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Formation of BRICS and EU's sanction on Russia yields greater bilateral trade between India and Russia: A structural break analysis

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Abstract

Developing countries at present have diatribe against hegemonic policies of the West. Among them BRICS countries are the strongest group challenging economic policies which are biased towards developed countries. This led to greater export/import momentum among these countries. The present paper examines the impact of formation of BRICS and ongoing rift between Russia and EU on Indo-Russian bilateral trade.

Keywords: Inward looking policies, engine of growth, south-south co-operation, and silk-road

Introduction

India and Russia had very strategic relations including trade since the birth of India. In the respect of political structure, socialism in India was much influenced by the then Russian socialism. Planning in India was much motivated by the planning frameworks in Russia. When India was on the path of setting up strategic key steel industries, Russia transferred its technology which enabled India to stand on its leg for self-production of steel. In the case of Indo-Russian bilateral trade, India's export basket mainly comprised agro based goods and the import basket consisted of hi-tech machinery goods. During this period, both the countries adopted "Inward Looking Policies" where foreign trade was discouraged and imports were substituted with domestic production. However, over the period of time, they experienced obsolete technology which led to inefficient systems of production. However, during post globalisation of these economies in the 1990s, these countries had alternative views. They considered foreign trade as "Engine of growth" rather than an exchange earning tool. Globalisation enabled many economic sectors to global FDI inflows which equipped domestic firms with modern latest technology of production (Rangarajan). In the international forum both the countries are leading members of developing countries. Moreover, they form the exclusive group of BRICS (Brazil, Russia, India, China and South Africa) which is challenging the West in many spheres including trade with mutual cooperation. Recently Russia had political conflict with European Union (EU) and USA regarding the merge of Crimea (province of Ukraine) with Russian Federation in 2014 due to which the west pressed hard economic sanction on Russia in many economic sectors including trade. This resulted in Russia to foster its economic relation with member countries of BRICS which changed the direction of trade from the West towards the latter. The present paper deals with Indo-Russian bilateral trade in its latest trend and is classified further into five sections. Section I itself is introduction; section II is details on India and Russia in international forum; section III gives methodology of this paper; section IV deals with data analysis; and section V is conclusion of the present paper.

Section II: India and Russia in international forum

Both India and Russia are members of many international forums such as WTO, UNCTAD, G-20, etc. However, the present study deals with international forums which work parallel to west led international forums. The most efficient international forum which is fulfilling the above criteria is BRICS that comprises Brazil, Russia, India, China and South Africa.

It was coined by Jim O'Neill (2001) ^[2] who was the former Chief Economist and Chairperson of Goldman Sachs Asset Management with the aim of attracting investors to developing countries led global platform. The first meeting was held on 23 September 2006,

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on the occasion of the LXI Session of the General Assembly of the United Nations (UN), where the members of the BRICS economic bloc secretly initiated. The goal was to consult views on the possible formation of a discussion forum that would be set up by conferences commencing during 2008. The first meeting of Foreign Affairs Ministers of the BRICS countries was held on 16 May 2008 at the Ministerial Meeting of Yekaterinburg, Russia. The Joint Declaration laid the platform among the member countries and the foundations for an agenda of political cooperation. BRICS aimed at solving issues such as hunger, disease and the sustainability of the global economy; support for political and diplomatic efforts for the peaceful resolution of disputes in the area of international relations; and promotion of ‘South–South cooperation’ for developing nations. On 26 March 2010, the ministers of Agriculture of the BRICS Nations signed a joint declaration creation of an agricultural information base system of the BRICS countries; development of a general strategy for ensuring access to food for the most vulnerable population; reduction of negative impact of climate change on food security and adaptation of agriculture to climatic changes; and enhancement of agricultural technology. Article 14 of the BRICS joint declaration mentions the importance of the multilateral trading system, embodied in the World Trade Organization, for providing an open, stable, equitable and non-discriminatory environment for international trade. They resisted all forms of trade protectionism and fight disguised restrictions on trade. They also consulted on the comprehensive and balanced outcome of the Doha Round of multilateral trade talks, in a manner that fulfils its mandate as a ‘development round’, based on the progress already made, including with regard to modalities. On 14th December 2011, BRICS opined their obligation to the trade regime of the WTO and with the Doha Development Agenda, the requirement for strengthening the foundations of multilateral trade in the interests of developing countries. Trade among the BRICS has been galvanized by rifts between the West and Russia on the issue of political turmoil in Ukraine in the wake of 2014 wherein Crimea, one the provinces of Ukraine, merged with Russia. This led to western countries including the USA imposing sanctions on the bilateral trade between the EU and Russia. Earlier, Russia imported goods ranging from agro based to hi-tech from the EU whereas, in turn the former exported commodities mainly petroleum, natural gas, chemical and metals to the later. Russia has directed its export-import destination to the East and South Asia and Latin American countries (mainly BRICS countries). China became main the importer of Russian gas; India increased its dependency of oil on Russia; and Brazil became the top exporter of dairy products to Russia.

