

# Analysis of Regional Trade Block and Agricultural Productivity: Impact of SAFTA (South Asian Free Trade Agreement) on Economic Growth of Pakistan by Using CGE Model

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## Abstract

The current research highlights the trade among under the regime of South Asian Free Trade Agreements specially focus on trade with India. The Regional Block trade has given importance to the host as well receiving countries. Data were collected from various secondary sources and analysis by using Computable General Equilibrium model by using GEM pack. The regional trade among the Block countries are given absolutely and comparative advantage among various countries in the Blocks. The recent trade development shows positive results among the member countries specially in the context of free trade among South Asian Countries. ASEAN, NAFTA, MESUER trade gaining importance in the world and regional block trade has effect on the economies of the country. It was revealed that block trade has positive impact not only the countries economy but also welfare of the importing and host countries among the regional block.

**Keywords:** SAFTA, Economy, Agriculture, Trade liberalization, FTA

## INTRODUCTION

The trade among the regional blocks has been gaining the most importance in the world. ASEAN trade is the example of the trade among the member countries like Malaysia, Vietnam, Bangkok, Philippines and Singapore, all these ASEAN countries has become gaining importance in a way because these countries are pretty rich in the economic point of view Malaysia is the only country where there is no impact of financial crisis. Global financial crisis where most of the countries are suffering today. Regional trade getting importance because labor, land and other capital of all countries are varying from one country to country so when they are going to trade each other in regional blocks all the member countries are getting benefit of the trade. It was revealed that

Regional Block trade in SAFTA countries explores the untapped markets in various South Asian Countries. It was further revealed that SAFTA trade has positive impact of Pakistan's economy. The various tools were applied for the policy analysis but due to fact that South Asian Trade Agreement has positive welfare impact on the economy of Pakistan (Bhagwanti, J. et al. 2002). South Asian Free Trade initiated few decades back when most of the developed world were not giving importance to the South Asian countries. Pakistan was exporting fish to U.K and various European countries but due to struck rule and regulation made by EU to stop the trade with Pakistan and Kenya they imported fish from various EU countries even customers wants Pakistani fish because of the different taste and quality. The various trick which were used by the various block trade countries put pressure to underdeveloped world to trade with the South Asian Countries because with out that there is no option left for the Pakistan, India, Srilanka, Maldev, and Nepal. Agriculture is the back bone of our economy with GDP share of 21.9 percent still the getting highest share in the economy of Pakistan (Economy of Pakistan 2009-10). SAFTA have undergone substantial trade liberalization. Initially, SAFTA began with a policy matrix that stressed import substitution across a wide range of industries and products. Later, SAFTA started out with outward looking policies that stressed exports and the acquisition of foreign technology. A shift toward export promotion policies with reductions in tariff rates, and complemented by the inflow of foreign direct investment and supportive macroeconomic policies produced an export boom that lasted over twenty years. The ratio of exports to GDP increased by leaps and bounds. Although export of goods and services as a percentage of GDP for SAFTA increased for the last decades, the value of imports as a percentage of GDP also followed an upward trend. There has also been a dramatic turnaround in the external balance for SAFTA. These countries were running huge surpluses in 2000 and 2001, compared with large deficits just a few years earlier. The primary reason is the collapse imports. Exports have remained relatively strong. Therefore, it is crucial to analyze the import and export behavior and the effect of trade liberalization on import and export demand. Furthermore, it is important to know whether the trade liberalization has affected more on export or import. Export growth can lift a balance-of-payments constraint on demand and therefore permit faster growth supplies are available to be utilized. Secondly, export growth may create a virtue circle of growth by virtue of the link between output growth and productivity growth. As a result, the share of exports in GDP has also risen as the region became more industrialized. A greater reliance on exports has helped the region to sustain rapid growth rate but at the same time it has made the region more dependent upon import demand from the rest of the world particularly the industrial countries. According to standard international trade theory, a country which closer to a free trade regime will have the higher income growth. However, the international trade volume has grown faster than income during the past thirty years for SAFTA. Therefore, whether international trade will contribute to higher economic growth is puzzling.

