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REGIONAL INTEGRATION AND TRADE IN SOUTH ASIA: MEASURING THE EXTENT OF INTRA REGIONAL TRADE AND ORIENTATION

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Abstract
In recent times lot has been debated about the importance of the regional trade agreements and it has been seen that in some case, such as NAFTA and ASEAN, the share of intra regional trade is as high as 40%. This bring forwards whether the regional integration in South Asia (SAARC) is equally important when compared with the other group or not. The preliminary investigation shows that the share of intra regional trade in total trade of the SAARC countries is quite low and it had not change in the last 15years. This has raised the issue of why the intra regional trade among SAARC countries has not increased, is it due to the political factors or the economic factors that are hurdle in the trade. Secondly coming to regional orientation of trade in case of SAARC .

This paper tries to find out the extent of intra regional trade in South Asia and comparing it with Association of South East Asian Nations (ASEAN) and North America Free Trade Area (NAFTA). Secondly finding out the share the of the member countries in SAARC exports to the world and SAARC itself. Thirdly gravity model of trade has been applied to find out the impact of gross domestic product (GDP) and distance on the exports for NAFTA and SAARC. Finally comparing the ROI with RCA there seems no relation between ROI and RCA except for few commodities in which the SAARC has higher ROI and at the same time has RCA greater than one.

Keywords: Infrastructure, South Asia, Panel Data, Connectivity, Regionalism.

Introduction

With the aim of improving political and economic relation among the South Asian nations, South Asian Association for Regional Cooperation was formed on 8th December, 1985 at Dhaka, Bangladesh. Since then series of summits have taken place and with the culmination each round of talks new chapters are opened for further negotiations and talks. SAARC areas of cooperation are very wide starting with cooperation on agriculture, education, tourism and moving towards social development and poverty alleviation etc. For the issues that arise from trade SAFTA is specifically signed by the SAARC members and was put into effect from 2006 onwards. Trade liberalisation programme which was launched in 2006 to increase trade among countries has not resulted in the increased trade among them as expected. On international platform the results are not quite satisfactory as the exports from these nations have not increased significantly and presently together they contribute 2.1% of world exports with major share of India (1.7%) followed by Bangladesh (.2%) and Pakistan (.2%). On the regional trade front not much has resulted and the exports from the member countries going to the other countries have registered a downwards trends except for Afghanistan, Bhutan and Nepal all other countries do not have the major exports going to the SAARC members.

The above discussion raises the following issues firstly if one looks at the other regional trading blocs such as North America Free Trade Area (NAFTA), Association of South East Asian Nations (ASEAN) etc one can find that intra-regional trade plays a vital role in regional trade, there is increased intra-regional trade among member countries but the same is not true with respect to SAARC countries, intra regional trade is decreasing year by year. Secondly transforming theory in practices and looking at the basic of gravity model of trade that show the country sharing border, closer to each other, speak same language etc tend to trade more than other countries. Although the basic of the model is very much true in the case of SAARC nations but results are disappointing.

SAARC countries lack the basic infrastructure facilities and further study into the topic reveals that because of the political issues among the member countries on the connectivity issue the trade is affected indirectly. The major issue of discussion that has come forward is the transit through India and Pakistan for reaching the goods to Afghanistan and Bangladesh. Apart for this the three landlocked countries Afghanistan, Nepal and Bhutan trade heavily with India and not with the other SAARC members.

Literature Review

Kunal Sen (2014) work on finding out the importance of the production network for South Asia. His work specifically deals with India. His work also deals with bringing out the importance of production network and the economic corridors for south asia.Prabir De (2014) in his work brought forward the importance of connectivity in regional trade of South and South West Asia(SSWA). His work focused on the production network of 'parts and components' in SSWA. He concluded that there is the huge potential of trade in the parts and components in SSWA but because of the underdeveloped transport connectivity in

SSWA it can not flourish fully. Further he concluded that with better connectivity among SSWA nations will result in the competitive output in the world market and thus will improve the bargaining position of these countries. He also highlighted how improved trade facilitation will contribute towards the production and trade network in SSWA.

