	SACU 5	SACU 10
ANZ	-19	-55	-76	-106	398	3874	320	251
CHN	-13	-242	-372	-421	-164	10767	-165	-162
JPN	-65	-501	-184	-269	-74	12164	-58	-39
REA	-58	-334	-252	-265	102	15211	4	-80
ASEAN	-83	3247	-389	-468	1247	4302	985	751
BGD	-225	-296	266	-362	-173	-641	-36	14
IND	204	-389	-448	-751	902	1279	1958	2556
LKA	89	68	489	206	52	178	61	33
RSA	521	269	801	398	308	-52	534	668
NAFTA	-172	-119	1095	-575	696	-161	428	202
RAMR	-28	-250	-391	-224	68	3653	-1	-61
EU27	-191	-494	-884	5128	2256	17710	1756	1323
REUR	-22	-6	-183	-458	185	1672	96	17
MENA	-39	-3	-420	-747	862	1407	578	325
SSA	-29	-88	-113	-223	600	-98	452	321

used in recent years due to its consistent database at the global level. The GTAP model and the database are known to some limitations, and the results of this study are also subject to these limitations. In all eight scenarios (including SAFTA) have been simulated here assuming complete factor mobility across all sectors in each of the South Asian countries. The results in this study might underestimate welfare gains since the standard static GTAP model does not capture possible dynamic effects (e.g. capital accumulation and technology changes) of trade policy changes.

Within these limitations, the results clearly bring out the dilemma that confronts the South Asian countries. Each of the eight scenarios considered here show that there would be winners and losers amongst the member states, and that the winners and losers vary across scenarios, though the gains / losses as the case may be are not very large.

SAFTA per se is likely to result in welfare loss of US$ 225 millions for Bangladesh, while India, Sri Lanka and Rest of South Asia are likely to gain by US$ 204, 89 and 521 millions, respectively. It must be noted here that these welfare impacts have been worked out under assumptions of full factor mobility across sectors in all the South Asian countries. Allowing for rigidities in factor mobility across sector would only reduce the welfare gains and increase the welfare losses. It would not alter the fact that there are winners and losers amongst the South Asian countries in this (and other) scenario(s). Thus, SAFTA does not appear to be a Pareto superior policy option for the region as a whole. Nevertheless, our results also point out that intra-regional trade in South Asia rises by nearly three times – from a base level of about US$ 4 billions to US$ 11.5 billions under SAFTA.

A coordinated move by the South Asian countries to extend preferential trading under SAFTA to ASEAN, NAFTA or EU27 is unlikely to benefit all the countries of South Asia. Preferential trading between SAFTA and ASEAN results in a welfare loss for all the South Asian countries compared to SAFTA, while ASEAN gains in welfare. Extending preferential trading to cover SAFTA and NAFTA hurts India but benefits the other three countries of the region and NAFTA. In contrast, EU-27 and Sri Lanka are the main beneficiary in a combined SAFTA-EU27 preferential trading bloc while the rest of the countries from South Asia lose. Thus, SAFTA and other extended preferential trading arrangements are not Pareto optimal for the countries of South Asia.

Nor is a move by South Asian countries to a full free trade regime, whether done unilaterally or as part of a multilateral agreement, beneficial to all the countries of the region. India and Sri Lanka gain from a global free trade regime, though the gains are not the highest amongst alternative scenarios for both of them. In contrast, Bangladesh and RSA suffer most from a global free trade regime.

Similarly, efforts at establishing a South Asian free trade are along with a customs union vis-à-vis the rest of the world is unlikely to maximize welfare for all the countries. Although a customs union with 10% CET results in welfare gains for all the South Asian countries, this is not the best scenario from the perspective of Bangladesh, Sri Lanka and RSA. Indeed, the

dilemma confronting these countries is that the welfare maximising scenario differs for India on one side and Bangladesh, Sri Lanka and RSA on the other side. For India, a South Asia Customs Union with 10% CET brings maximum gains, while for the other three countries it is an extended SAFTA-NAFTA preferential trade bloc that brings maximum gains.