Another international forum where Russia and India actively participate is Asian Infrastructure Investment Bank (AIIB). The main motive behind the establishment this bank was to counter the hegemonic dominance of voting rights by western countries in institutions such as IMF and WDB. On a State visit to Indonesia in October 2013, Chinese President Xi Jinping proposed the establishment of a new multilateral bank, focused on the development of infrastructure in Asia. Just over a year later, after five formal consultation meetings with interested parties, 21 Asian countries signed a memorandum of understanding supporting the establishment of the bank on 24 October 2014. Nine months after that,

following five chief negotiators’ meetings, the Articles of Agreement for the bank was signed in Beijing by Finance Ministers or their representatives. Over that time the number of prospective founding members of the bank had almost tripled to 57. By October 2015, 53 countries had signed the Articles of Agreement (Vera, *et al.*)^[4]. The AIIB is scheduled to become operational before 2016. China’s motivation behind the AIIB proposal is best explained in the context of its ‘Silk Road economic belt’ and ‘21st century maritime Silk Road’ (together, ‘one belt, one road’) Initiatives. The crux of the Silk Road proposal was that transport costs and connectivity, not tariffs, had become the major impediment to intra-regional trade. Presently the bank is assumed to invest in the infrastructural projects of trans-highways; and bridge Russia and India through these highways to boost bilateral trade.

Section III: Methodology of paper

Three methodologies namely Compound Growth Rate, Trade Deepening Index, and Structural Break points are employed in analyzing data in this paper. Nutshell details on the above mentioned methodologies are highlighted hereunder.

Compound growth rate is employed in analyzing annual export-import data of Indo-Russian bilateral trade.

$$Y_0(1+r)^n = YY_0(1+r)^n = Y$$

$$\ln Y = \ln Y_0 + n \ln(1+r)$$

Where, Y_0 = Value of initial year; Y = the last year; r = annual growth; n = No. of years

Now, let $\beta = \ln(1+r)$, applying Antilog $\beta = (1+r) \rightarrow r = \text{antilog}(\beta-1)$ is compound growth rate

Trade deepening (TD) Index is useful in analyzing intensity of bilateral trade with respect to trade of a country with the Rest of the World (RoW). The equation of Trade Deepening is given

$$\text{Trade deepening} = \left\{ \frac{(X_{\text{Ind-Rus}} + M_{\text{Ind-Rus}})}{(X_{\text{Ind-World}} + M_{\text{Ind-World}})} \right\}$$

Where

$X_{\text{Ind-Rus}}$ = India’s export to Russia

$M_{\text{Ind-Rus}}$ = India’s import from Russia

$X_{\text{Ind-World}}$ = India’s export to World

$M_{\text{Ind-World}}$ = India’s import from World

Structural Break point is the main analysis in this paper which is expected to show sudden change in the trend of India-Russian bilateral trade. It was proposed by Zivot^[1] and Andrews^[2] (1992) who coined the break point ‘endogenously’ from a time series data. The null hypothesis, these endogenous tests assumes no breaks in data. On the other hand this null hypothesis mentions about data being

¹ Zivot: Eric Zivot ithe Robert Richards Chaired Professor in Economics Department, Adjunct Professor of Statistics, and Adjunct Professor of Statistics of France.

² Andrews: Andrew K. Rose is Jr. Professor of International Business in the Economic Analysis and Policy Group, Haas School of Business at the University of California, Berkeley.

stationary that means there is no unit root. If the calculated value of t-statistics is greater than critical value (given table value of t-statistics) or probability value of trend is less than five percent, then the null hypothesis has to be rejected. In other words, we have to conclude there is a structural break in the trend. In order to find breakpoints, Zivot-Andrews unit root test is run using Eviews-8.

