
Impact Of Pak-India Relationship On Rice Trade On Economy Of Pakistan By Using Computable General Equilibrium Model (CGE)

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Abstract

This research investigates the Impact of PAK-INDIA Rice trade on Economy of Pakistan. Data were collected from GTAP-7 database. Data were collected from 60 rice exporters by using simple random technique and data were analyzed by using GEM-software. Different simulation run on GTAP-7 database and various tariff rates applied. It was revealed that if India were removing the sensitive list item, in this scenario both countries would have positive impact on GDP, Export, Import. The results indicates that there is positive impact of Rice export to India. It was further revealed that if Pakistan is given MFN status to India, Pakistan's import decreased and Export increased and overall positive impact on Economy. The first scenario is when normal trading relation with India will be restored; it means that both countries will give the MFN (Most Favored Nations) status to each other. In the second scenario, the SAFTA will be operative and there will be free trade between India and Pakistan and both countries will remove all tariffs and custom duties from each others' imports. The Global trade analysis GTAP model is used to analyze the possible impact of SAFTA on Pakistan in a multi country, multi sector applied General equilibrium frame work. Results based on this research reveal that on SAFTA, grounds, here will be net export benefits in Pakistan's economy.

Key Words: PAK-INDIA, TRADE, CGE

Introduction

Trade liberalization was the key element of this new policy package and it entailed reliance on tariffs, replacement of quantitative restrictions including import licensing by a revised system of tariffs as well as the relaxation of other controls on trade. In order to encourage both domestic and foreign investment, the Government offered a series of incentives, while attempting to create an environment conducive to investment. In recent years, however, the focus of Pakistan's trade policy has seemingly shifted towards regionalism, which Pakistan considers a springboard for broader trade liberalization. The rationale for regional cooperation is based on a number of factors, not all of which are necessarily economic in nature. Until the late 1970s, Pakistan's economic development centered on an inward-oriented development strategy based on import substitution industrialization performed mainly by state owned firms. Both tariff and non-tariff barriers were widely used to protect domestic economic activities. Trade restrictive policies were accompanied by other regulatory policies such as control on foreign exchange, finance and foreign direct investment. These restrictive economic policies had severe adverse implications on overall economic growth, in particular growth of exports. Pakistan introduced extensive economic reforms in 1971-72 becoming the first country in the South Asian region to do so. The economy was freed from the inward-oriented strategy, and adopted an outward-oriented export-led development strategy, which was followed by many East Asian countries at that time. This research begins with a review of Pakistan's economic reforms and their coverage. The methodology, will offer a brief description of CGE Modeling including the GTAP. Then we will discuss experimental designs are discussed. Through the model we form unilateral and regional trade liberalization, as a founding member of the WTO, Pakistan as a member firmly committed to the multilateral trading system and has already establish a large number of reforms in keeping with the GATT/WTO principles. However, this study will review the outcome of multilateral trade Liberalization. The GTAP model simulation will be analyzed.

Literature Review

Regional trade agreements (RTAs) have emerged as an alternative to achieve trade liberalization as multilateral efforts have faced political and economic obstacles.^{2,3} The difficulties of reaching agreements on sensitive issues like agriculture and services have been evident in the Doha Round. The previous rounds were also marked by complex and slow negotiation processes.

For one, as the number of participants increases, it has been more difficult to address each country's demands for special considerations.

RTAs convey advantages as well as limitations. By reducing the number of participants in the negotiation they can help expand the discussion to include more dimensions of economic integration. Compared with unilateral liberalization, political support for RTAs also seems to be greater given the perception of reciprocity from other member countries. However, since the early work of Viner (1950), these benefits have been weighted against distortions that RTAs can create. By de facto discriminating against nonmembers, RTAs distort resource allocation, favoring regional producers to the potential detriment of local consumers. Recent research also emphasizes the global consequences of multiple and overlapping RTAs in terms of the transaction costs they impose (Feridhanusetyawan, 2005).

