



Has Bangladesh's Trade Potential Explored in SAFTA?: Evidence from Gravity Model

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Introduction

- Old Regionalism vs New Regionalism
- Waves of Regionalism
- Increasing Number of Regional Trade Agreements
- South-South Regional Trade Agreements
- What is the position of SAFTA?
- Whether there is a possibility of unexplored potential of SAFTA's trade , if it exists ?



Trends of South – South Regional Trade Agreements

RTAs	Bilateral	Plurilateral	Country-RTAs	Total
Intraregional South-South RTAs	16	3	3	22
Interregional South-South RTAs	13	1	0	14
Intraregional North-South RTAs	5	0	0	5
Interregional North-South RTAs	14	2	4	20
Total	48	6	7	61

Source : WTO, 2015.



Intra trade of Region/Trade Blocs (% of Total Exports with in Bloc)

Blocs	1995	2000	2005	2010	2011	2012
EU	65.9	67.5	67.6	64.8	63.9	61.8
NAFTA	46.0	55.7	55.7	48.7	48.3	48.5
APTA	7	7.9	11	12.1	11.7	11.1
ASEAN	24.9	23.0	25.3	25.0	25.0	26.0
ECO	8.1	5.7	7.4	9.6	9.6	11.1
SAFTA	5.1	4.6	6.8	6.1	5.5	5.8
GCC	6.8	4.8	4.9	5.4	5.1	5.0

Source: World Bank, *World Development Indicators: Various Issues*.



SAARC

- 25 percent of world population, but their share in GDP was merely 5.74 percent
- India as the strongest economy
- Journey of SAARC to SAFTA
- Heavy dependence on either one or two markets lead to reduction in intra-SAARC exports of countries like Bhutan, Maldives and Nepal.
- Now question comes whether a spaghetti bowl of SAFTA work as a hindrance or not.
- Lack of complementarities in production



Production Structure of SAARC Countries (percent)

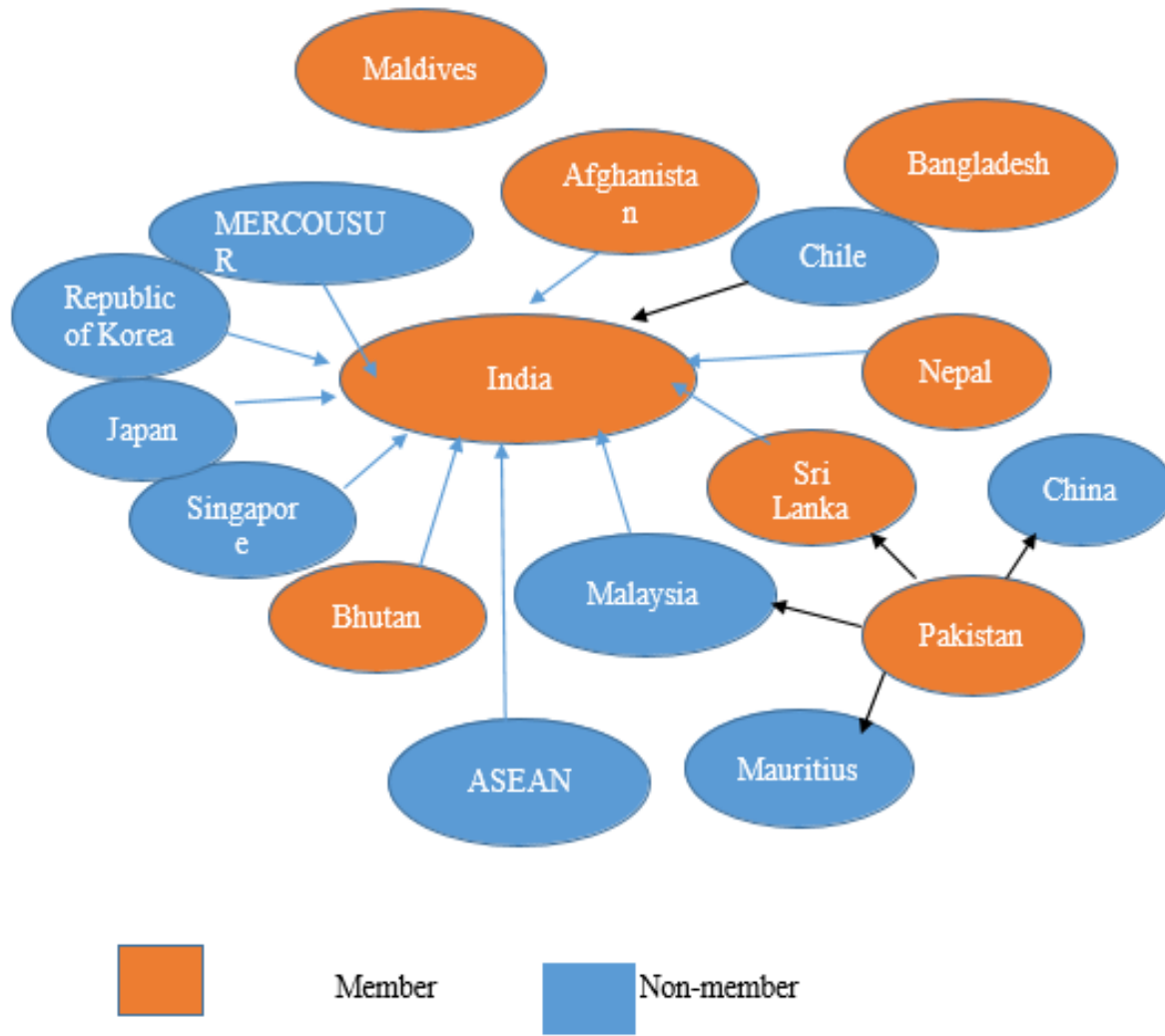
Country	Agriculture				Industry (Total)				Services			
	1985	1995	2005	2012	1985	1995	2005	2012	1985	1995	2005	2012
Afghanistan	-	-	-	24	-		27	22	-	-	41	54
Bangladesh	32.0	25.7	21.9	17	20.9	24.9	26.5	28	47.0	49.5	51.6	54
Bhutan	52.6	34.0	22.3	18	19.0	34.8	48.8	42	30.6	31.2	28.9	40
India	33.0	28.2	19.0	18	28.2	28.1	27.4	25	38.8	43.6	53.6	56
Maldives	-	11.0	9.1	4	-	13.0	17.2	23	-	76.0	73.7	73
Nepal	51.7	40.8	38.3	35	15.1	22.2	21.3	16	34.1	37.0	40.4	48
Pakistan	28.5	26.7	21.6	25	22.5	23.7	25.1	22	49.0	49.6	53.3	54
Sri Lanka	24.4	20.6	15.5	11	26.8	29.7	29.8	32	48.8	49.7	54.7	57