Biswanath. B. (2014), in his work brought forward the factors that have contributed to the success of the Association of the South East Asian (ASEAN) in the field of trade and economic integration. He found that because of more open economy and trade liberalisation has resulted in the better production network. He also highlighted the importance of the transport among ASEAN countries.

Prabir De(2014) work focused on the importance of developing the economic corridors in the south asia. His work brought forward the importance of the India in the region as the centre point for providing connectivity. He contended that the South Asia region must be developed on the ground taking the case of Greater Mekong Region (GMR).He uses the cross section pooled data for finding out the factors determining the economic corridors. For the purpose of study he selected 98 countries. He got the value of r-squared between 55-89% for different regression equations. Finally the variables selected of them the most important were the institutions and the governance which affect the infrastructure significantly.

Moise et.al (2011) constructed the Trade Facilitation Indicators and related them with the trade cost. Their study focused on the OECD countries and for the purpose of analysis they constructed 12 indicators and regressed them with the bilateral trade. They used the standard version of the Anderson and Wincoop gravity equation and found the results are in consonance with the theory i.e with the improved trade facilitation their is reduction in the trade cost. They developed three model- one for manufacturing sector, agriculture sector and total economy. For manufacturing sector the result were significant but not for the agriculture and total economy.

In 1960s gravity model was developed (Tinbergen 1962, Poyhonen 1963, Linnemann 1966) without any theoretical support. Anderson (1979) further refined the basic gravity model and he introduces the many goods, tariff and distance into the model, further Bergstrand (1985) moved step ahead and studied the affect of real exchange rate. Helpman 1987 and Bergstrand 1989 applied the gravity model for analysing the intra industry trade and this become the foundation for new trade theory.

Chiranjib Neogi(2014) applied the gravity model for analysis the affect of cross border infrastructure, industrial agglomerates. He uses the data for 22 years from 1987-2008 four south Asian countries- Bangladesh, India, Pakistan and Sri Lanka. Selected independent variables explains the change in the bilateral trade and as expected distance, road infrastructure have the negative values and the value of r-square lies between 555-60% for export and import. Infrastructure Development, Industrial Agglomeration and Regional Trade in South Asia, *Chiranjib Neogi ADB.*

De, Raihan and Kathuria (2012) show that improved trade facilitation and regional transit would help increase trade between India and Bangladesh. There is strong evidence to show that improving the efficiency of customs and administrative procedures, and simplifying trade-related documentation can facilitate trade between two countries. The augmented gravity model shows that a 10% reduction in trade related documentation could result in a 7.31% increase in bilateral trade, and a 10% reduction in the inefficiency of border control agencies, including customs, might lead to a 3.91% increase in trade. The strongest impact on bilateral trade would come from regional transit. In all, a 1% improvement in trade facilitation would increase Bangladesh's exports by 4%.

Objectives

Following are the important objectives of this paper:

1. Finding and comparing the change in the intraregional trade share of NAFTA, ASEAN and SAARC and their share in the word exports.
2. Country wise share in the SAARC exports.
3. Applying the gravity model of trade and finding the out the importance of distance for the NAFTA and SAARC in determining the exports.
4. Comparing the Regional Orientation and Revealed Comparative Advantage.

Methodology

This study is based on secondary data and the major source of information is the official websites of the international organisation and national portal on trade. Data on trade is extracted from the International Trade Centre (ITS) TradeMap. The period of study is 2001-14. For finding out the importance of regional trade in South Asia two indexes have been used- Exports Share in World Exports and Intra-regional Trade share. Export share is computed by dividing the total exports from

the regional group to world by total world exports and for computing intra-regional trade share- total exports going to the regional group divided by the total exports of the group to world and world exports to the group.

This study uses the simple version of the gravity model as given Anderson and Wincoop. The variables that are selected are the partner and reporter GDP along with distance. As the purpose of this paper is to show the importance of distance for regional trading other factors such as common language, contagious, colonial rule are not taken for computing the results as they will only increase the value of R-squared. The data for the gravity modelling is taken from the gravity modelling database of the ARTNet. The data is available from 1994-2012 but not available for all SAARC countries such as- Afghanistan, Bhutan and unbalanced panel data regression is run for getting the results.

