Journal of Economic Integration
11(4), December 1996; 478–491

A South Asian Preferential Trading Arrangement: Implications for Regional Trade in Food Commodities

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Abstract

As regionalism is regaining its momentum in different parts of the world, South Asian countries are becoming increasingly interested in regional integration to achieve expanded trade and economic growth in the region. This study attempts to analyze the implications of a South Asian Preferential Trading Arrangement (SAPTA) for expanded trade in food commodities. The import and export intensity indices for food commodities suggest many strong trade linkages between different South Asian countries. Using a partial equilibrium model, the ex-ante trade creation and trade diversion effects of a SAPTA are computed for food commodities. The results indicate that SAPTA would yield a considerable trade expansion in the region and would be welfare improving for all the South Asian countries. (JEL Classification: F15, F17, F1)

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I. Introduction

As regionalism is regaining its momentum in different parts of the world, South Asian countries are increasingly becoming interested in regional cooperation to achieve expanded trade and economic growth in the region. The seven South Asian nations, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka formed the South Asian Association for Regional Cooperation (SAARC) in December, 1985 to promote regional cooperation. In the seventh summit of the SAARC held in Dhaka, Bangladesh in April, 1993, the member countries have seriously considered forming a South Asian Preferential Trading Area (SAPTA) and approved a SAPTA plan seeking to reduce trade barriers in the region ⟨SAARC [1993]⟩. In the recent and latest SAARC conference held in New Delhi in May 1995, it has been decided to implement the SAPTA towards the end of 1996.

Macroeconomic and trade policies pursued by many developing countries in the past have been biased against the agricultural sector ⟨Krueger, Schiff, and Valdes [1991] and Bautista and Valdes [1993]⟩. A frequent shortcoming of previous studies on trade cooperation among developing countries is their primary focus on trade in manufacturers, and its contribution to industrialization. Given the importance of agriculture to national output and employment, and the bias against agriculture found in the policies of many developing countries, it is appropriate to investigate the implications of regional trading arrangements for performance of the agriculture sector. Unlike many other regional trading arrangements, agricultural products are included under SAPTA. Also, being one of the poorer regions of the world, achieving food security through regional cooperation is important for the South Asian countries. By expanding the trade flows between South Asian countries, each country can expand its food availability and access to food, thereby reducing food insecurity. While some efforts have been made in the past to study the past trends and future prospects of many regional integration efforts in the world ⟨de Melo and Panagariya [1993]⟩, this study makes an attempt in such a direction to analyze the past trends in the trade pattern of South Asian countries and potential impacts of a South Asian Preferential Trading Arrangement, focusing on food commodities.

In the context of intra-regional trade relations among the South Asian

countries, the objective of the study is to analyze the effects of regional trading arrangements among developing countries on agricultural trade, economic development and welfare.

Specifically, the study aims to answer the following questions:

(1) to what extent intra-regional trade takes place and who are the major importers and exporters of the region?
(2) whether the current level of trade between different SAARC countries is higher or lower than the level in proportion to world trade? and
(3) whether greater economic integration leads to net trade creation in food commodities and enhancement of economic welfare?

This paper is organized into five sections. The background on regionalism among developing countries and the extent of regionalism in South Asia are discussed in the next section. An emphasis is placed on the discussion about the trade pattern of food commodities. Section III describes the theoretical and empirical framework used in the study. The partial equilibrium trade model used to estimate the trade and welfare effects is explained. The results of the analysis of potential impacts of a South Asian Preferential Trading Arrangement for food commodities are discussed in section IV. Section V finally summarizes and provides major conclusions of the study.

II. Regionalism: Developing Countries and South Asia

In the early 1960s, some efforts have begun on regional cooperation among several developing countries in different parts of the world. Since then, several regional trading arrangements have been formed in Asia, Africa, and Latin America. While the interest in regional integration has been keen always in Africa, followed by Latin America, the interest in the Asian region has been intensified in the early 1990s. In Africa, several trading arrangements such as the East African Common market (EACM), West African Economic Community (WAEC), Economic Community of West African States (ECOWAS), Southern African Development Community (SADC), and Preferential Trading Area of Eastern and Southern African States (PTA) have been established. In Latin America, the Latin America Free Trade Association (LAFTA) was founded in 1960, followed by the Latin American Integration Association (LAIA), Central American Common Mar-