Thus, the welfare basis for establishing SAFTA or for deeper trade policy coordination is not very strong. Nor is it obvious that economic cooperation in South Asia would be forthcoming given these anticipated welfare impacts. Nevertheless, economic cooperation in South Asia may be desirable for other non-economic reasons. Our results do point to greater intra-regional trade in South Asia. Strengthening of trade links may help smoothen political frictions amongst the South Asian countries. The "peace dividend", such as a reduction in military expenditure, that could follow may far outweigh the direct economic benefits, and economic cooperation amongst South Asian countries may still be justified.

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Appendix Table A1 Region Aggregation

No.	Code	Region description	Comprising
1	ANZ	Australia New Zealand Oceania	Australia; New Zealand; Rest of Oceania
2	CHN	CHN - China	China
3	JPN	Japan	Japan
4	REA	Rest of East Asia	Hong Kong; Korea; Taiwan; Rest of East Asia
5	ASEAN	ASEAN	Indonesia; Malaysia; Philippines; Singapore; Thailand; Vietnam; Rest of Southeast Asia
6	BGD	Bangladesh	Bangladesh
7	IND	India	India
8	LKA	Sri Lanka	Sri Lanka
9	RSA	Rest of South Asia	Rest of South Asia
10	NAFTA	North American Free Trade Area	Canada; United States; Mexico
11	RAMR	Rest of Americas	Rest of North America; Colombia; Peru; Venezuela; Rest of Andean Pact; Argentina; Brazil; Chile; Uruguay; Rest of South America; Central America; Rest of FTAA; Rest of the Caribbean
12	EU27	European Union 27	Austria; Belgium; Denmark; Finland; France; Germany; United Kingdom; Greece; Ireland; Italy; Luxembourg; Netherlands; Portugal; Spain; Sweden; Cyprus; Czech Republic; Hungary; Malta; Poland; Romania; Slovakia; Slovenia; Estonia; Latvia; Lithuania
13	REUR	Rest of Europe	Switzerland; Rest of EFTA; Rest of Europe; Albania; Bulgaria; Croatia; Russian Federation; Rest of Former Soviet Union; Turkey
14	MENA	Middle East North Africa	Rest of Middle East; Morocco; Tunisia; Rest of North Africa
15	SSA	Sub Saharan Africa	Botswana; South Africa; Rest of South African CU; Malawi; Mozambique; Tanzania; Zambia; Zimbabwe; Rest of SADC; Madagascar; Uganda; Rest of Sub-Saharan Africa

Appendix Table A2: Commodity Aggregation

No.	Code	Commodity description	Comprising
1	CRLS	Cereals	Paddy rice; Wheat; Cereal grains nec
2	OCRPS	Other crops	Vegetables, fruit, nuts; Oil seeds; Sugar cane, sugar beet; Plant-based fibres; Crops nec
3	ANML	Animal products incl fishing	Cattle, sheep, goats, horses; Animal products nec; Raw milk; Wool, silk-worm cocoons; Fishing
4	NRES	Natural Resources	Forestry; Coal; Oil; Gas; Minerals nec
5	AGPR	Agro processing	Meat: cattle, sheep, goats, horse; Meat products nec; Vegetable oils and fats; Dairy products; Processed rice; Sugar; Food products nec; Beverages and tobacco products
6	TXTL	Textiles and garments	Textiles; Wearing apparel
7	PETR	Petroleum and coal products	Petroleum, coal products
8	OMNF	Other manufactures	Paper products, publishing; Leather products; Wood products; Chemical, rubber, plastic prods; Mineral products nec; Ferrous metals; Metals nec; Metal products; Motor vehicles and parts; Transport equipment nec; Electronic equipment; Machinery and equipment nec; Manufactures nec
9	CNSTRN	Construction	Construction
10	MRGNS	Margin services	Trade; Transport nec; Sea transport; Air transport; Communication
11	OSRVS	Other services	Electricity; Gas manufacture, distribution; Water; Financial services nec; Insurance; Business services nec; Recreation and other services; PubAdmin/Defence/Health/Educat; Dwellings

