

Implications of India-Pakistan Trade Liberalization: A CGE Modeling Approach

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Key Issues

- Low Level of Bilateral Trade
- Non-Tariff Barriers
- Logistics Barriers
- Ways to overcome Bottlenecks
 - Trade through Third Countries
 - Informal Trade
 - Regionalism

FTA Status by Major South Asian Countries

Country	Proposed	Under Negotiation	Signed but not yet in effect	Signed & In effect	Total
Bangladesh	0	3	1	2	6
India	7	14	0	13	34
Pakistan	11	7	3	6	27
Sri Lanka	2	1	1	4	8

1. Proposed: Parties consider an FTA, with the governments or relevant ministries issuing a joint statement
2. Framework Agreement Signed: The parties initially negotiate the contents of a framework agreement (FA) , which serves as a framework for future negotiations
3. Negotiations launched: The parties, through the relevant ministries, declare the official launch of negotiations or set the date for such, or start the first round of negotiations
4. Signed but not yet in effect: Parties sign the agreement after negotiations have been completed. However, the agreement has yet to be implemented
5. Signed and in effect: Provisions of FTA come into force, after legislative or executive ratification

FTA Agreements

RTA Name	Coverage	Type	Date of notification	Notification	Date of entry into force	Status
ASEAN - India	Goods	FTA	19-Aug-10	Enabling Clause	01-Jan-10	In Force
Chile - India	Goods	PSA	13-Jan-09	Enabling Clause	17-Aug-07	In Force
India - Afghanistan	Goods	PSA	08-Mar-10	Enabling Clause	13-May-03	In Force
India - Bhutan	Goods	FTA	30-Jun-08	Enabling Clause	29-Jul-06	In Force
India - Japan	Goods & Services	FTA & EIA	14-Sep-11	GATT Art. XXIV & GATS Art. V	01-Aug-11	In Force
India - Malaysia	Goods & Services	FTA & EIA	06-Sep-11	Enabling Clause & GATS Art. V	01-Jul-11	In Force
India - Nepal	Goods	PSA	02-Aug-10	Enabling Clause	27-Oct-09	In Force
India - Singapore	Goods & Services	FTA & EIA	03-May-07	GATT Art. XXIV & GATS Art. V	01-Aug-05	In Force
India - Sri Lanka	Goods	FTA	17-Jun-02	Enabling Clause	15-Dec-01	In Force
Pakistan - China	Goods & Services	FTA & EIA	18-Jan-2008(G) / 20-May-2010(S)	GATT Art. XXIV & GATS Art. V	01-Jul-2007(G) / 10-Oct-2009(S)	In Force
Pakistan - Malaysia	Goods & Services	FTA & EIA	19-Feb-08	Enabling Clause & GATS Art. V	01-Jan-08	In Force
Pakistan - Sri Lanka	Goods	FTA	11-Jun-08	Enabling Clause	12-Jun-05	In Force

Understanding Economic Impact of India Pakistan Trade Liberalization

- Tool
 - Computable General Equilibrium Modelling Approach
 - We have used GTAP version 6.2 Global Model for our analysis
- Database
 - GTAP 8 data base of the Centre for Global Trade Analysis comprising of 57 sectors of production, 129 region
 - Base Year : 2007
 - This database combines
 - Economic linkages among regions by providing data on bilateral trade and protection
 - (Protection coefficient of Service related sectors are absent for India/Pakistan)
 - Inter-sectoral linkages within individual regions by I/O databases

Key Features of GTAP Model

- A multi-country global CGE model
- Factors of productions: land, labour & capital
 - Land immobile across sectors
- 3 Economic agents
 - consumers, producers, government
- Accounting relationship underlying the model ensures receipts & expenditures of all agents are balanced
- Behavioral equation in the model ensures that the economic agents are optimizers

Key Features of GTAP Model

- Product differentiation modeled through Armington assumption
- Market Structure -- Perfect competition
- Policy Inputs: Policy Impact
- Transmission Mechanism of Policy Shocks
 - Tariff cut (For Example)
 - Domestic buyers substitute towards imports
 - Domestic competing industry contracts production while foreign exporters expand
 - Resources being allocated along the lines of comparative advantage

Model Aggregation Scheme

- Use of an aggregated database of 20 sectors & 13 regions
- Regions:
 - India, Nepal, Pakistan, Sri Lanka, Rest of South Asia, Malaysia, Singapore, Rest of ASEAN, China, EU_25, Japan, NAFTA, Rest of World
- Sectors
 - Grains & Crops, Meat products & Livestock, Extraction, Processed Food , Textiles, Wearing Apparel, Leather Products, Light Manufacture , Heavy Manufacture , Chemicals, Rubber etc, Mineral Products, Motor Vehicles & parts, Transport Equipments, Electronic Equipments, Machinery, Trade & Communication, Sea Transport, Air Transport, Other Transport, Other Services