Findings

Trade Analysis Results

Table 1.1 shows the share of the major regional groups in the world exports for the period 2001-2014. Three groups that are selected for analysis are NAFTA, ASEAN and SAARC. On comparing the share of the selected groups it can be seen that the major share is contributed by NAFTA and its in double digit for the selected period but the interesting feature is that this group has seen the decreased in its share in the world exports from the 18.82% in 2001 it came down to 13.35% in 2014. For ASEAN no major change happened to its share and it had remained around 6% and finally coming to SAARC the share in world exports has slightly increased from .88% in 2001 to 2.08% in 2014. Thus it can be concluded that whatever decreased in the share of NAFTA happens it does not get absorbed by other groups.

On comparing the intra regional trade index for NAFTA, ASEAN and SAARC the major share in intra regional trade happens to NAFTA where the results have remained around 40% for the selected period and for ASEAN also it had remained constant throughout the period. The results are shown in table 1.2. Here the issue is not whether the share is constant or reduced but looking at the SAARC intra regional trade share the question that arises is that among SAARC countries the index values is around 4%, why regional trade is not so important for south asian countries. Regional trade plays important role for the NAFTA and ASEAN but not so for SAARC.

Table 1.3 shows the share of SAARC countries in SAARC exports. Major share is enjoyed by India in exports, with share of 70.81% in 2001 it reached its lowest level in 2009 as a result of financial crisis and then again recovered and for the year 2014 its share in SAARC exports accounts for 76.74%. Major reduction in the share occurred to Nepal followed by Sri Lanka. Share of Nepal in SAARC exports decreased from 12.07% in 2001 to 2.40% in 2014, Sri Lanka share reduced from 5.34% in 2001 to 3.94% in 2014. On the other hand share of other countries is quite negligible.

Intra SAARC exports country wise are shown in table 1.4. Time series analysis for the intra SAARC exports is not done due to the fact that in last few years no major change took place in the intra SAARC exports and the share of the respective countries have remained somewhat constant. Out of the seven SAARC nations three are landlocked namely Afghanistan, Bhutan and Nepal and being a landlocked their major exports goes to the neighbouring countries which is 61.1%, 98.25and 68.9% respectively. Leaving these three countries other countries exports going to SAARC member is less than 10% except for Pakistan which accounts for 13.1% exports going to other members.

Gravity Model- Results

On running the simple panel date regression for NAFTA and SAARC with just three regressors- GDP of partner and reporter and distance the results are same as expected reporter and partner GDP affect trade positively whereas the distance affect it negatively. The results are shown in table 1.5. In case of NAFTA these factors explain change in trade upto 91% where as the value for SAAARC is significant i.e. 595 but the coefficients value fluctuates a lot. In case of NAFTA its reporter and partner GDP both which affect trade whereas for SAARC countries as a whole reporter GDP have higher value than partner GDP and the distance affect negatively and its value is higher than NAFTA.

Although for NAFTA distance is not the concerned factors as there is no problemin trade but for SAARC countries it is major determining factors, if the actual distance on through which goods are exported and imported a taken into consideration then this value would be much higher, as at present the movement of goods between Pakistan and Bangladesh is not through India but the goods have to follow the long route and the same is the case for India and Afghanistan as Pakistan does not allow the Indian goods to move through.

SAARC- Regional Orientation Index (ROI) & Revealed Comparative Advantage (RCA)

Table 1.6 shows the ROI for the year 2009 and 2013 and RCA for the year 2013. Table only show the commodity that has RCA greater than one other commodity are not included. Regional orientation index for the SAARC export is computed for

the year 2009 and 2013. The computation is done on 4 digit level and the data are taken from ITC-Trade Map. Total number of products that are exported by SAARC countries together at one time or other comes to 1259; ROI is computed for 1207 products that are exported in both the years. Out of 1207 products that are exported 222 products have ROI greater than one, which denotes the comparative advantage in intra trade.