ket, Caribbean Community (CARICOM), Andean Common Market, and Southern Cone Common Market (MERCOSUR). The Asian region has shown interest in the regional integration recently with the formation of Association of South East Asian Nations (ASEAN), and the SAARC. The problems faced by the developing countries in regional cooperation, the advantages of regional cooperation, and the experiences of some of the regional integration arrangements are described in detail by Langhammer and Hiemenz [1990]. Although many regional trading arrangements have been initiated among developing countries since 1960, the share of intra-regional trade in world trade in most of these arrangements has not varied much between 1960 and 1990 ⟨Srinivasan *et. al.* [1993]⟩. Several ex-ante and ex-post studies have been carried out to study the economic effects of different regional trading arrangements and some of these studies are reviewed by Srinivasan *et. al.* [1993].

The idea of regional cooperation emerged in the South Asian region in 1980. Between 1981 and 1985, the consultations and meetings of the secretaries and ministers of seven South Asian countries have taken place on promoting regional cooperation in the region. Following these meetings, the SAARC was formally established in December 1985 at the first SAARC summit held in Dhaka. There have been 12 agreed areas of cooperation covered under SAARC. The idea of trade liberalization within the SAARC framework emerged in 1991 at the SAARC summit held in Colombo. All the heads of states of SAARC countries have approved the establishment of an Inter Governmental Group (IGG) to formulate an agreement under which specific measures for trade liberalization among SAARC member countries could be expanded. The IGG has drafted an agreement on SAARC Preferential Trading Arrangement (SAPTA) after a couple of meetings. The council of ministers signed the framework agreement on SAPTA in Dhaka on April 11, 1993. The agreement describes the SAPTA "as a first step towards higher levels of trade and economic cooperation in the region" ⟨SAARC [1993]⟩. The reduction of tariffs, para-tariffs, and non tariff barriers by all the SAARC member countries is suggested through the SAPTA. The objective of SAPTA is to move step by step towards a free trade area by 1997. All the SAARC countries have recently ratified the SAPTA and the agreement is expected to be implemented by the end of 1996.

The intra-regional trade among the South Asian countries can be considered low compared to many other existing regional trading arrangements. For example, while the share of intra-regional exports in total exports has stayed around three to four percent in the period between 1970 and 1992, the share of intra-regional imports in total imports and the share of total trade have stayed around three percent in the corresponding period (Table 1). However, considering that the share of South Asia's trade in total world trade is only about one percent, the magnitude of intra- regional trade in the South Asian region can be considered intense. Among the individual countries, Maldives and Nepal have higher levels of intra-regional trade, followed by Sri Lanka and Bangladesh. India and Pakistan tend to have relatively less intra regional trade (Table 2).

The product structure of intra-regional trade by broad commodity groups reveals that "food items" dominates the intra-regional trade among the SAARC member countries ⟨Aggarwal and Pandey [1992]⟩. Thus, food commodities play an important role in the international and intra-regional trade

Table 1
Trade Pattern of South Asian Region
(Values in millions of U.S. dollars)

	1970	1980	1985	1992
Total exports	3,366	12,421	14,355	32,970
% of intra-SAARC exports to total exports	3.6	4.4	4.4	3.3
Total imports	3,995	24,555	26,939	41,083
% of intra-SAARC imports to total imports	2.9	2.4	1.7	2.8
Total trade	7,361	36,976	41,294	74,053
Intra-SAARC trade	237	1,138	1,093	2,217
% of intra-SAARC trade to total trade	3.2	3.1	2.6	3.0

Source: IMF; *Direction of Trade Statistics Year Book,* various issues and author's Calculations

Table 2
Intra-regional Trade to Total Trade, South Asian Countries (%)

Countries	1980	1985	1992
Bangladesh	4.8	4.0	7.3
India	1.9	1.1	1.7
Maldives	24.3	11.1	9.8
Nepal	46.7	32.9	14.2
Pakistan	3.7	2.8	3.0
Sri Lanka	6.7	5.4	6.0

Source: IMF; *International Financial Statistics Year Book,* 1987 and 1993 and author's Calculations

of South Asian countries. With this reason and considering the importance of food commodities in the South Asian economies, the present study places special emphasis on the category, food and live animals (Standard International Trade Classification (SITC) code 0). Detailed trade data is obtained from COMTRADE database for the SITC category 0, Food and Live Animals.