Overview of Trade Linkages in Base Year

Sectors	Exports: India to Pakistan		Exports: Pakistan to India	
	US \$ Million	Share (%)	US \$ Million	Share (%)
Grains & Crops	409.9	21.73	65.7	20.73
Meat products & Livestock	21.9	1.16	1.1	0.35
Extraction	64.1	3.40	5.0	1.58
Processed Food	170.2	9.02	5.5	1.74
Textiles	28.7	1.52	57.9	18.27
Wearing Apparel	0.3	0.02	1.3	0.41
Leather Products	7.9	0.42	14.0	4.42
Light Manufacture	29.1	1.54	2.0	0.63
Heaving Manufacture	362.5	19.22	88.0	27.77
Chemicals, Rubber etc	599.1	31.76	14.8	4.67
Mineral Products	5.0	0.27	11.7	3.69
Motor Vechiles & parts	0.4	0.02	0.4	0.13
Transport Equipments	1.2	0.06	0.0	0.00
Electronic Equipments	0.3	0.02	0.0	0.00
Machinery	29.3	1.55	5.4	1.70
Trade & Communication	5.4	0.29	2.2	0.69
Sea Transport	1.2	0.06	4.0	1.26
Air Transport	1.9	0.10	12.7	4.01
Other Transport	13.8	0.73	1.8	0.57
Other Services	134.0	7.10	23.2	7.32
Total	1886.2	100.00	316.9	100.00

Share of Country/Region's Import in Total in Base Year

Country	India	Nepal	Pakistan	Sri Lanka	Rest of SA	Malaysia	Singapore	Rest of ASEAN	China	EU_25	Japan	NAFTA
India	0.0%	48.0%	4.9%	27.0%	11.9%	1.6%	2.3%	1.8%	1.8%	1.1%	0.8%	1.6%
Nepal	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Pakistan	0.1%	0.1%	0.0%	1.6%	4.8%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.2%
Sri Lanka	0.2%	0.0%	0.2%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%
Rest of SA	0.3%	0.1%	0.5%	0.3%	0.1%	0.0%	0.0%	0.1%	0.0%	0.1%	0.0%	0.2%
Malaysia	2.4%	0.6%	3.3%	3.1%	2.4%	0.0%	8.1%	4.7%	3.0%	0.5%	2.3%	1.5%
Singapore	3.6%	1.3%	1.5%	3.8%	2.6%	14.9%	0.0%	8.2%	2.1%	0.6%	1.7%	0.8%
Rest of ASEAN	3.4%	2.6%	4.5%	6.0%	6.9%	13.2%	7.7%	8.0%	6.4%	1.4%	9.1%	2.7%
China	9.2%	14.6%	13.2%	10.5%	15.3%	12.5%	8.8%	12.7%	0.0%	5.1%	17.6%	12.7%
EU_25	20.2%	13.9%	18.9%	16.4%	10.6%	16.9%	16.3%	13.2%	13.8%	60.0%	13.0%	19.0%
Japan	2.9%	2.1%	4.3%	3.2%	4.2%	11.2%	8.1%	12.7%	14.2%	2.0%	0.0%	6.3%
NAFTA	10.8%	5.3%	8.8%	5.0%	7.5%	9.3%	15.4%	8.3%	10.0%	7.0%	15.4%	32.2%

Simulation

- Simulation 1: Full Liberalization
- Simulation 2:
 - Full Liberalization +
 - Productivity improvement (50%) in Transport Service Sectors
- Simulation 3:
 - Simulation 2 + Full Liberalization in FTA (in force) signed by India & Pakistan

Sources of Welfare Gains

Variables	Simulation 1		Simulation 2		Simulation 3	
	India	Pakistan	India	Pakistan	India	Pakistan
Equivalent Variation (Millions of US \$)	282.85	41.04	1560.48	271.11	6171.59	127.24
Allocative Efficiency Effects	164.59	20.24	304.23	46.39	5721.73	254.64
Terms of Trade Effects	97.09	10.33	108.23	15.23	-526.2	-131.31
Technical Change Effects	0	0	1125.04	187.81	1125.04	187.81
Investment Saving Effect	21.17	10.47	22.98	21.68	-148.98	-183.9
Change in GDP (%)	0.010	0.010	0.110	0.120	0.550	0.270
Return: Land	0.03	0.31	0.15	0.27	-0.45	0.65
Return: USk. Labor	0.02	0.15	0.12	0.34	0.85	0.65
Return: Sk Labor	0.02	0.14	0.12	0.35	1	0.65