Revealed comparative advantage enjoyed by the commodity supplied by SAARC countries stands at 351. The analysis has been done at HS 4 digit code. Maximum value of the RCA is enjoyed by yarn of jute and other textiles with the value of 42.81 and fitting of loose leaf had the RCA value 1.0013. On comparing the RCA for the year 2013 with that of 2009 on can easily see that although the number of commodity enjoying RCA more than unity have increased from 344 to 351 overall the results are not satisfactory. The entire commodity that are being exported by SAARC have seen a reduction in the RCA.

On comparing the ROI and RCA it can be seen that the total number of commodity that have ROI and RCA greater than one are only 33. This is around just 14% of the total number of commodity that have ROI greater than one.

Conclusion

Importance of Intra regional trade as evident from the share that it had in NAFTA and ASEAN has brought forward the issue why the same is not true for SAARC member countries. Share of regional trade has seen a reduction in NAFTA but still it's quite high and shows the importance of trade with the neighbouring countries, going by the gravity model of trade it has been proved that closer countries trade more than the distant partner. Even if bilateral trade share of each country in the other countries export share is considered then it has been proved that although each country trade with the other SAARC countries but the major trade is with only two or three countries as in the case of Afghanistan, Bhutan and Nepal. Finally the regional orientation index has increased from its 2009 level and there is major change in the value of the index. Finally comparing the ROI with RCA there seems no complementarity between ROI and RCA except for few commodities in which the SAARC has higher ROI and at the same time has RCA greater than one.

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Table 1.1: Share in World Exports by Regional Groups

	NAFTA	ASEAN	SAARC
2001	18.82	6.27	0.88
2002	17.28	6.28	0.94
2003	15.55	6.28	1.12
2004	14.54	6.24	1.13
2005	14.26	6.21	1.28
2006	13.97	6.37	1.31
2007	13.41	6.12	1.34
2008	12.81	6.05	1.42
2009	13.01	6.54	1.78
2010	13.04	6.99	1.80
2011	12.64	6.89	2.01
2012	13.10	6.93	1.95
2013	13.01	6.85	2.18
2014	13.35	7.07	2.08

Source: Authors calculation

Table 1.2: Intra Regional Trade Share (%)

	NAFTA	ASEAN	SAARC
2001	46.09	22.43	4.88
2002	45.67	22.92	5.08
2003	44.64	24.71	5.96
2004	43.61	24.69	5.44
2005	42.87	25.33	5.20
2006	41.85	25.10	4.88
2007	40.92	25.39	5.06
2008	39.87	25.30	4.59
2009	39.26	24.65	4.03
2010	40.28	24.68	4.48
2011	40.00	24.12	4.27
2012	40.36	24.44	4.22
2013	41.06	24.31	4.38
2014	41.73	23.73	4.99

Source: Authors calculation

Table 1.3: Country wise share (%) in SAARC Exports								
Year	Afghanistan	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
2001	0.68	1.67	0.81	70.81	0.51	12.07	8.11	5.34
2002	0.63	1.95	0.82	73.59	0.43	8.19	6.57	7.82
2003	1.20	1.57	0.99	69.90	0.28	6.34	13.51	6.21
2004	1.65	2.55	0.76	68.01	0.26	5.11	14.26	7.40
2005	1.29	3.09	2.70	60.80	0.23	4.41	20.23	7.26
2006	1.27	3.36	3.40	64.08	0.19	3.35	18.18	6.16
2007	1.49	5.35	4.69	65.45	0.15	3.95	13.53	5.38
2008	2.63	2.50	3.41	67.15	0.09	4.27	16.23	3.72
2009	2.27	3.10	4.09	62.63	0.13	5.35	18.67	3.77
2010	1.33	2.66	2.22	68.27	0.10	4.00	17.72	3.70
2011	1.27	3.07	1.88	65.47	0.06	3.27	21.43	3.55
2012	1.35	3.38	2.59	68.19	0.07	3.24	17.13	4.05
2013	1.32	2.76	0.61	74.09	0.05	2.67	15.10	3.39
2014	1.35	2.44	0.58	76.74	0.05	2.40	12.51	3.94
Source: Authors calculation								