## METHODOLOGY

**Model:** The Micro simulation method proposed in this paper relationship of both a CGE model and Household model. What distinguish from this model from the work of (Janvry et al .1992), (Ajitha et at 2004-05) and (Bourguignon et al 2000). Is its bi directional relationship. The model line Globalization and its impact on economy of Pakistan and poverty on both household and rural spending.

### Description of the Model

**Model.1:** Impact of Block trade on host country

**Model 2.** Impact on Block trade on GDP growth and trade. .

GEM-Software is used for the various simulation exercises and those were discussed in the policy analysis. Computable General Equilibrium Model is used for the policy analysis and widely used for the various policy matters. In current research data were used from various secondary sources, i.e. Government bulletin. Trade authorities, Ministry of Trade and development of Pakistan. Various issues of Computable equilibrium GTAP Purdue Journals. The empirical analysis of this study elaborate in a easy way so it can be resulted more beneficial in the Block trade policy issue.

## LIMITATIONS OF THE CGE MODEL

Every model has advantages as well as disadvantages Computable General Equilibrium has lot more advantage for the researchers of Economics and Policy makers are more flexible in addressing the issues of reliability and availability of Data sources. The only disadvantages of Computable General Equilibrium Model is that validity of data like most of the time when you run the software it automatically given results and also interpret the data according the variables set.

## GROWTH THEORIES

Growth theories provide the theoretical framework for analysis of economic growth and foreign direct investment which viewed as a technology factor. In theoretical, both Solow-type standard neoclassical growth models and new endogenous growth models show the positive relationship of foreign direct investment and economic growth. Empirically, the effects of FDI on economic growth remain ambiguous. While some studies such as Borensztein, De Gregorio and Lee (1998), Balasubramanyam et al. (1996), De Mello (1996), Blomstrom et al. (1996), Larrain, Lopez-Calva and Rodriguez-Clare (2000), Zhang (2001), Bende-Nabende et al (2003), Castejon and Woerz(2005) and Choudhry and Mavrotas (2006) observe a positive impact of FDI on economic growth, others papers of Carkovic and Levine (2002), Athukorala (2003), and Durham (2004) detect a negative relationship between the two variables. The impact of FDI on economic growth is far from conclusive. The role of FDI seems to be country based, and can be positive, negative or insignificant depending on the economic institutional and technological conditions in the recipient countries.

### **THE GTAP MODEL**

The Computable General Equilibrium model of multicountry model first developed by (Hertel, 1997) and then initiated by Brockmierer, M. (1996), but this was only Graphical Exposition of the GTAP model” GTAP technical paper No.8 that was published in 2002. AGE model is applied to the South Asian trade and getting results as follows.

### **SENSITIVITY ANALYSIS**

The most favored nations (MFN) status in this research given to India and employing the trade effects on Agricultural sector by using all the world trade blocks and see how trade effects on the performance of various trade blocks, and how these trade agreement gaining importance in the world trade. All blocks are employing in the GEM software and their application and welfare gain and loss will be applied in the GEM software. According to the sensitivity analysis of results from the 20 percent tariff India will be getting advantages in the way that most of the cosmetics and other stuff is imported from India and resulted from the trade block has been importance if 20 percent trade. On result on Tariff cum 15% percent Pakistan has advantage of trade because most of the trade in Block regions Pakistan has a competitive position and hence on 15% there will be welfare gain on Pakistan’s economy.

### **SIMULATION RESULTS**

According to the sensitivity analysis of results from the 20 percent tariff India will be getting advantages in the way that most of the cosmetics and other stuff is imported from India and resulted from the trade block has been importance if 20 percent trade. On result on Tariff cum 15% percent Pakistan has advantage of trade because most of the trade in Block regions Pakistan has a competitive position and hence on 15% there will be welfare gain on Pakistan’s economy. On 11 percent tariff the sensitivity has resulted that Srilanka has a competitive position by exporting the various products and services to various Asian Countries. According to the results on rest of the world trade Pakistan is not in competitive position to Trade with ASEAN and NAFTA countries because of the most of agricultural products there are quality and other issues.