Although RTAs have varied components, these agreements include some or all of the following eight elements (Bhagwati and Panagariya, 1996 provide an overview): (i) a tariff liberalization program—TLP (transformation of nontariff barriers, e.g. quotas, to their tariff equivalent and the sequential reduction of tariffs; special considerations to least developed countries⁴ are not uncommon); (ii) sensitive lists (goods or services to be exempt from the tariff reduction program);⁵ (iii) rules of origin—ROO (prevention of the application of the preferential tariffs to non regional goods or services as defined by the agreement);⁶ (iv) institutional arrangements (establishment of a council or administrative committee responsible for the administration and implementation of the agreement); (v) trade facilitation policies (collection of instruments to reduce transaction costs of importing and The literature about trade agreements is rich in acronyms that denote either their geographical extension or their degree of trade barrier reductions. RTAs refer to agreements involving regional partners. Free Trade Agreements (FTAs) refers to agreements that includes the full elimination of tariffs (and trade barriers) while Preferential Trade Agreements (PTAs) s refer to agreements involving partial tariff elimination. For example, SAPTA is South Asia's PTA and SAFTA is South Asia's FTA. Exporting, including homogenization of customs practices and technical assistance specially to the least-developed members); (vi) dispute settlement mechanism (procedures to report and deal with violations to the agreement); (vii) safeguards measures (suspension of preferential treatment on grounds that imports are causing or threatening to cause serious injury to the domestic industrial base); and (viii) parallel reduction in foreign investment barriers and/or trade in services.

South Asia (Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka) 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, 2006). In 1995, its corresponding RTA (SAPTA) came into force. South Asian Free Trade Agreement (SAFTA) has been ratified and entered into force in mid-2006. In comparison to other African countries, over the past two decades attention of researchers, government, and donors has been focused in Kenya’s horticultural and floriculture sectors due to their capacity to grow rapidly and yet sustainably to meet international standards (Jaffee, 2004). The production highly oriented to export markets can be track back at the farm level. While over 90% of smallholder farmers in all but the arid regions of Kenya produce horticultural products, less than 8% cultivate other kind of crops (Tschirley, et al, 2004). SAFTA is expected to increase regional trade (trade creation) but may do so at the expense of trade flows from more efficient non regional suppliers (trade diversion). Baysan and others (2006) argue that it is unlikely that the most efficient suppliers of the member countries are within the region. Based on that and on the restrictiveness of SAFTA’s sensitive lists and rules of origin, it concludes the economic merits of SAFTA are “quite weak.” Using the static general equilibrium methodology, Bandara and Yu (2003) find that the full elimination of trade barriers between South Asian countries would increase the welfare level of India. To study the effects of RTAs on trade flows, typically the gravity equation approach is used. In its simplest version, it postulates a relationship between the “mass” (GDP) of two countries and their trade flows. In practical terms, the approach offers a “conditional general equilibrium” relation (Anderson and van Wincoop, 2004) in which bilateral trade is modeled as independent of trade flows with third party countries.

Gravity equations have also been used to measure unobserved trade barriers, to discriminate between theoretical trade models, and to analyze the effects of trade policies (either in an ex-post or ex-ante fashion).¹¹ The latter has been subject to critiques and refinements (e.g., Carrère, 2006) among the most important being that for the gravity equation analysis to be appropriate one needs to assume (or “condition on”) that the policy changes being

Anderson and van Wincoop (2004); and Feenstra, Markusen, and Rose (2001). a considered do not modify the basic relation between countries’ masses and their trade flows.¹² Given the relative small size of South Asian countries in the world markets such an assumption appears not to be problematic for

the scenarios considered here. In summary, the general equilibrium approach offers the possibility of answering a richer set of questions but demands data not readily accessible for some of the countries we are interested in.¹³ Although the evaluation of the benefits and limitations of each methodology is beyond the scope of this paper it can be argued that they are complementary rather than substitutes. This paper uses a gravity equation approach and builds on Srinivasan (1994). In particular, it allows the response to trade barriers to differ by source of the goods; treats independently imports and exports of each country pair; and includes all seven members of SAFTA in the analysis. As Bandara and Yu (2003) and Gilbert, Scollay, and Bora (2001) show, welfare and trade volume do not necessarily follow a monotonic relationship and interpreting gravity equation results as describing desirability or welfare can be misleading.¹⁵ Nevertheless, by providing three different criteria—trade flows, trade balance and customs revenue—the paper provides information on the relative merits of alternative arrangements.

Methodology

It is widely acknowledged that computable general Equilibrium (CGE) modeling has become the tool of choice for analysis of a wide range of trade policy issues such as tariffs and non-tariff barriers (NTBs) in both developed and developing countries in a variety of settings. In particular, CGE modeling is useful for analyzing the welfare effects of trade policy that needs to address second-best issues, where there are significant interactions between policy measures for one sector and distortions elsewhere in the economy. Such models have two distinctive features: they incorporate a number of distinct sectors, and the behavioral equations of the model deal with the response of industries and consumers to changes in relative prices (Adams et al., 1998). This development is explained by the capability of CGE models to provide an elaborate and realistic representation of the economy, including the linkages between all agents, sectors and other economies (Brockmeier, 1996) CGE analysis also provides a valuable tool for putting things in an economy-wide perspective (Hertel, 1999).