Appendix Table A3: Bilateral import tariffs of Bangladesh, 2001

Sector	ANZ	CHN	JPN	REA	ASEAN	BGD	IND	LKA	RSA	NAFTA	RAMR	EU27	REUR	MENA	SSA
CRLS	5.0	0.0	5.0	0.9	4.8	0.0	4.7	0.0	2.0	5.1	0.5	5.0	5.0	0.0	0.0
OCRPS	5.7	25.4	4.6	6.0	11.4	0.0	17.2	34.7	3.9	2.9	5.9	8.7	0.4	3.6	4.1
ANML	2.5	5.0	24.6	12.7	17.8	0.0	25.0	12.5	0.4	23.9	6.2	10.3	0.9	8.9	10.6
NRES	16.0	6.0	5.9	19.2	3.5	0.0	9.5	0.0	11.5	4.9	0.2	13.3	3.6	29.6	6.1
AGPR	32.5	18.2	21.9	26.4	23.3	0.0	17.1	27.5	9.9	15.6	15.7	27.1	31.6	26.9	26.0
TXTL	20.3	35.1	28.8	32.1	26.5	0.0	16.7	29.7	32.0	26.1	23.8	31.7	28.9	21.9	23.3
PETR	32.9	23.1	29.8	28.7	32.6	0.0	33.0	0.0	30.2	29.7	0.0	27.0	20.8	15.6	30.1
OMNF	8.8	15.2	16.7	17.2	18.4	0.0	16.2	20.9	17.1	8.5	14.4	10.8	10.5	19.0	12.3
CNSTRN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MRGNS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OSRVS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: GTAP database version 6.0

Appendix Table A4: Bilateral import tariffs of India, 2001

Sector	ANZ	CHN	JPN	REA	ASEAN	BGD	IND	LKA	RSA	NAFTA	RAMR	EU27	REUR	MENA	SSA
CRLS	68.5	49.7	0.0	0.0	11.7	79.7	0.0	0.0	0.0	33.0	52.0	4.0	0.0	0.1	10.3
OCRPS	27.0	34.1	11.8	18.5	37.3	18.4	0.0	19.9	37.4	25.9	6.1	31.0	23.0	30.6	21.0
ANML	14.9	17.8	17.5	14.1	17.1	1.0	0.0	27.3	19.5	13.9	13.5	6.9	11.5	5.3	3.0
NRES	27.7	27.4	29.3	5.2	14.7	0.0	0.0	25.5	1.6	15.0	14.3	6.8	10.7	15.2	16.8
AGPR	41.9	51.1	66.4	37.0	94.8	17.7	0.0	56.7	55.1	45.1	53.8	86.4	36.1	47.3	44.9
TXTL	30.7	31.5	24.9	26.6	23.2	14.4	0.0	28.1	21.9	28.2	23.9	29.1	27.6	27.7	30.2
PETR	28.2	16.5	17.5	21.1	21.7	0.0	0.0	0.0	0.0	27.5	14.7	29.4	15.0	11.9	16.6
OMNF	30.4	29.6	29.9	26.4	22.4	12.2	0.0	28.7	29.7	24.0	29.7	30.2	28.9	30.4	33.5
CNSTRN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MRGNS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OSRVS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: GTAP database version 6.0