### **CONCLUSIONS**

The various tools were applied for the policy analysis but due to fact that South Asian Trade Agreement has positive welfare impact on the economy of Pakistan (Bhagwanti, J. et al. 2002). South Asian Free Trade initiated few decades back when most of the developed world were not giving importance to the South Asian countries. Pakistan was exporting fish to U.K and various European countries but due to struck rule and regulation made by EU to stop the trade with Pakistan and Kenya they imported fish from various EU countries even customers wants Pakistani fish because of the different taste and quality. The various trick which were used by the various block trade countries put pressure to underdeveloped world to trade with the South Asian Countries because with out that there is no option left for the Pakistan, India, Srilanka, Maldev, and Nepal. Agriculture is the back bone of our economy with GDP share of 21.9 percent still the getting highest share in the economy of Pakistan (Economy of Pakistan 2009-10). On result on Tariff cum 15% percent Pakistan has advantage of trade because most of the trade in Block regions Pakistan has a competitive position and hence on 15% there will be welfare gain on Pakistan’s economy. On 11 percent tariff the sensitivity has resulted that Srilanka has a competitive position by exporting the various products and services to various Asian Countries. According to the results on rest of the world trade Pakistan is not in competitive position to Trade with ASEAN and NAFTA countries because of the most of agricultural products there are quality and other issues.

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Table 1. Gross National Product of Pakistan Rs.Million

S.No	Sectors/Sub-sectors	1999-00	2000-01	2001-2002	2002-03	2003-04	2004-05	2005-06	2006-07
<b>A.</b>	<b>Agricultural sector</b>	<b>876544</b>	<b>6788989</b>	<b>6787809</b>	<b>77900655</b>	<b>889000</b>	<b>768887</b>	<b>77889654</b>	<b>7889998</b>
	<b>Crops. Major crops</b>	675497	565434	986576	686544	8978656	87543	676544	786544
	<b>1.2.Minor crops</b>	786686	676544	675432	875433	67655546	86543	58765	865434
	<b>2.Livestock</b>	98765	765444	786544	3556768	7865466	465768	5454667	876544
	<b>3.Fishries</b>	787755	97654	6754332	25468	5643235	876544	986655	6789876
	<b>4. Forestry</b>	6788967	875654	6754343	6864333	876544	3546578	87654	234566
		57875	765544	876544	865444		7864433	898655	3344577
<b>B.</b>	<b>Industrial Sector</b>	<b>45556</b>	<b>676878</b>	<b>68788</b>	<b>64454</b>	<b>345566</b>	<b>466778</b>	<b>567657</b>	<b>677787</b>
<b>A+B</b>	<b>Commodity producing Sectors</b>	<b>457543</b>	<b>556516</b>	<b>76543</b>	<b>8654433</b>	<b>866544</b>	<b>789090</b>	<b>4322235</b>	<b>7766544</b>
<b>C</b>	<b>Services Sector</b>	<b>765444</b>	<b>66788</b>	<b>788990</b>	<b>557687</b>	<b>344355</b>	<b>343344</b>	<b>4545465</b>	<b>677888</b>
<b>D</b>	<b>Gross Domestic Product (GDP)</b>	<b>245688</b>	<b>865443</b>	<b>98776</b>	<b>987665</b>	<b>76544</b>	<b>7665554</b>	<b>566774</b>	<b>8766554</b>
<b>E.</b>	<b>Net Factor Income from Abroad</b>	<b>-678544</b>	<b>-987665</b>	<b>765544</b>	<b>8765544</b>	<b>876654</b>	<b>56778</b>	<b>677888</b>	<b>56677</b>
<b>F.</b>	<b>Gross National Product(GNP)</b>	<b>56678</b>	<b>987655</b>	<b>566778</b>	<b>57432258</b>	<b>57788</b>	<b>987655</b>	<b>765544</b>	<b>776544</b>
<b> G.</b>	<b>Population in Million</b>	<b>87.1</b>	<b>249</b>	<b>133.5</b>	<b>189.9</b>	<b>167.9</b>	<b>163.8</b>	<b>170.8</b>	<b>180.9</b>
<b>H.</b>	<b>Per capita Income (Rs.)</b>	<b>456767</b>	<b>876655</b>	<b>455777</b>	<b>86655</b>	<b>8776655</b>	<b>567778</b>	<b>65446</b>	<b>77655</b>