THE GTAP MODEL

In this study, the widely used Global Trade Analysis Project (GTAP), a multi-country, multisector CGE model (Hertel, 1997) has been employed to empirically assess the impact of trade liberalization reforms on Pak-India trade. Multi-country, economy-wide CGE models are designed to work out the relative prices of various inputs and outputs mixes of the economies of

interest as well as indicating the global changes in world trade patterns. Thus, the strength of a global CGE model lies in its ability to help us understand the linkages between sectors, countries and factors on a global scale. The general equilibrium structure recognizes that all parts of the world economy hinge together in a network of direct and indirect linkages. This means that any change in any part of the system will, in principle, have repercussions throughout the entire world. As McDougall (1995, p. 88) clearly points out “its characteristics are that it is economy-wide, it is multi-sectoral, and it gives a central role to the price mechanism. These characteristics differentiate it from partial equilibrium modeling (not economy-wide), macroeconomic modeling (not multi-sectoral), and input-output modeling (agents don’t respond to price signals).” The GTAP model was designed for comparative-static analysis of trade policy issues in an economy-wide framework. Since the changes in trade policies and production levels in any of the regions and sectors will have impacts on other regions and sectors, even though my main focus of this study is on results for Pakistan, it is possible to incorporate the policy changes of other countries within a global CGE modeling framework.

Data Set

Data will be collected from secondary sources GTAP-7 data base

LIMITATIONS OF THE CGE MODEL

Despite the importance of CGE modeling in policy analysis, a series of questions have been raised about the empirical validity of these models. The core of the critique is focused on unsound parameter selection criteria, because the choice of elasticity values critically affects the results of policy simulations generated by these models. In the calibration method, some parameters are determined on the basis of a survey of empirical literature, some chosen arbitrarily, and the remainders are set at values, which force the model to replicate the data of a chosen benchmark year (Shoven and Whalley, 1992). Most often the estimated elasticities for commodity and/or industry classifications are based on econometric studies, which are not totally consistent with the countries represented in the model or they may even be “guesstimates” when no published figures are available.

Instrument

- GTAP-Model
- Variables PAK-INDIA TRADE (Independent variable)
- SAFTA (Dependent Variable)
- Dependent Variables
- Textiles (Dependent Variable)

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- Pharmaceuticals (Dependent Variable)
 - Automotive parts and engineering(Dependent Variable)
 - Agriculture(Dependent Variable)
 - Financial an insurance services(Dependent Variable)
 - GTAP-Model ((Hertel, 1997) GTAP-7 Data Base
 - Data will be analyzed by using GEMS Software

Sectors:	Codes
RICE	PDR

Pak-India Trade Model

Aggregated Regions	GTAP Region
1. Pakistan (PK) Pakistan	
2. India (IND) India	
3. Rest of South Asia	Sri Lanka
	Bangladesh
	Bhutan
	Maldives
	Nepal
4. Rest of the World (ROW)	all other Countries

Pak-India Trade Project

Comparative Real GDP-Growth Rate (%)

Table I

Region/Country	2009	2010	2011	2012	2013	2014 (P)
World GDP	-0.6	5.2	4.0	3.2	3.3	4.0
Euro Area	-4.4	2.0	1.4	-0.6	-0.3	1.1
United States	-3.1	2.4	1.8	2.2	1.9	3.0
Japan	-5.5	4.7	-0.6	2.0	1.6	1.4
Germany	-5.1	4.0	3.1	0.9	0.6	1.5
Canada	-2.8	3.2	2.6	1.8	1.5	2.4
Developing Countries	6.9	9.9	8.1	6.6	7.1	7.3
China	9.2	10.4	9.3	7.8	8.0	8.2
Hong Kong SAR	-2.5	6.8	4.9	1.4	3.0	4.4
Korea	0.3	6.3	3.6	2.0	2.8	3.9
Singapore	-0.8	14.8	5.2	1.3	2.0	5.1
Vietnam	5.3	6.8	5.9	5.0	5.2	5.2
ASEAN						
Indonesia	4.6	6.2	6.5	6.2	6.3	6.4
Malaysia	-1.5	7.2	5.1	5.6	5.1	5.2
Thailand	-2.3	7.8	0.1	6.4	5.9	4.2
Philippines	1.1	7.6	3.9	6.6	6.0	5.5
South Asia						
India	5.0	11.2	7.7	4.0	5.7	6.2
Bangladesh	5.9	6.4	6.5	6.1	6.0	6.4
Sri Lanka	3.5	8.0	8.2	6.4	6.3	6.7
Pakistan	0.4	2.6	3.7	4.4	3.6	4.4