Revealed Comparative advantage

- Export basket of the SAARC countries except Maldives dominated by manufactured goods.
- Import basket for all SAARC nations dominated by manufactured goods.
- Among SAARC nations, Bangladesh constituted major share in manufacture i.e. 89.6 percent in total exports.
- In Food and Live Animals and Miscellaneous Manufactured Articles , most of the SAARC Nations have comparative advantage.

Spaghetti Bowl of SAFTA





Gravity Model of Trade

$$L_n E_{ijt} = \alpha + \beta_1 L_n Y_{it} + \beta_2 L_n Y_{jt} + \beta_3 L_n \text{Pop}_{it} + \beta_4 L_n \text{Pop}_{jt} + \beta_5 \text{Er}_{it} + \beta_6 \text{Er}_{jt} + \beta_7 L_n \text{Dis}_{ij} + \beta_8 \beta_{or_{ij}} + \beta_9 \text{Lan}_{ij} + e_{ijt}$$

$$L_n E_{ijt} = \alpha + \beta_1 L_n Y_{it} + \beta_2 L_n Y_{jt} + \beta_3 L_n \text{Pop}_{it} + \beta_4 L_n \text{Pop}_{jt} + \beta_5 \text{Er}_{it} + \beta_6 \text{Er}_{jt} + \beta_7 L_n \text{Dis}_{ij} + \beta_8 \beta_{or_{ij}} + \beta_9 \text{Lan}_{ij} + \beta_{10} \text{Bil}_{ijt} + e_{ijt}$$

$$L_n E_{ijt} = \alpha + \beta_1 \ln Y_{it} + \beta_2 \ln Y_{jt} + \beta_3 \ln \text{Pop}_{it} + \beta_4 \ln \text{Pop}_{jt} + \beta_5 \text{Er}_{it} + \beta_6 \text{Er}_{jt} + \beta_7 \ln \text{Dis}_{ij} + \beta_8 \beta_{or_{ij}} + \beta_9 \text{Lan}_{ij} + \beta_{10} \text{Bil}_{ijt} + \beta_{11} (\text{Bil}_{ijt} \times \text{Spg}_{ijt}) + e_{ijt}$$



Table 5: Results of Gravity Model

Variable	Restricted/ Pooled Estimation		Fixed Effects Estimation		Random Effects Estimation	
	Coefficient	Z-statistics	Coefficient	Z-statistics	Coefficient	Z-statistics
Constant	-16.93**	-29.83	-17.70*	-2.11	-17.95**	-11.45
Gross Domestic Product of Exporter Country	0.24**	6.26	1.11**	5.54	0.44**	5.58
Gross Domestic Product of Importer Country	0.17**	4.57	-0.17	-0.85	0.31**	3.93
Population of Exporter Country	0.99**	16.91	1.44	1.53	0.81**	5.05
Population of Importer Country	0.67**	11.48	-0.27	-0.29	0.61*	3.76
Real Exchange Rate of Exporter Country	0.12	1.17	0.86**	3.09	0.17	1.13
Real Exchange Rate of Importer country	0.26**	2.49	-0.91**	-3.24	-0.07	-0.54
Bilateral	0.66**	3.26	0.21	1.35	0.22	1.50
Bowl	0.21	0.87	0.001	0.01	0.05	0.35
R ²	0.67		0.84		0.45	
Restricted F-test			36.05**			
Hausman Test					47.74	