Section IV: Data analysis

Indian economy had similar economic policy with Russia during the erstwhile Soviet period. During the period, both the countries considered foreign trade as an engine for exchange earning rather than an engine of growth. Import substitution programmes were very popular with establishment of many key industries in both countries. However in these periods, both experienced inefficiencies in the economy due to mismanagement of resources and outdated technology of production which resulted in severe exchange crisis. In the wake of the 1990s USSR collapsed and emerged as federal Russia. Simultaneously Indian economic policy (closed economy) also collapsed and both the countries adopted globalisation in their economic policies with privatisation of many economic sectors except core sectors. With the welcome of Foreign Direct Investment (FDI), India and Russia started setting up various firms managed by foreign investors with the goal of foreign trade as “Engine of Growth”. Hence, in the bilateral trade between India and Russia, the new trend started from Heckcher-Ohlin³ trade to Intra Industry Trade⁴ (IIT). However, Indian export trend had almost constant pace till 2009 since then it moves in the increasing trend which was considered as the result of the formation of BRICS. But, unluckily the sharp decline in export has emerged due to severe economic downturn of Russia which followed after sanction by western countries. Following figure1 shows the trend of India’s export to Russia and found that it has a compound growth rate of 5.02 percent during 1995 to 2015.



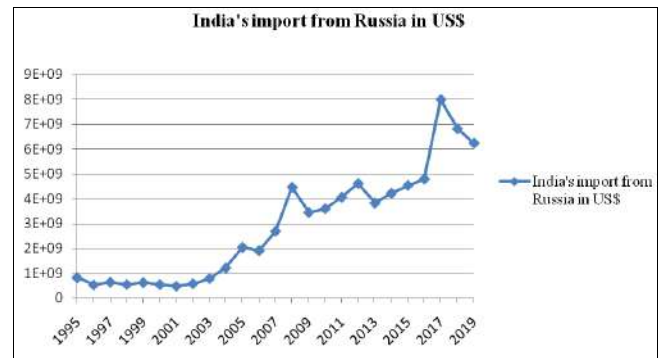
Source: Author’s drawing from UN Com trade data

Fig 1: India’s export to Russia

Unlike Export, India’s imports from Russia has a sharp increase since 2003 despite fluctuations. Import experienced a constant trend in the period from 1995 till 2002 with compound growth rate by 14.2 percent and followed by sharp rise. India’s import basket mainly comprises manufactured goods including Hi-tech defence hardware

³ Heckcher-Ohlin: Modern trade theory which states that capital abundant countries export capital intensive goods and labour abundant countries export labour intensive goods.
⁴ IIT: Trade between same industries.

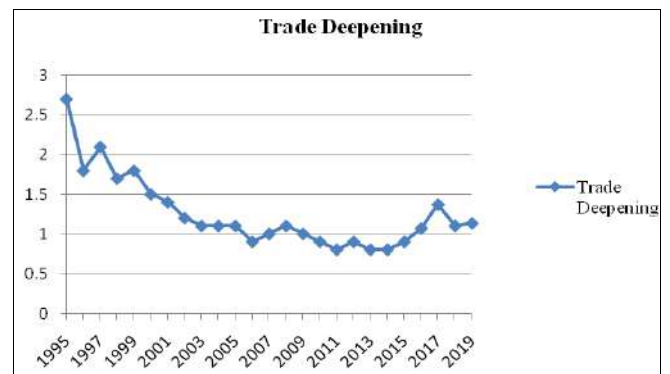
and machines. Formation of BRICS is expected to exert thrust in import and is compounded further by the rift between the West and the East which yields in burgeoning medium for stronger cooperation among the Eastern bloc. Figure2 shows the trend of India’s import from Russia in US\$.



Source: Author’s drawing from UN Com trade data

Fig 2: India’s import from Russia

However, export/import growth rates are not sufficient to explain the intensity of bilateral trade between India and Russia. Trade Deepening Index which is explained in the above can explain the intensity of such bilateral. The following figure3 shows Trade Deepening of India-Russia bilateral trade.



Source: Author’s drawing from UN Com trade data

Fig 3: Trade deepening trend

Trade Deepening shows that India-Russia bilateral trade has declining trend till 2013. The reason for decline is India has been diversifying its trade relation on multilateral basis which resulted in decline of this trend as flat U-shape. Impressively there has been upturn in this trend since 2013 which is coincides with the formation of BRICS, AIIB, and imposition of sanctions on Russia by the West. The upturn of this trend has to be checked further with structural break analysis to identify its significance.

To employ structural break analysis, this paper uses monthly data from 2013 to 2015 (Table 2 in Appendix) in order to find the accurate month since then structures of bilateral export/import have major changes. There are thirty-six monthly bilateral trade data and in order to remove errors, natural log functions of both export/import have been calculated.