Source: Economic Survey of Pakistan-2012-13

Growth rate Percentage

Table 2

Sectors/Sub-Sectors	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-2013(P)
Agriculture	3.4	1.8	3.5	0.2	2.0	3.5	3.3
Crops	4.4	-1.0	5.2	-4.2	1.0	2.9	3.2
Important Crops	6.5	-4.1	8.4	-3.7	1.5	7.4	2.3
Other Crops	2.1	6.0	0.5	-7.2	2.3	-7.7	6.7
Cotton Ginning	-0.8	-7.0	1.3	7.3	-8.5	13.8	-2.9
-Livestock	2.8	3.6	2.2	3.8	3.4	3.9	3.7
-Forestry	2.7	8.9	2.6	-0.1	4.8	1.7	0.1
-Fishing	0.4	8.5	2.6	1.4	-15.2	3.8	0.7
Industrial Sector	7.7	8.5	-5.2	3.4	4.7	2.7	3.5
Mining & Quarrying	7.3	3.2	-2.5	2.8	-4.4	4.6	7.6
Manufacturing	9.0	6.1	-4.2	1.4	2.5	2.1	3.5
-Large Scale	9.6	6.1	-6	0.4	1.7	1.2	2.8
-Small Scale	8.3	8.3	8.6	8.5	8.5	8.4	8.2
-Slaughtering	3.2	3.3	3.8	3.2	3.7	3.6	3.5
Electricity Generation & Distribution & Gas Distt	-12.8	37.2	-12.1	16.7	66.4	2.7	-3.2
Construction	12.9	15.4	-9.9	8.3	-8.6	3.2	5.2
Commodity Producing Sector (A+B)	5.5	5.1	-0.9	1.8	3.3	3.1	3.4
Services Sector	5.6	4.9	1.3	3.2	3.9	5.3	3.7
Wholesale & Retail Trade	5.8	5.7	-3.0	1.8	2.1	1.7	2.5
Transport, Storage and Communication	6.9	5.5	5.0	3.0	2.4	8.9	3.4
Finance & Insurance	9.1	6.3	-9.6	-3.3	-4.2	1.0	6.6
Housing Services (Ownership of Dwellings)	4.0	4.0	4.0	4.0	4.0	4.0	4.0
General Government Services	2.7	0.2	5.6	8.0	14.1	11.1	5.6
Other Private Services	4.6	5.4	6.5	5.8	6.6	6.3	4.0
GDP (fc)	5.5	5.0	0.4	2.6	3.7	4.4	3.6

Source: Economic Survey of Pakistan, 2012

Demographic indicators of SAFTA Countries

Table 3

S. No.	Item	Unit	Year/Period	Bangladesh	India	Pakistan	Nepal	Sri Lanka	Maldives
1	2	3	4	14	15	16	17	18	19
1.	Area	000'SqKm	2010	144	3287	796	147	66	0.3
2.	Population	Millions	2010	148.70	1224.60	173.60	30.0	20.9	0.3
		Millions	2020 ^b	167.10	1385.20	205.20	35.1	22.3	0.4
3.	Population Urbanized	%	2004 ^b	25.1	28.7	34.9	15.8	15.1	29.6
		%	2015 ^b	29.9	32.0	39.6	20.9	15.7	34.8
4.	Population under age 15	%	2010	31	31	35	36	25	34
5.	Population age 65 and above	%	2010	5	5	4	4	8	3.8
6.	Population Annual Growth Rate	%	2000-10	1.4	1.5	1.8	2.1	1.1	1.8
7.	Crude Birth Rate	Per 1000 Population	2010	20	22	27	24	18	--
8.	Total Fertility Rate	Births per woman	2010	2.2	2.6	3.4	2.7	2.3	
9.	Crude Death Rate	Per 1000 Live Births	2010	6	8	7	6	7	--
10.	Infant Mortality Rate	Per 1000 Live Births	2010	38	48	70	41	14	33
11.	Mortality Rate Under 5 years age	Per 1000 Live Births	2010	48	63	87	50	17	42
12.	No. Of Deaths under 5 years	000'	1992	103	--	82		--	--
13.	Life Expectancy at Birth								
	Male	Years	2010	68	64	64	68	72	67
	Female	Years	2010	69	67	66	69	78	67
	Persons	Years	2010	69	65	65	68	75	77