Results of Gravity Model

- Economic size (GDP) of exporter country came out to be significantly and positively affecting SAARC's intra-exports .
- Market size (population) of exporter country had positively impact on Indian exports, market size (population) of importer country had also negatively affected the exports showing absorption effect i.e. country exports less when it is big.
- Real exchange rate of exporter country had significant and positive effect on exports i.e. depreciation of the exporter currency will increase the exports while real exchange rate of importer country had significant and negative effect on exports
- Bilateral agreements among themselves have a positive impact on intra-trade but they are not significantly playing a major role.
- Spaghetti bowl's problem has not been seen.



Port Potential between SAARC Members using (P-A)*

Importer Exporter	Bangladesh	India	Nepal	Pakistan	Sri Lanka
Bangladesh	-	-251.334	-7.80	37.98	2.97
India	-47.90	-	-63.41	-9.02	-62.58
Nepal	-1.56	-101.51	-	-0.06	-0.29
Pakistan	4.03	-300.458	0.09	-	25.04
Srilanka	-2.41	-327.655	-1.51	21.19	-

Source: Based on the results of gravity model.

*P=predicted by gravity model, A=actual values.



Export Potential between SAARC Members using (P/A)* Approach

Importer Exporter	Bangladesh	India	Nepal	Pakistan	Sri Lanka
Bangladesh	-	1.12	5.89	1.12	1.11
India	1.41	-	2.50	1.15	1.27
Nepal	2.17	1.12	-	1.73	2.88
Pakistan	1.09	2.18	2.23	-	1.33
Srilanka	1.91	1.13	5.54	1.07	-

Source: Based on the results of gravity model *P=predicted by gravity model, A=actual value.



Pruning Sensitivity list

- Category I: $BRCA > 1$, $ERCA < 1$
- Category II: $BRCA > 1$ $ERCA > 1$
- Category III: $BRCA < 1$ $ERCA < 1$
- Category IV: $BRCA < 1$ $ERCA > 1$



Categories for Bangladesh with India, Pakistan and Sri Lanka

Partners	India	Pakistan	Sri Lanka
Category			
1	Bangladesh Competitive BRCA>1; IRCA<1 25	Bangladesh Competitive BRCA>1; IRCA<1 4	Bangladesh Competitive BRCA>1; IRCA<1 7
2	Bangladesh and India Competitive BRCA>1; IRCA>1 8	Bangladesh and Pakistan Competitive BRCA>1; IRCA>1 10	Bangladesh and Sri Lanka Competitive BRCA>1; IRCA>1 20
3	Neither Bangladesh nor India Competitive BRCA<1; IRCA<1 23	Neither Bangladesh nor Pakistan Competitive BRCA<1; IRCA<1 6	Neither Bangladesh nor Sri Lanka Competitive BRCA<1; IRCA<1 17
4	India Competitive BRCA<1; IRCA>1 46	Pakistan Competitive BRCA<1; IRCA>1 12	Sri Lanka Competitive BRCA<1; IRCA>1 8



Textile, Readymade Garments Items for Bangladesh with India and Sri Lanka

Category	1	2	3	4
Partner				
India	Bangladesh Competitive BRCA>1; IRCA<1 7	Bangladesh and India Competitive BRCA>1; IRCA>1 21	Neither Bangladesh nor India Competitive BRCA<1; IRCA<1 12	India Competitive BRCA<1;IRCA>1 6
Sri Lanka	Bangladesh Competitive BRCA>1; IRCA<1 2	Bangladesh and Sri Lanka Competitive BRCA>1; IRCA>1 16	Neither Bangladesh nor Sri Lanka Competitive BRCA<1; IRCA<1 39	Sri Lanka Competitive BRCA<1;IRCA>1 14



No. of Pruned Commodities from Sensitive List

Steps	Category	India	Pakistan	Sri Lanka
1	Items in Bilateral Sensitive List but not in SAFTA Sensitive List	25	-	38
2	Zero Export items	74	31	55
3	De-reserved items	36	77	71
4	RCA Categories:			
	Category: 1 BRCA>1, ERCA<1	25	4	7
	Category II: BRCA>1 ERCA>1	8	10	20
	Category III:BRCA<1ERCA<1	23	6	17
	Category IV: BRCA<1 ERCA>1	46	12	8
	Pruned Sensitive List (Category IV)	46	12	8

Thanks