Appendix Table A5: Bilateral import tariffs of Sri Lanka, 2001

Sector	ANZ	CHN	JPN	REA	ASEAN	BGD	IND	LKA	RSA	NAFTA	RAMR	EU27	REUR	MENA	SSA
CRLS	0.3	5.0	0.0	0.0	5.0	0.0	11.4	0.0	31.8	0.0	3.4	0.0	0.0	9.2	2.5
OCRPS	13.4	19.5	3.2	2.1	53.6	4.5	24.3	0.0	27.5	44.7	64.2	29.4	13.8	13.5	24.6
ANML	10.5	5.5	6.5	9.4	11.3	0.0	12.8	0.0	8.1	13.3	0.0	3.2	0.7	4.6	10.2
NRES	0.0	3.2	5.0	6.7	0.6	0.0	5.9	0.0	1.1	6.4	6.6	1.1	5.5	0.1	6.1
AGPR	11.4	25.2	15.5	8.5	19.2	0.0	19.7	0.0	12.5	30.0	5.6	18.3	16.6	15.9	59.4
TXTL	0.8	0.9	1.4	1.5	1.6	3.1	1.8	0.0	4.0	2.2	1.0	1.0	0.4	4.1	0.5
PETR	8.5	9.0	10.1	11.8	6.9	0.0	6.3	0.0	0.0	8.9	2.3	10.1	7.5	15.4	14.9
OMNF	5.0	8.5	7.4	8.8	7.6	7.0	6.2	0.0	6.0	5.2	4.2	5.6	4.1	5.3	7.2
CNSTRN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MRGNS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OSRVS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: GTAP database version 6.0

Appendix Table A6: Bilateral import tariffs of Rest of South Asia, 2001

Sector	ANZ	CHN	JPN	REA	ASEAN	BGD	IND	LKA	RSA	NAFTA	RAMR	EU27	REUR	MENA	SSA
CRLS	5.4	0.0	4.9	0.0	5.0	0.0	12.4	14.2	0.6	23.5	0.2	18.1	24.3	9.4	3.8
OCRPS	6.8	13.2	10.5	9.7	17.8	11.9	14.0	16.9	21.7	6.9	8.9	9.8	6.3	9.8	23.2
ANML	1.6	5.6	7.9	4.7	9.8	2.8	9.8	10.3	4.2	7.8	4.2	6.2	3.7	6.4	5.5
NRES	7.3	6.0	15.0	3.8	10.5	0.0	6.2	11.7	15.9	9.8	0.6	8.8	7.9	16.1	11.0
AGPR	14.7	16.7	16.5	25.3	52.7	36.0	26.7	15.8	11.0	31.4	31.6	25.7	19.9	21.9	24.5
TXTL	11.1	15.3	14.7	21.8	17.2	25.6	14.3	21.0	15.9	16.1	9.4	18.6	13.2	22.3	12.8
PETR	18.9	10.1	18.8	16.6	16.6	0.0	19.9	17.6	0.0	19.1	7.9	17.6	15.7	12.6	16.1
OMNF	14.8	16.9	30.3	18.9	15.3	17.5	20.7	16.7	16.4	12.5	16.2	16.5	14.0	14.2	18.7
CNSTRN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MRGNS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OSRVS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: GTAP database version 6.0

Appendix Table A7: Intra-regional imports at c.i.f. prices (US$ millions)