Source: GTAP-7 Database

GTAP Substitution Elasticity's

Table 4

GTAP Commodities	Value- added (σ_A)	Domestic/ Imports (σ_D)	Sourcing of Imports (σ_M)
Paddy rice	0.24	4.40	
Wheat	0.24	2.20	4.40
Cereal grains nec	0.24	2.20	4.40
Vegetables, fruit, nuts	0.24	2.20	4.40
Oil seeds	0.24	2.20	4.40
Sugar canes, sugar beet	0.24	2.20	4.40
Plant-based fibers	0.24	2.20	4.40
Crops nec	0.24	2.20	4.40
Cattle, sheep and goats, horses	0.24	2.80	5.60
Animal products nec	0.24	2.80	5.60
Raw milk	0.24	2.80	5.60
Wool, silk-worm cocoons	0.24	2.20	4.40
Forestry	0.20	2.80	5.60
Fishing	0.20	2.80	5.60
Coal	0.20	2.80	5.60
Oil	0.20	2.80	5.60
Gas	0.20	2.80	5.60
Minerals nec	0.20	2.80	5.60
Cattle, sheep and goat, horse meat	1.12	2.20	4.40
Meat Products nec	1.12	2.20	4.40
Vegetable oils and fats	1.12	2.20	4.40
Dairy products	1.12	2.20	4.40
Processed rice	1.12	2.20	4.40
Sugar	1.12	2.20	4.40
Food products nec	1.12	2.20	4.40
Beverages and tobacco products	1.12	3.10	6.20
Textiles	1.26	2.20	4.40
Wearing apparel	1.26	4.40	8.80
Leather products	1.26	4.40	8.80
Wood products	1.26	2.80	5.60
Paper products, publishing	1.26	1.80	3.60
Petroleum, coal products	1.26	1.90	3.80
Chemicals, rubber, plastic pro	1.26	1.90	3.80
Mineral products nec	1.26	2.80	5.60
Ferrous Metals	1.26	2.80	5.60
Metals nec	1.26	2.80	5.60
Metal products	1.26	2.80	5.60
Motor vehicles and parts	1.26	5.20	10.40
Transport equipment nec	1.26	5.20	10.40
Electronic equipment	1.26	2.80	5.60
Machinery and equipment nec	1.26	2.80	5.60
Manufacture nec	1.26	2.80	5.60
Electricity	1.26	2.80	5.60
Gas manufacture, distribution	1.26	2.80	5.60
Water	1.26	2.80	5.60
Construction	1.40	1.90	3.80
Trade, transport	1.68	1.90	3.80
Financial, business, recreational services (private)	1.26	1.90	3.80
Public admin and defense, education, health	1.26	1.90	3.80

Source: The GTAP Database, Version 7

Commodity Aggregation: 10 Sectors of the Model

Table 5

Aggregated Commodity	GTAP Commodity
(1) Agriculture, Forestry and Fishing (AGRI)	Paddy rice (pdr) Wheat (wht)
	Cereal grains nec (gro) Vegetables, fruit, nuts (v_f)
	Oil seeds (osd)
	Sugar cane, suger beet (c_b) Plant based fibers (pfb)
	Crops (nec)
	Bovine cattle, sheep and goats, horses (ctl) Animal products nec (oap)
	Raw milk (rmk)
	Wool silk-worm cocoons (wol) Forestry (for)
	Fishing
(2) Mining and Quarrying (MINQ)	Coal (col) Oil (oil)
	Gas (gas)
	Minerals nec (omn)
(3) Processed Food (PROF)	Bovine cattle, sheep and goat, horse meat prods (cmt) Meat products nec (omt)
	Vegetables oils and fats (vol)
	Dairy products (mil)
	Processed rice (pc)
	Sugar (sgr)
	Food products nec (ofd)
	Beverages and tobacco products (b_t)
(4) Textiles (TEXT)	Textiles (tex)
(5) Wearing apparel (WEAP)	Wearing apparel (wap) leather products (lea)
(6) Petroleum, Coal Products (PECP)	Petroleum, coal products (p_c)
(7) Machinery and Equipment (MAEQ)	Electronic equipment (ele)
	Machinery and equipment nec (ome)
(8) Transport Equipment (TREQ)	Motor vehicles and parts (mvh) Transport equipment nec (otn)
(9) Other Heavy Manufactures (OTHM)	Wood products (lum)
	Paper products, publishing (ppp)
	Chemical, rubber, plastic products (crp)
	Mineral products nec (nmm)
	Ferrous metals (i_s) Metals nec (nfm)
	Metal products
	Manufactures nec (omf)
(10) Services (SERC)	Electricity (ely)
	Gas, manufacture, distribution (gdt)
	Water (wtr) Construction (cns)
	Trade, transport (t_t)
	Financial, business, recreational services (osp)
	Public admin and defence, education, health (osg)
	Dwelling (dwe)