The trade pattern of selected food commodities for the South Asian region reveals that intra-regional trade is small for most of the commodity groups. Among the food commodities, dairy products have the highest share of intra-regional exports (24.8 percent). All other commodity groups have exported less than 10 percent of their total exports to the other countries in the South Asia region. On the import side, fish products have the highest share of intra-regional trade among the categories of food items (47 percent). About 16 percent of coffee, tea and cocoa imports come from with in the region. The intra-regional share of imports in total imports of all other categories is under 10 percent, varies from zero percent for meat and preparations to 8.5 percent for fruits and vegetables.

Considering the aggregate food and live animals, the intra-regional exports to total exports is about four percent and that of intra-regional imports is about six percent. The South Asian countries trade the food commodities most with other developing countries, followed by major industrial countries. About 60 percent of the total exports of food commodities from

the SAARC countries go to other developing countries and about 51 percent of total imports of food commodities come from the other developing countries in the world. The same figures correspond to about 37 percent and 44 percent for the major industrial countries. The calculations made using the COMTRADE data base reveal that the share of intra-regional imports in total imports is higher in the case of Bangladesh, Nepal and Sri Lanka than that of other countries in the region for all commodities as well as for the group of food commodities. India ranks the bottom in the case of its intra-regional trade to total trade in both the cases of all commodities and food commodities.

III. Theory and Empirical Framework

Data on total trade of the SAARC countries are collected from IMF (International Monetary Fund), World Bank, UNCTAD (United Nations Conference on Trade and Development) and other sources. Detailed trade data of SAARC countries in agricultural commodities are collected from World Bank COMTRADE database. Using these data, the extent of total trade, agricultural trade, and trade pattern of different countries in the South Asian region are analyzed.

In order to measure the extent to which one country's share in another country's exports or imports is smaller or larger in relation to the former country's share in world trade, the trade intensity index can be used ⟨Aggarwal and Pandey [1992]⟩. The trade intensity index, T_{ij}, can be defined as

$$T_{ij} = (X_{ij} / X_i) / (M_j/(M_w - M_i) \quad (1)$$

where T_{ij} = export intensity index of country i with country j

X_{ij} = Exports of country i to country j and

X_i = Total exports of country i. M_j, M_w, and M_i represent total imports of country j, world and country i, respectively. The import intensity index can be calculated in the similar manner by interchanging the export and import terms.

Free trade areas and customs unions are permitted under GATT article XXIV with the idea that these would increase world welfare even though

they are the "second best" options as the formation of customs union is a move towards free trade. Nonetheless, controversy surrounds the trade expansion and welfare effects of free trade areas. The controversy mainly surrounds the concepts of "trade creation" and "trade diversion," introduced by Viner [1950]. Trade creation refers to the replacement of inefficient domestic production with imports from lower-cost member countries. Trade diversion refers to the replacement of imports from lower cost non-member countries with that of higher-cost production from member countries. Generally, it is argued that if regional trade arrangements are trade creating on a net basis (*i.e.*, adjusted for trade diversion effects), the arrangements are welfare-increasing.

The model used in the present study to compute the trade effects of a preferential trading arrangement is partial equilibrium in nature. Also, the model assumes that the imported goods and the domestically produced goods are imperfect substitutes; the goods imported from preference receiving countries and that are imported from non-preference receiving countries are imperfect substitutes; and the exports have an infinite elastic supply, implying that the whole effect of any tariff change has been passed on to prices. Since the estimates of Non Tariff Barriers (NTB) ad volorem equivalents are not available for the South Asian countries, it is assumed that the prevalence of non-tariff barriers would be removed to the extent that permits the tariff induced trade expansion to take place.

The static gains from a preferential trading arrangement, trade creation and trade diversion are computed following the methodology used in Verdoorn [1960] and Sawyer and Sprinkle [1986]. Trade Creation (TC) for the importing country i is calculated as

$$TC_i = Q_p \varepsilon_m (\Delta t/1+t) \tag{2}$$

where Q_p = Quantity imported from preference receiving countries, ε_m = price elasticity of import demand, Δt = reduction in tariff by preferential trading arrangement; and t = initial level of tariff in the importing country.