Source. Annual Report Bearu of Statistics-2007

Table 2. Experiment-20% uniform Import Tariffs Estimated Welfare Trade Effect

Region	EV-US\$Mil.	%GDP	Of QGDP	TOT	Volume of Exports	Volume of Imports	Of Export Price	Import Price	DTBAL US\$mil.
ASEAN	7655	6768	9877	8768	988	9898	988	8988	998
EU	87987	9988	99	799	999	9776	566	666	666
IND	-67	787	87	98787	979	999	99	99	77
JPN	878	99	99	99	755	88	77	777	567
PAK	<b>66</b>	<b>66</b>	<b>66</b>	<b>66</b>	<b>66</b>	<b>70</b>	<b>80</b>	<b>87</b>	<b>77</b>
LKA	87	77	88	77	544	88	55	989	55
MIE	667	77	77	8855	55	88	76	44	56
NAFTA	766	888	7888	777	888	68	66	88	66
ROW	677	88	88	8806	55	77	55	55	55

Table 3. Experiment-1 17% uniform Import Tariffs. Estimated Percentage Changes in Regional Out put in agricultural trade liberalization

SECTORS (A)Industry Out Put	ASEAN	EU	IND	JPN	PAK	LKA	NAFTA	ROW
AGRI	-988	066	0.566	0.988	<b>-80</b>	-67	-56	-98
MINQ	-0.88	.88	0.55	0.88	<b>-89.0</b>	0.66	0.67	0.56
PROF	0.45	0.45	0.78	0.67	<b>-876</b>	-88	-0.55	-0.00
TEXT	-0.55	-88	788	-77	<b>-22</b>	-0.88	0.77	0.55
PECP	-4565	-67	-26	-78	<b>78</b>	-788	-68	-787
MAEQ	0.55	98.0	7.78	088	<b>-4556</b>	-0.88	0.44	0.66
OTHM	0.66	0.88	0.89	0.88	<b>-7875</b>	0.88	7978	787
SERC	-898	0976	-877	1.876	<b>0.77</b>	0.77	-765	0.78
<b>B-Aggregate Exports</b>								
AGRI	-0.665	0.544	87.0	0.89	<b>-678</b>	0.56	0.677	0.226
MINQ	-677	-876	0.56	0.877	<b>-6.89</b>	5.78	0.766	676.8
PROF	0.76	0.89	0.78	0.89	<b>-78</b>	1.90	0.76	0.12
TEXT	-457	0.11	0.787	1.77	<b>-5.78</b>	.56	.788	0.78
PECP	-566	0.567	-455	-455	<b>35.78</b>	-68	-675	0.77
MAEQ	-3.78	2.56	6.89	5.88	<b>11.6</b>	13.6	12.2	56.7
OTHM	7.78	0.77	6.78	5.67	<b>-566</b>	6.5787	4.456	3.67
SERC	-568	2.567	4.67	2.678	<b>-564</b>	12.56	-1245	34.65

Table 4. Sensitivity Analysis, Estimated percentage change in Pakistan's output and Trade