In the case of India’s export to Russia, there are two periods (table3 in Appendix) namely 2013M01 - 2014M12 and 2015M01 - 2015M12. But the first period has lesser t-statistics (643 with probability of 0.00) than the second

period (t-statistics 715 with probability of 0.00). Hence, there is a structural break point in 2015M1 (January 2015). This structural break point is meaningfully coinciding with sanctions of USA and EU members on their bilateral trade with Russia. During the pre-Ukrainian conflict, Russia was the main export destination for these countries with goods ranging from agro based to machinery goods. But their sanctions did not permit them to export these goods further in the post Ukrainian conflict. Hence, Russia has to look forward to its close ally i.e. BRICS in order to compensate against sanction and BRICS members (here India) have a

chance to intensify their export to Russia.

Whereas India's export to Russia also, there are two periods (table4 in Appendix) namely 2013M01 - 2013M05 and 2013M06 - 2015M12. The first period has greater t-statistics (642 with probability of 0.00) than the second period (t-statistics 516 with probability of 0.00) giving structural break points in 2013M06 (June 2013). This structural break point was found lagging one year after the Delhi Declaration and Action Plan on trade in 2012 for BRICS members. This commonly agreed action plan intensifies bilateral trade among members so as India-Russian bilateral import also.

Table 1: Indo-Russian trade statistics

Year	India's export to Russia in US\$	India's import from Russia in US\$	Indo-Russian total trade	India's export to RoW	India's import from RoW	India's total trade with RoW	Trade deepening
1995	1041825856	822818688	1864644544	31,69,85,67,168	36,59,20,62,464	68,29,06,29,632	2.7
1996	811118818	527580986	1338699804	33,46,85,91,194	39,11,28,14,392	72,58,14,05,586	1.8
1997	953198272	642261056	1595459328	34,79,37,50,528	41,42,94,30,272	76,22,31,80,800	2.1
1998	709173632	546035200	1255208832	33,20,73,24,672	42,42,49,50,784	75,63,22,75,456	1.7
1999	953611285	625594516	1579205801	36,91,99,77,135	50,01,08,98,627	86,93,08,75,762	1.8
2000	855661130	543380387	1399041517	42,35,80,96,158	52,94,02,51,405	95,29,83,47,563	1.5
2001	839594989	478585582	1318180571	43,87,84,88,724	50,67,11,05,810	94,54,95,94,534	1.4
2002	738357038	578496948	1316853986	50,09,79,58,247	57,45,34,68,557	1,07,55,14,26,804	1.2
2003	696329550	784894601	1481224151	59,36,06,59,088	72,43,05,24,382	1,31,79,11,83,470	1.1
2004	631196447	1215045345	1846241792	75,90,42,00,367	98,98,11,29,472	1,74,88,53,29,839	1.1
2005	705685224	2036952426	2742637650	1,00,35,26,36,503	1,40,86,16,66,918	2,41,21,43,03,421	1.1
2006	845710910	1900856895	2746567805	1,21,20,06,06,221	1,78,21,24,40,308	2,99,41,30,46,529	0.9
2007	924103253	2684488334	3608591587	1,45,89,80,53,464	2,18,64,52,93,931	3,64,54,33,47,395	1.0
2008	1090744013	4451326284	5542070297	1,81,86,08,98,300	3,15,71,21,05,614	4,97,57,30,03,914	1.1
2009	964356844	3437687124	4402043968	1,76,76,50,36,339	2,66,40,15,52,908	4,43,16,65,89,247	1.0
2010	1393223349	3591553188	4984776537	2,20,40,84,95,991	3,50,02,93,86,927	5,70,43,78,82,918	0.9
2011	1893901199	4050976235	5944877434	3,01,48,32,50,168	4,62,40,27,90,771	7,63,88,60,40,939	0.8
2012	2144765774	4602155656	6746921430	2,89,56,47,69,447	4,88,97,63,78,496	7,78,54,11,47,943	0.9
2013	2418963217	3814120041	6233083258	3,36,61,13,88,774	4,66,04,55,67,333	8,02,65,69,56,107	0.8
2014	2217472852	4207628765	6425101617	3,17,54,46,42,257	4,59,36,94,63,603	7,76,91,41,05,860	0.8
2015	1611893266	4527090538	6138983804	2,64,38,10,03,631	3,90,74,47,31,405	6,55,12,57,35,036	0.9
2016	1,813,884,254	4,782,004,793	6,595,889,047	260,326,912,335	356,704,792,107	617,031,704,442	1.07
2017	2,138,971,950	7,980,558,686	10,119,530,636	294,364,490,162	444,052,353,836	738,416,843,998	1.37
2018	2,334,070,585	6,801,024,922	9,135,095,507	322,492,099,897	507,615,733,027	830,107,832,924	1.10
2019	2,871,228,560	6,226,189,464	9,097,418,024	323,250,726,424	478,883,729,111	802,134,455,535	1.13