Table 1.4: Intra SAARC Exports Country wise for the year 2014									
Country	Share (%) in SAARC	Destination							
		Afghanistan	Bangladesh	Bhutan	India	Maldives	Nepal	Pakistan	Sri Lanka
Afghanistan	61.1				28			33	
Bangladesh	2.5				1.9			0.4	0.2
Bhutan	98.2		4.1		93.7		0.4		
India	6.2	0.1	2	0.1			1.3	0.7	2
Maldives	8				2				6
Nepal	68.9	1.8	2.1	0.1	64.8			0.1	0
Pakistan	13.1	7.6	2.8		1.6				1.1
Sri Lanka	9		1		6.5	0.9		0.7	
Source: Authors Calculation									

Table 1.5: Gravity Model Results for NAFTA & SAARC						
NAFTA						
ln_export_value	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
ln_reporter_gdp	1.139814	0.0536492	21.25	0	1.033426	1.246202
ln_partner_gdp	1.309191	0.0536492	24.4	0	1.202803	1.41558
ln_distance	-0.2529387	0.0787231	-3.21	0.002	-0.4090496	-0.0968279
_cons	-42.90933	2.982852	-	0	-48.82444	-36.99422
Rsquared:91.14						
Adjusted R-squared:90.88						
SAARC						
ln_export_value	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
ln_reporter_gdp	1.039073	0.0549472	18.91	0	0.9309546	1.147191
ln_partner_gdp	0.6296758	0.054994	11.45	0	0.5214657	0.737886
ln_distance	-1.085295	0.1991516	-5.45	0	-1.47716	-0.6934301
_cons	-15.90845	2.627361	-6.05	0	-21.07824	-10.73867
Rsquared:59.29						
Adjusted R-squared:58.88						
Source: Authors calculation using ARTNet database.						

S.No.	Table 1.6: Exports & ROI for 2009 & 2013, RCA 2013 of SAARC						
		Export		ROI		ROI	
	HS Code	2009	2013	2009	2013	Change	RCA
1	'8602	0	70779	0	17.14	17.14	1.19
2	'5516	1414	55106	1.27	11.32	10.05	1.2
3	'1101	3187	218925	1.08	9.85	8.78	3.24
4	'8110	0	5359	0	4.99	4.99	4.75
5	'2523	290495	531007	7.6	11.87	4.27	2.91
6	'5207	8600	2816	3.15	7.11	3.96	1.08
7	'5103	380	5518	3.78	7.2	3.42	5.43
8	'2803	10153	38985	1.36	4.75	3.4	1.3
9	'5802	2630	2110	0.36	3.75	3.39	2.65
10	'7224	579	21052	0.36	3.54	3.18	1.43
11	'5206	1196	11857	1.16	4.18	3.02	1.33
12	'3817	12312	16711	2.17	4.97	2.8	1.04
13	'5908	29	691	0.09	2.75	2.66	4
14	'4004	177	1106	0.28	2.58	2.3	1.47
15	'5504	10823	52636	1.89	4.07	2.18	6.07
16	'8410	504	6684	0.32	2.47	2.15	1.3
17	'7117	2918	43680	0.3	2.37	2.08	2.36
18	'2302	19451	27614	6.63	8.69	2.06	1.26
19	'1301	7046	54856	3.03	5.05	2.02	10.41
20	'0804	69774	147457	4.29	6.15	1.87	2.48
21	'3003	63408	117212	1.79	3.6	1.81	1.95
22	'5211	15066	54577	3.1	4.85	1.75	2.94
23	'0813	3456	20893	1.58	3.27	1.69	2.23
24	'2828	1430	3200	1.43	3.1	1.67	1.52
25	'8905	48048	182231	0.84	2.4	1.56	1.52
26	'5104	0	21	0	1.32	1.32	3.68
27	'8437	8104	24763	5.43	6.67	1.24	1.2
28	'3706	643	1218	0.69	1.91	1.22	6.33
29	'5209	265496	760776	6.18	7.37	1.18	9.38
30	'5803	2	150	0.04	1.11	1.07	1.28
31	'5515	22776	93523	1.84	2.87	1.03	6.53
32	'6217	6457	10692	1.7	2.7	1	1.23
33	'3202	3029	9350	1.86	2.86	1	3.34
Source: ITC- Trade Map							