Trade Diversion (TD) for the importing country i is calculated as

$$TD_i = Q_p \left[\alpha_{np} \left(\varepsilon_s - \varepsilon_m\right)\right][\Delta_t/1+t] \tag{3}$$

where $\alpha_{np} = Q_{np}/(Q_p + Q_{np})$ (share of imports from non-preference receiving countries in total imports) and ε_s = elasticity of substitution between preference receiving and non-preference receiving countries.

The difference between trade creation and trade diversion effects yields the total net trade creation effect of a preferential trading arrangement. In order to empirically implement this trade model, trade flows between countries, parameters such as elasticity of import demand and elasticity of substitution, initial tariff levels, and the expected level of change in tariff due to a preferential trading arrangement are needed. Several studies have assumed the values for elasticity of import demand and elasticity of substitution between preference receiving and non-preference receiving countries and calculated the trade effects for different preferential trading arrangements. Plummer [1991] has made an attempt to estimate the elasticities using IDRA (Import Demand Regression Approach) and computes ex-ante trade creation and trade diversion effects of accession of Spain and Portugal into European Community. However, given the data limitations, this study follows the earlier attempts to compute ex-ante trade effects in food commodities for a SAPTA by making reasonable assumptions on the elasticity of import demand and elasticity of substitution for the South Asian countries.

Besides the static effects generated by regional integration, several dynamic effects arise from regionalism, which are difficult to capture empirically. Some of these dynamic effects include scale economies made possible by the expanded size of the market, increased domestic and foreign investment, efficiency in the production due to enhanced competition, technological change, productivity gains, and spill over effects of technological innovation in the region. Another major effect of a trading arrangement is the reduction in the average and marginal costs of production with increase in the level of production. All these changes in the economy would contribute towards the overall rate of growth of GNP of the participating nations.

Regional integration can also help in improving resource allocation consistent with the comparative advantage of member countries and thereby achieving economic growth of all the member countries. The discussions on the relationship between different resource endowments of the participat-

ing countries of a regional integration arrangement and the level of their trade are not conclusive in the literature. For example, while some argue that regional integration among developing countries may fall short of desirable level of complementarity in resource endowments among the countries, it is also suggested by some others that the regional integration in the long run helps the participating nations to achieve the level of international competitiveness. In the case of agriculture, even very slight dissimilarity in the resource endowments among different countries forming the regional trading arrangement will help in having comparative advantage in the cultivation of different crops in different countries.

IV. A South Asian Preferential Trading Arrangement (SAPTA): Trade Effects on Food Commodities

A. Trade Intensity Indices

The export and import intensity indices for food commodities for the South Asian countries are presented in Table 3. The relatively high frequency of more than unity value of export and import intensity index indicates the strong trade linkages between many of the South Asian countries for food commodities. The value of intensity index is significantly higher in the case of Nepal with Bangladesh and India. In few cases such as Bangladesh – India, India – Pakistan and Sri Lanka – Bangladesh in export trade, the value of index is less than unity, indicating less intensity of trade.

Table 3
Export and Import Intensity Indices for Food Commodities, 1990

From / To	Bangladesh		India		Nepal		Pakistan		Sri Lanka		SAARC	
	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export	Import
Bangladesh	0.00	0.00	2.81	19.55	159.22	116.93	0.83	0.81	0.21	0.45	2.37	6.54
India	0.06	0.01	0.00	0.00	307.19	29.44	16.08	2.04	2.61	0.72	3.22	1.16
Nepal	145.86	163.14	21.96	188.23	0.00	0.00	4.72	5.67	18.27	47.39	25.55	87.07
Pakistan	12.34	10.40	0.39	2.51	6.26	4.28	0.00	0.00	9.93	19.40	2.53	6.51
Sri Lanka	1.74	0.68	3.30	9.88	1.05	0.33	22.35	9.39	0.00	0.00	5.05	6.01

Source: Author's calculations based on bilateral trade data

B. Trade Effects

The trade expansion effects of a South Asian Preferential Trading Arrangement are computed using a partial equilibrium trade model. The results of analysis provide an indication about the magnitude of expected trade expansion in the South Asian countries' food sector for a preferential tariff reduction among the South Asian countries.