Change in Macroeconomic Variables (%)

Variables	Simulation 1		Simulation 2		Simulation 3	
	India	Pakistan	India	Pakistan	India	Pakistan
Change in Volume of Exports (%)	0.13	1.1	0.23	1.3	3.46	7.27
Change in Volume of Imports (%)	0.15	0.75	0.27	1.19	2.87	3.99
Change in Trade Balance (Millions of US \$)	-36.85	-66.3	-115.6	-144.74	-819.54	-192.11
Change in terms of Trade	0.04	0.05	0.05	0.22	-0.22	-0.49
Increase in Pakistan's Export to India (%)	89%		110%		105%	
Increase in India's Exports to Pakistan (%)		42.0%		58.2%		52.9%

Sectoral Exports Growth (%)

Sectors	Exports: India to Pakistan				Exports: Pakistan to India			
	Simulation 2		Simulation 3		Simulation 2		Simulation 3	
	%	US \$ Mill	%	US \$ Mill	%	US \$ Mill	%	US \$ Mill
Grains & Crops	43.5	178	44.8	183.5	188.5	124	181.8	119.42
Meat products & Livestock	53.7	12	55.0	12.0	98.24	1	98.6	1.09
Extraction	149.1	96	149.6	95.9	247.2	12	244.5	12.22
Processed Food	56.1	95	36.8	62.6	141.3	8	59.2	3.25
Textiles	105.8	30	77.0	22.1	118	68	117.1	67.81
Wearing Apparel	146.5	0	78.9	0.2	107.9	1	110.4	1.43
Leather Products	160.0	13	128.6	10.2	87.4	12	86.9	12.17
Light Manufacture	117.0	34	95.3	27.7	138.6	3	137.3	2.75
Heaving Manufacture	78.9	286	77.0	279.2	91.32	80	86.6	76.23
Chemicals, Rubber etc	53.7	322	46.5	278.6	101.9	15	94.2	13.94
Mineral Products	129.3	6	102.9	5.1	146.2	17	143.2	16.75
Motor Vechiles & parts	177.3	1	165.5	0.7	84.29	0	67.5	0.27
Transport Equipments	134.8	2	126.7	1.5	153.9	0	157.0	0.00
Electronic Equipments	68.8	0	50.5	0.2	-0.06	0	2.1	0.00
Machinery	78.0	23	62.6	18.4	109.4	6	104.6	5.65
Trade & Communication	0.4	0	-0.3	0.0	-0.83	0	1.0	0.02
Sea Transport	0.3	0	0.0	0.0	-0.62	0	1.1	0.04
Air Transport	0.1	0	-0.2	0.0	0.03	0	2.0	0.25
Other Transport	0.0	0	-0.5	-0.1	0.2	0	2.2	0.04
Other Services	0.3	0	-0.7	-0.9	-0.5	0	1.6	0.37

Sectoral Output Growth (%)

Sectors	India		Pakistan	
	Simulation 2	Simulation 3	Simulation 2	Simulation 3
Grains & Crops	0.11	-0.36	0.12	0.41
Meat products & Livestock	0.12	0.43	0.13	0.01
Extraction	0.04	-0.09	-0.41	-0.28
Processed Food	0.16	-4.31	-0.16	-1.96
Textiles	-0.04	0.94	0.33	2.61
Wearing Apparel	-0.11	1.61	-0.3	2.58
Leather Products	-0.01	1.91	-0.04	2.35
Light Manufacture	0.04	0.26	-0.51	-3.74
Heaving Manufacture	0.17	0.52	0.11	-0.39
Chemicals, Rubber etc	0.31	0.07	-1.53	-3.22
Mineral Products	0.04	0.21	0.25	-1.07
Motor Vechiles & parts	0.06	-1.14	0.33	-2.2
Transport Equipments	0	0.94	0.33	-0.54
Electronic Equipments	-0.01	0.52	0.1	-4.21
Machinery	0.04	-1.01	0.89	6.34
Trade & Communication	0.12	0.2	0.08	-0.09
Sea Transport	-0.02	0.4	-0.19	0.44
Air Transport	0.03	0.37	0.08	0.73
Other Transport	0.1	0.28	0.19	0.19
Other Services	0.1	0.31	0.13	0.22

Concluding Remarks

- Significant gains exists in case of India Pakistan Liberalization
- Gains is significant only if productivity in logistics improves
 - Paramount to address logistics barriers

Thank you