Source: GTAP-Database-7

Experimental Designs for Pakistan's Trade on SAFTA

Table 6

Experiments	Level of Tariff Reduction or Elimination
Unilateral Liberalization	
<i>E-1</i> Uniform External Tariffs	15% on Global Basis.
Regional Liberalization	
<i>E-2</i> South Asian Free Trade Agreement	5% between Pakistan and SAFTA Countries.
Unilateral cum Regional Liberalization	
<i>E-3</i> SAFTA plus 15% uniform external tariffs	100% between Pakistan and SAARC countries plus 15% on Global basis
Sensitivity Analysis	
Unilateral Liberalization	
<i>E-4</i> Uniform External Tariff	15% on Global basis -Central scenario
<i>E-4.1</i> 50% increase of ESUBM	15% on Global basis
<i>E-4.2</i> 100% increase of ESUBM	15% on Global basis
Regional Liberalization	
<i>E-5</i> SAFTA	100% between Pakistan and SAFTA countries -Central scenario
<i>E-5.1</i> 50% increase of ESUBM	100% between Pakistan and SAFTA countries
<i>E-5.2</i> 100% increase of ESUBM	100% between Pakistan and SAFTA countries
E-6 Unilateral cum Regional Liberalization	
	100% between Pakistan and SAARC countries plus 15% on Global basis -Central scenario
<i>E-6.1</i> 50% increase of ESUBM	100% between Pakistan and SAARC countries plus 15% on Global basis
<i>E-6.2</i> 100% increase of ESUBM	100% between Pakistan and SAARC countries plus 15% on Global basis

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Experiment-1-15 Percent Uniform Import Tariffs Estimated Welfare and Trade Effects

Table 9
(Percentage changes,
In millions)

Countries	EV US\$	% of GDP	TOT	V-Export	V-Import	Exp-Price	Import-Price	DTBAL-Price Price
IND	3213.97	3.40	0.41	0.4	1.23	2.1	3.68	109.74 m
PAK	4442.63	4.35	5.98	2.19	0.61	-8.97	5.44	285.66m
XSA	-1592.56	-1.74	-0.57	-3.92	31.54	24.83	-2.12	-1322.73m
XWA	-375.79	-0.02	0.00	-0.04	0.00	-0.06	-0.05	149.69m

Description

IND=INDIA

PAK=PAKISTAN

XSA = REST OF SOUTH ASIA

XWA= REST OF WORLS

All experiments were conducted with the standard general equilibrium closure of the GTAP model. According to the results Base line tariff for India is 18% SAFTA tariff is 5% and given MFN Tariff is 15% and rest of world is 15%..The first experiment considered the Pakistan's reduction of import tariffs to 15 percent under the unilateral trade liberalization. The impact of this scenario on regional welfare and the resulting percentage changes in sectorial output and trade are reported in Table 9 and 10 respectively. Accordingly, if Pakistan (PAK) reduces its import tariffs to 15 percent unilaterally on a global basis to maintain a uniform external tariff rate, Pakistan's EV US& 4442.63 and GDP 4.35, and India's EV US\$ 321 million (3.40 percent of the GDP). Under this scenario, Pakistan's volume of imports rises by 1.23 percent while its volume of exports falls slightly by 0.4 percent reflecting the fact that the pressure to increase imports is stronger than the increase in demand for Pakistan's exports by unilateral liberalization. However, as a result of the composite export price increase by 2.1 percent, Pakistan's experiences a small improvement in the terms-of-trade of 1.5 percent and the real GDP by 0.9 percent. The welfare gains or losses for other regions are quite varied under this simulation. However, since Pakistanis impact on unilateral reduction of import tariffs to 15 percent will not affect other region's real GDP or terms-of-trade significantly.

Experiment-1: 15 Percent Uniform Import Tariffs
Estimated Percentage Changes in Regional Output and Trade

Table 10

Sector	IND	PAK	XSA	XWA
(a) Industry Output (In Millions)				
PDR	-.02	0.77	0.07	-0.03
TEX	1.45.03	2.60	0.01	0.11
(b) Export (In Millions)				
PDR	1.44	1.00	0.07	-0.03
TEX	-0.16	6.79	0.01	0.11

Tariff Rates
5% SAFTA
15% XWA
5% XSA
15 MFN

Experiment-2 South Asian Free Trade Agreement - SAFTA- Estimated Welfare and Trade Effect

Table 11

Countries	EV US\$	% of GDP	TOT	Vol-Export	Volume-Import	Export Price	Import-Price	DTBAL US\$
IND	5434.97	4.34	0.80	5.40	4.00	9.38	8.68	-1100.90 m
PAK	5643.63	6.35	0.99	7.11	7.77	5.97	7.44	-786.77m
RAS	-1592.56	-1.74	-0.57	-3.92	31.54	24.83	-2.12	-1322.73m
XSA	-375.79	-0.02	0.00	-0.04	0.00	-0.06	-0.05	149.69m

Tariff Rates
SAFTA=5%
MFN=10%
XWA=10%
SAFTA=10

The trade reform scenario (*Experiment-2*) was conducted under the regional trade liberalization policy option to examine the impact of South Asian Free Trade Agreement- SAFTA in different contexts from the perspective of Pakistan. As a member of the SAFTA, Pakistan. committed to continue major trade liberalization measures, to establish and promote free trad arrangements for strengthening inter-regional economic co-operation and the development of national economies. In this experiment, it was assumed that Pakistan and each of the SAARC member countries in the model (India and the Rest of South Asia comprising Bangladesh, Bhutan, Maldives, Nepal and Sri lanka) remove their tariffs against each other, while maintaining heir tariffs against the rest of the South Asia.