	Base values			SAFTA Scenario values		
Importing country	**Exporting country**			**Exporting country**		
Bangladesh	**India**	**Sri Lanka**	**RSA**	**India**	**Sri Lanka**	**RSA**
Cereals	106.1	0.0	0.0	126.2	0.0	0.0
Other crops	128.7	0.8	15.2	249.7	3.0	14.0
Animal products	10.2	1.0	0.4	18.4	1.2	0.3
Natural resources	26.3	0.0	3.1	68.5	0.0	8.4
Agro-processing	118.6	2.4	34.2	233.1	7.1	43.7
Textiles	249.8	1.4	93.7	599.4	7.2	484.9
Petroleum products	34.8	0.0	0.1	98.1	0.0	0.2
Other manufactures	572.0	8.7	25.4	1452.0	37.6	69.5
Construction	0.0	0.0	0.0	0.0	0.0	0.0
Margin activities	1.1	0.3	1.7	1.1	0.3	1.6
Other services	2.5	0.6	1.1	2.5	0.6	1.0
Total	1250.0	15.2	174.8	2849.0	56.8	623.6
India	**Bangladesh**	**Sri Lanka**	**RSA**	**Bangladesh**	**Sri Lanka**	**RSA**
Cereals	0.2	0.0	0.1	3.5	0.0	0.1
Other crops	20.2	22.1	89.7	43.8	48.7	343.0
Animal products	5.9	0.6	2.5	6.3	1.3	4.3
Natural resources	0.0	0.7	30.5	0.0	7.2	30.5
Agro-processing	1.1	0.7	138.0	2.2	5.4	968.1
Textiles	5.2	2.4	62.6	14.5	13.1	216.7
Petroleum products	0.0	0.3	0.4	0.0	0.3	0.4
Other manufactures	26.0	39.1	274.7	61.6	300.2	2024.0
Construction	0.0	0.0	0.3	0.0	0.0	0.3
Margin activities	2.2	6.6	18.9	2.2	6.3	17.3
Other services	3.6	6.5	13.8	3.6	6.2	12.7
Total	64.3	79.0	631.4	137.8	388.6	3618.0
Sri Lanka	**Bangladesh**	**India**	**RSA**	**Bangladesh**	**India**	**RSA**
Cereals	0.0	9.1	0.0	0.0	17.1	0.1
Other crops	0.3	68.7	18.4	0.2	134.8	35.8
Animal products	0.0	0.7	0.5	0.0	1.1	0.7
Natural resources	0.0	2.7	0.6	0.0	5.7	0.6
Agro-processing	0.0	47.3	37.2	0.0	104.5	53.4
Textiles	2.3	145.0	64.5	3.0	157.4	70.6
Petroleum products	0.0	7.6	0.2	0.0	9.7	0.2
Other manufactures	2.0	362.8	20.2	3.3	545.4	31.1
Construction	0.0	0.0	0.0	0.0	0.0	0.0
Margin activities	0.1	3.8	1.3	0.1	3.8	1.2
Other services	0.3	6.1	0.5	0.3	6.1	0.5
Total	4.9	653.8	143.5	6.9	985.5	194.2

Appendix Table A7: Intra-regional imports at c.i.f. prices (US$ millions)

Importing country	Base values				SAFTA Scenario values			
	Exporting country				Exporting country			
Rest of South Asia (RSA)	**Bangladesh**	**India**	**Sri Lanka**	**RSA**	**Bangladesh**	**India**	**Sri Lanka**	**RSA**
Cereals	0.0	0.5	0.0	8.6	0.0	1.1	0.1	8.4
Other crops	44.2	38.3	33.4	27.0	79.9	74.0	71.6	24.2
Animal products	0.0	0.9	0.9	1.6	0.0	1.3	1.4	1.5
Natural resources	0.0	45.3	0.2	7.6	0.0	98.4	0.3	6.1
Agro-processing	0.3	128.3	8.5	107.1	1.2	401.9	16.5	90.8
Textiles	1.3	23.8	56.4	4.3	6.8	57.2	196.2	3.3
Petroleum products	0.0	5.3	0.5	0.1	0.0	11.3	1.0	0.1
Other manufactures	4.1	346.4	17.4	40.5	13.7	1352.8	77.4	34.6
Construction	0.0	0.3	0.0	0.1	0.0	0.3	0.0	0.1
Margin activities	0.9	15.4	2.0	2.6	1.0	15.9	2.0	2.5
Other services	2.5	11.8	0.6	2.9	2.7	12.3	0.6	2.7
Total	53.3	616.3	120.0	202.2	105.3	2026.4	367.0	174.1