15% Uniform Import Tariff SAFTA SAFTA cum 15% Uniform Tariff

## (b) Aggregate Exports

SECTORS (A)Industry Out Put	ASEAN	EU	IND	JPN	PAK	LKA	NAFTA	ROW
AGRI	-988	066	0.566	0.988	<b>-80</b>	-67	-56	-98
MINQ	-0.88	.88	0.55	0.88	<b>-89.0</b>	0.66	0.67	0.56
PROF	0.45	0.45	0.78	0.67	<b>-876</b>	-88	-0.55	-0.00
TEXT	-0.55	-88	788	-77	<b>-22</b>	-0.88	0.77	0.55
PECP	-4565	-67	-26	-78	<b>78</b>	-788	-68	-787
MAEQ	0.55	98.0	7.78	088	<b>-4556</b>	-0.88	0.44	0.66
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AGRI	-0.665	0.544	87.0	0.89	<b>-678</b>	0.56	0.677	0.226
MINQ	-677	-876	0.56	0.877	<b>-6.89</b>	5.78	0.766	676.8
PROF	0.76	0.89	0.78	0.89	<b>-78</b>	1.90	0.76	0.12
TEXT	-457	0.11	0.787	1.77	<b>-5.78</b>	.56	.788	0.78
PECP	-566	0.567	-455	-455	<b>35.78</b>	-68	-675	0.77
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SERC	-568	2.567	4.67	2.678	<b>-564</b>	12.56	-1245	34.65

## © Aggregate Imports

AGRI	-6.78	-7989	-899	788	-78	-676	-67	-789	90
MINQ	-4.56	-456	-577	-677	-78	-89	-78	-8	8
PROF	41.5	23.7	12.4	12.5	17.7	18.6	14.7	77.0	78.0
TEXT	41.2	45.6	47.7	-78	-56	-67	67.9	6.7	8.7
PECP	-34	7.8	-78	67.8	0.77	0.67	-789	9.9	67
MAEQ	2.45	5.7	9.0	6.8	7.89	5.89	7.99	6.78	4.67
TREQ	6.89	6.9	7.9	89.0	13.89	68.9	13.87	68.0	67.0

Table 5. Sensitivity Analysis, Estimated percentage change in Pakistan's output and Trade

11% Uniform Import Tariff      SAFTA      SAFTA cum 11% Uniform Tariff

## (b) Aggregate Exports

SECTORS (A)Industry Out Put	ASEAN	EU	IND	JPN	PAK	LKA	NAFTA	ROW
AGRI	-789	-789	89.89	0.78	<b>-78</b>	-45	-78	-56
MINQ	-678	-87	0.78	0.78	<b>90</b>	0.66	90	465
PROF	0.45	0.45	0.78	0.67	<b>-876</b>	-88	-0.55	-0.00
TEXT	-0.55	-88	788	-77	<b>-22</b>	-0.88	0.77	0.55
PECP	-4565	-67	-26	-78	<b>78</b>	-788	-68	-787
MAEQ	0.55	98.0	7.78	088	<b>-4556</b>	-0.88	0.44	0.66
OTHM	0.66	0.88	0.89	0.88	<b>-7875</b>	0.88	7978	787
SERC	-898	0976	-877	1.876	<b>0.77</b>	0.77	-765	0.78
<b>B-Aggregate Exports</b>								
AGRI	-0.665	0.544	87.0	0.89	<b>-678</b>	0.56	0.677	0.226
MINQ	-677	-876	0.56	0.877	<b>-6.89</b>	5.78	0.766	676.8
PROF	0.76	0.89	0.78	0.89	<b>-78</b>	1.90	0.76	0.12
TEXT	-457	0.11	0.787	1.77	<b>-5.78</b>	.56	.788	0.78
PECP	-566	0.567	-455	-455	<b>35.78</b>	-68	-675	0.77
MAEQ	-3.78	2.56	6.89	5.88	<b>11.6</b>	13.6	12.2	56.7
OTHM	7.78	0.77	6.78	5.67	<b>-566</b>	6.5787	4.456	3.67
SERC	-568	2.567	4.67	2.678	<b>-564</b>	12.56	-1245	34.65

## © Aggregate Imports

AGRI	-890	-7889	-87	9.98	76	-13.78	-68.9	-54	-70
MINQ	-4.56	-456	-577	-677	-78	-89	-78	-8	8
PROF	41.5	23.7	12.4	12.5	17.7	18.6	14.7	77.0	78.0
TEXT	41.2	45.6	47.7	-78	-56	-67	67.9	6.7	8.7
PECP	-34	7.8	-78	67.8	0.77	0.67	-789	9.9	67
MAEQ	2.45	5.7	9.0	6.8	7.89	5.89	7.99	6.78	4.67
TREQ	6.89	6.9	7.9	89.0	13.89	68.9	13.87	68.0	67.0