Experiment-2: 10 Percent Uniform Import Tariffs
Estimated Percentage Changes in Regional Output and Trade

Table 12

Sector	IND	PAK	XSA	XWA
Industry Output				
PDR	8.55	1.79	0.08	-0.08
Exports				
PDR	0.45	2.00	0.05	-0.07

Tariff Rates

SAFTA=5%

MFN=10%

XWA=10%

SAFTA=10

The trade reform scenario (*Experiment-2*) was conducted under the regional trade liberalization policy option to examine the impact of South Asian Free Trade Agreement- SAFTA in different contexts from the perspective of Pakistan. As a member of the SAFTA, Pakistan committed to continue major trade liberalization measures, to establish and promote free trade arrangements for strengthening inter-regional economic co-operation and the development of national economies. In this experiment, it was assumed that Pakistan and each of the SAARC member countries in the model (India and the Rest of South Asia comprising Bangladesh, Bhutan, Maldives, Nepal and Sri Lanka) remove their tariffs against each other, while maintaining their tariffs against the rest of the South Asia. According to results in SAFTA 5% tariff the Pakistan industry output .079 compare to India -0.4 that Pakistan's will benefit on SAFTA trade with India

The Second experiment considered that Pakistan's reduction of import tariffs to 10 percent under the unilateral trade liberalization. The impact of this scenario on regional welfare and the resulting percentage changes in sectoral output and trade are reported in Table 12, 13. and 14 respectively. Accordingly, if Pakistan reduces its import tariffs to 10 percent unilaterally on a global basis to maintain a uniform external tariff rate, Pakistan's experiences a welfare gain around US\$201 million (1.53 percent of the GDP). Under this scenario, Pakistan's volume of imports rises by 3.3 percent while its volume of exports falls slightly by 0.3 percent reflecting the fact that the pressure to increase imports is stronger than the increase in demand for Pakistan's exports by unilateral liberalization. However, as a result of the composite export price increase by 1.1 percent, Pakistan's experiences a small improvement in the terms-of-trade of 1.5 percent and the real GDP by 0.8 percent. The welfare gains or losses for other regions are quite varied under this simulation. However, the impact of Pakistan's unilateral reduction

of import tariffs to 10 percent will not affect other region's real GDP or terms-of-trade significantly.

Accordingly, the results suggest that a reduction of import tariffs to 10 percent will increase Pakistan's welfare and terms-of-trade as well. Although one might expect that the reduction of import tariffs would increase the domestic output and therefore increase export sales, this policy reform would adversely affect Pakistan's domestic output in most of the sectors because of foreign competition. A similar impact can be seen in export sales too.

Sensitivity Analysis (Experiments 4, 5 & 6) Estimated Welfare and Trade Effects

	15 % Uniform Import Tariff			SAFTA			SAFTA cum 5% Uniform Tariff		
	Central scenario	50% increase in ESUBM	100% increase in ESUBM	Central scenario	50% increase in ESUBM	100% increase in ESUBM	Central scenario	50% increase in ESUBM	100% increase in ESUBM
	E-4	E4-1	E4-2	E-5	E5-1	E5-2	E-6	E6-1	E6-2
EV (US\$ Mil)	201.84	226.30	237.60	221.55	33.38	390.01	311.11	600.00	722.22
EV % of GDP	5.33	5.41	4.77	5.70	6.33	4.10	5.16	5.11	5.22
QGDP	1.60	1.33	1.55	1.44	1.55	1.12	4.54	3.20	4.70
TOT	1.50	1.55	1.60	4.70	6.22	8.66	6.11	8.00	8.00
DT BAI	-130.00	-180.00	-155.11	-120.00	-22.22	-233.00	-422.97	-220.00	-256.22
Vol. of Exports	-0.611	0.77	0.44	0.77	1.44	2.66	-0.95	0.78	0.88
Vol. of Imports	4.00	5.20	6.44	7.00	7.33	16.44	9.55	13.09	14.00
Export Price	1.07	0.90	0.93	4.90	8.11	10.11	6.11	8.11	10.81
Import Price	2.6	0.09	0.55	0.30	0.66	0.78	0.85	0.55	0.76

Non-Economic Benefits

Besides the welfare and terms of trade gains suggested by the simulations, regional trade liberalization under SAFTA may have many non-economic benefits to Pakistan particularly social and political benefits; those are difficult to account for in a quantitative way. For example, SAFTA can help its members to speak with one voice in global negotiations and develop a common understanding on several global trade-related issues.