The effects of a preferential trading arrangement among South Asian countries are estimated for the group of food commodities, using 1990 trade flows and 1988-90 average tariff data. The elasticity of import demand is assumed to be –1.0, the mid-value of the range of elasticities of import demand, reported by Cline *et. al.* [1978]. The elasticity of substitution is assumed to be –1.5, as this value is empirically obtained for the food commodities group ⟨Cline *et. al.* [1978]⟩ and used by Laird and Yeats [1987] to study the potential for expanded South-South trade.

The results of the analysis of ex-ante trade effects of a SAPTA with 100% tariff cut for food commodities are presented in Table 4. Food commodities refer to all the commodities covered under Standard International Trade Classification (SITC) 0, consists of ten major sub categories of food commodities.The results indicate that the SAPTA results in a positive net trade creation for all the countries in the region. In other words, the trade creation effects exceed the trade diversion effects for all the countries in the

Table 4
Static Trade Effects of SAPTA on Food Commodities

Countries	Trade Creation (US $ thousand)	Trade Diversion (US $ thousand)	Net Trade Creation (US $ thousand)	Increase in Imports (%)
Bangladesh	6,291	3,019	3,271	23.88
India	13,532	6,428	7,104	23.92
Nepal	5,820	239	344	9.04
Pakistan	13,095	6,285	6,809	21.21
Sri Lanka	11,628	5,349	6,279	16.66
SAARC	45,128	21,320	23,808	20.35

Source: Author's calculations based on a partial equilibrium model

region. This suggests that SAPTA would be a welfare improving arrangement. For the South Asian region as a whole, the preferential trading arrangement is estimated to yield trade creation amounts to $45.13 million, trade diversion amounts to $21.32 million, corresponding to $23.81 million of net trade creation in food commodities. This trade expansion corresponds to about 20 percent increase from the initial level of intra-regional imports in food commodities. Thus, a preferential trading arrangement among the South Asian countries is estimated to generate a significant increase in trade flows between South Asian countries.

The increase in intra-regional imports of food commodities due to SAPTA is estimated to vary from about nine percent for Nepal to about 24 percent for Bangladesh and India. It should be mentioned that the results of present analysis provide only an indication about the direction and magnitude of trade expansion effects. Given that the model used is of partial equilibrium and static nature, and reasonable assumptions are made about the elasticities used in the model, the entire benefits arising out of SAPTA may not have been captured. Since food security is a great concern for all the countries in the South Asia region, the substantial consumer surplus resulting from tariff reduction in food commodities provides many implications to the policy makers in the region. The results thus indirectly imply that consumers in the South Asia region would benefit from a decline in the food prices, which may help to increase food consumption and reduce the incidence of poverty in the region.

V. Summary and Conclusions

As regionalism is reemerging and playing an important role in international trade, the countries in the South Asian region have endorsed a South Asian Preferential Trading Arrangement among the SAARC member countries. This study discusses the current level of regionalism in South Asia and the potential trade and welfare benefits arising out of a South Asian Preferential Trading Arrangement. Using the data obtained from different sources, the share of intra-regional trade in total trade for the region and for the individual countries are calculated. Using a partial equilibrium trade model, the potential trade and welfare impacts of a SAPTA on food com-

modities are analyzed. The results of analysis provide the magnitudes of trade creation and trade diversion effects for each of the South Asian countries. The South Asian Preferential Trading arrangement is estimated to generate a significant increase in trade flows between South Asian countries. The arrangement may be considered as a prelude to multilateral trade liberalization with conversion of existing non-tariff barriers into tariffs and further reduction of tariff levels. Although the current level of intra-regional trade in agricultural products is low in the South Asian region, there exits a considerable potential for increasing the level of intra-regional trade flows. For example, in a study on liberalizing Indian agriculture, Pursell and Gulati [1993] suggest that India has a greater potential in expanding agricultural trade with all the neighbors, especially Pakistan, Bangladesh, and Sri Lanka, by overcoming the political problems.

The positive net-trade creation effects of a South Asian Preferential Trading Arrangement indicate that the countries in the South Asian region should seriously consider expanded regional economic cooperation. At the same time, efforts have to be made to expand the trading with other Asian Pacific countries. Southeast and East Asian nations are particularly, potential markets for South Asian agricultural goods.

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