Source: Author's own collection and calculation from UN Comtrade data

Table 2: India's monthly bilateral trade with Russia

Year-month	India's monthly import Russia	India's monthly export to Russia
2013M1	287142723	181558809
2013M2	206964157	233498574
2013M3	302041573	209215817
2013M4	258879927	170181095
2013M5	260044251	175851370
2013M6	432025105	184183207
2013M7	391826456	183779550
2013M8	250867266	182775454
2013M9	310003915	175789909
2013M10	330965415	156847527
2013M11	272960941	139859910
2013M12	470897293	211658850
2014M1	301266854	188156042
2014M2	328062415	158142928
2014M3	280954944	214218005
2014M4	454264993	177236286
2014M5	473097739	170047524
2014M6	364775778	164843518
2014M7	343455301	217329814
2014M8	339943569	189902265
2014M9	371222909	164932213
2014M10	382770574	163041829
2014M11	320404129	150230203
2014M12	256136216	257353623

2015M1	342032710	122206425
2015M2	198342500	115238595
2015M3	396807234	202997495
2015M4	350450424	119002537
2015M5	388001540	109130400
2015M6	494806418	129255820
2015M7	410604292	130778797
2015M8	366370842	121801737
2015M9	423411024	147539178
2015M10	320334908	140481696
2015M11	350700249	120376105
2015M12	466977440	148226931

Source: Author's own collection from UN Comtrade data

Table 3: Structural break table of Indian export to Russia

Dependent variable: LNEXPORT				
Method: Least squares with breaks				
Date: 09/17/16 Time: 22:45				
Sample: 2013M01 2015M12				
Included observations: 36				
Break type: Fixed number of sequentially determined breaks				
Breaks: 2015M01				
HAC standard errors & covariance (Pre-whitening with lags from AIC maxlags, Quadratic-spectral kernel, Andrews bandwidth)				
Allow heterogeneous error distributions across breaks				
Variable	Coefficient	Std. error	t-statistic	Prob.
2013M01 - 2014M12 -- 24 obs				
C	19.02131	0.029554	643.6201	0.0000
2015M01 - 2015M12 -- 12 obs				
C	18.69916	0.026137	715.4184	0.0000
R-squared	0.515899	Mean dependent var		18.91393
Adjusted R-squared	0.501660	S.D. dependent var		0.214427
S.E. of regression	0.151371	Akaike info criterion		-0.884212
Sum squared resid	0.779049	Schwarz criterion		-0.796239
Log likelihood	17.91582	Hannan-Quinn criter.		-0.853507
F-statistic	36.23323	Durbin-Watson stat		2.364260
Prob (F-statistic)	0.000001			

Source: Author's own calculation from UN Comtrade data

Table 4: Structural break analysis of India's import from Russia

Dependent variable: LNIMPORT				
Method: Least squares with breaks				
Date: 09/17/16 Time: 22:56				
Sample: 2013M01 2015M12				
Included observations: 36				
Break type: Fixed number of sequentially determined breaks				
Breaks: 2013M06				
HAC standard errors & covariance (Pre-whitening with lags from SIC maxlags, Quadratic-spectral kernel, Andrews bandwidth)				
Allow heterogeneous error distributions across breaks				
Variable	Coefficient	Std. error	t-statistic	Prob.
2013M01 - 2013M05 -- 5 obs				
C	19.37957	0.030144	642.9059	0.0000
2013M06 - 2015M12 -- 31 obs				
C	19.68354	0.038120	516.3575	0.0000
R-squared	0.221956	Mean dependent var		19.64132
Adjusted R-squared	0.199073	S.D. dependent var		0.226292
S.E. of regression	0.202519	Akaike info criterion		-0.302016
Sum squared resid	1.394471	Schwarz criterion		-0.214043
Log likelihood	7.436287	Hannan-Quinn criter.		-0.271311
F-statistic	9.699336	Durbin-Watson stat		1.947345

Source: Author's own calculation from UN comtrade data

Section V: Conclusion

This paper shows that there are increasing growths of Indo-Russian bilateral trade. However, this bilateral trade is found decreasing trade deepening since they adopted globalisation of their economies. The reason is confirmed due to diversification of India's bilateral relations with many countries. However, formation of BRICS, AIIB, etc. enhances bilateral trade between India and Russia defending themselves against the discriminatory policies imposed by the developed western countries.

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