It could also reduce the political disputes among members and make the region a more attractive location for foreign direct investments. Pakistan

is crucial for obtaining significant benefits from FDI, liberalization of trade and FDI policies needs to be complemented by appropriate policy measures with respect to education, R&D, and human capital accumulation if trade negotiation with India will restore.

Sensitivity Analysis (Experiments 4, 5 & 6) Continued
Estimated percentage Change in Pakistan's Output & Trade

Table 17

(b) Aggregate Exports (millions)

Sectors	E-4	E-4-1	E-4-2	E-5	E-5-1	E-5-2	E-6	E-6-1	E-6-2	Total
AGRI	2.75	3.28	-15.59	35.09	55.21	70.08	26.12	49.19	49.19	63.14 m
PHAR	-6.46	-10.10	-11.61	-15.92	-19.12	-17.44	-19.13	-30.91	-30.91	-33.23m
AUTO	-16.22	-22.71	-28.88	9.51	25.32	62.20	-6.52	2.35	2.35	-29.81 m
TEXT	3.82	2.85	4.80	3.09	27.28	29.13	8.8	16.41	16.41	18.50m
OFI ISR	21.51	32.22	43.32	-12.45	-23.75	-40.30	4.31	-3.46	-3.46	-15.88m
OTPL	24.63	43.42	66.39	-0.14	-1.42	-2.11	23.41	40.20	40.20	-60.65m
	(Aggregate Imports millions)									
AGRI	-1.16	-1.54	-1.83	-1.44	-2.14	-1.10	-1.32	-1.64	-13.64	-3.51m
PHAR	-1.61	-2.57	-3.34	2.15	5.42	9.91	-0.62	2.87	2.87	6.31m
AUTO	25.87	26.21	27.25	17.88	25.73	33.92	41.31	47.54	47.54	53.21m
TEXT	-11.89	-22.23	-11.20	-2.18	-6.33	-14.21	12.61	9.24	9.24	3.43m
OFI ISR	20.11	29.77	39.45	2.27	12.18	-28.54	6.32	0.12	0.12	44.20m
OTPL	5.21	6.32	7.14	0.91	0.89	0.86	6.67	11	11	65.18m

Table 17 presents the percentage changes in sectoral output, and trade by region under the SAFTA liberalization. The percentage changes in industry output in Pakistan's, as shown in panel

(a) of Table 17, the performance of the Textile and agriculture sector is remarkable, reporting about 7.9 and 8.5 percent increase, due mainly to the advantages by the cheaper labor and quality of yarn in case of textile garments. The industry output of Auto (3 percent), Pharma (-4 percent), decreased and Insurance (2 percent) decreased as well as Logistics (1) decreased. If Pak-India trade will restore we will win the race in Textile, Agriculture, and auto parts.

The removal of import tariffs under the SAFTA will adversely affect India's domestic output of Agriculture (8 percent), and Textile 11 percent.

As can be seen from panel (b) of Table 19, impact on Import of Pakistan there is a substantial increase in import in Pharmaceutical , and transport and logistics import basket. The overall import bill decreased by 11 percent.

Conclusions

The simulation results presented and analyzed here demonstrate the importance of experimental designs, and the usefulness of the global CGE modeling framework for examining the impacts of the different types of trade policy reforms for Pakistan. The results suggest that Pakistan would experience the highest welfare gain if under the combined policy reform of the SAFTA cum 15 percent uniform external tariffs while the SAFTA on its own gives the second highest welfare gains. SAFTA allows the participating countries to achieve larger economies of scale in production, attain specialization, increase competitiveness and diversify their export basket, thus assisting domestic economic reform. Therefore, harmonizing economic policies among neighboring countries must receive higher priority in the policy making process. Although, simulation results are highly sensitive to the underlying data and assumptions regarding the reference scenarios, the results clearly provide an assessment of the implications of SAFTA. According to the simulation results suggests that there have a positive impact on PAK-INDIA trade on GDP, EXPORT, and IMPORT under various scenarios, of tariff rates should applied like, MFN. 15 %, and 10%. Pakistan's has welfare gain of tariff rate 15 % and 10 % respectively but on 8% tariff results shows that there will be negative impact on the selected sectors.

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