Trade Potential of India against BRCS Economies: An empirical analysis based on Gravity Model

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Abstract

In regard to possibilities and limits of meaningful alliances among emerging economies, this article sheds light on the potential of trade of India against BRCS economies by employing the famous Gravity Model. The study period is covering 22 years from 1995-2016. The gravity models for both 1995 and 2016 fit the data well and explain 75 percent and 76 percent of the variation in bilateral trade across sample of countries, respectively. The results are hetero-corrected, multicollinearity and auto correlation free. The coefficient of product of GDP, per capita GDP, and openness variable are positive and highly significant as expected whereas the dummy variable, RTA, is not found significant. The per capita GDP differential has negative and statistically significant effect on bilateral trade flows for both 2016 and 1995 data and support the Linder hypothesis. Furthermore on introspection related to data of BRICS foreign trade, some problems as well as the achievements of the BRICS in its foreign trade have come into limelight. The results show that considerable potential exists on individual country basis. Thus, India needs to concentrate on trade from emerging countries that are liberalizing their markets for economic expansion, which could form important boulevard for exports.

JEL Classification: F1, F12, O24

Keywords: BRICS, Gravity model, Trade, RCA and RID

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1. Introduction

It is of significant importance that each country may know its full trade potential with other countries or other regions in order to get the engagement process started. India also needs to know its full trade potential with other countries or regions. The policy of trade liberalization started in July 1991, led to the performance of the India's trade sector. Following this panorama, foreign reserves are accumulating; current account deficits have sharply fallen and a substantial surplus in invisible trade appear to be a sign of improving economic health. In order to meet the growing domestic demand, imports of consumer goods are also indispensable. Export trade is decisive to convene the foreign exchange and to reduce reliance on foreign aid. The foreign trade sector of India constitutes an important part of its economy. The trade-GDP ratio increased to 39.81 per cent in 2016 from 23.11 per cent in 1995. The contraction of India's merchandise trade, both exports and imports, from December 2014 is a worrying development, even if it has led to a temporary improvement in trade balance. The substantial decline in international oil prices, and its direct impact on value of trade, explains this fall only partially (Mazumdar, 2015). In addition, India's shares in world's exports, imports and total trade are still very low and look unimpressive when compared with other countries including its Asian neighbors. In 2007, India's exports, imports and trade shares in the world were 1.0 percent, 1.2 percent and 1.1 percent, respectively. Therefore, India must increase its trade volume with the rest of the world for the sake of healthy economy. Hence this article makes an endeavor on estimation of India's trade potential with BRCS economies and to categorize the commodities according to their trade potential that could enhance trade relations between India and rest BRCS economies. In the process of estimation of India's trade potential, generalized gravity model has been employed and for identification of commodities RCA and RID indices are put into action.

The organization of the rest article is as follows: section 1.1 provides trade potential of India against BRCS economies; section 1.2 depicts the identification of potential commodities between India and BRCS economies and lastly, section 1.3 brings out the overall conclusions with the necessary policy implications.

1.1: Trade Potential of India against BRCS Economies

In the recent years, the gravity model has become a workhorse for quantitative studies of international trade and investment policy (Eichengreen and Irwin, 1998). Gravity model is a widely used popular empirical tool for analyzing bilateral trade flows. The model is employed to first analyse the India's trade flows to BRCS for the year 1995 and 2016. The coefficients thus obtained from the estimated gravity models are then used to predict India's trade potential.

1.2.1: Theoretical Justification

The main limitation of trade theories is that they are not able to explain that why some countries trade links are stronger than others and how the level of trade increases or diminishes over time. Since trade theories are successful in explaining why countries trade in different products, but some important constituents are out of explanation. This is the main limitation of trade theories in explaining the size of trade flows. As classical theories of trade are not able to elucidate the degree of trade, the gravity model is a helping tool. It allows more factors to be taken into account to explain the extent of trade as an aspect of international trade flows (Paas, 2000). Regarding Gravity model, so many justifications and explanations were given like (Linneman 1966: Anderson, 1979). Further justification for the gravity model approach is based on the Walrasian general equilibrium model, with each country having its own supply and demand functions for all goods. Eaton and Kortum (1997) also derived the gravity equation from a Ricardian framework, while Deardorff (1998) derived it from H-O perspective. Their results showed that much intra-industry trade is specific to country pairings. So their work supported a model of trade with monopolistic competition (Jakab *et al.* 2001).

1.2.2: Data, Methodology, Model Selection, Estimation and Econometric Issues

A) Data and Sample Size

This section portrays India's trade with BRCS countries. The share of the BRICS in global trade continued to grow at a rapid pace. Their share in world exports increased substantially over the past decade mostly through broad-based diversification, both in commodities and regions of trade, while imports witnessed a sharp rise that was driven by increased investment and consumption demand led by the increasing purchasing power of these economies. All the BRICS economies maintained persistent trends of rising share of exports in GDP, reflecting the structural transitions witnessed by these economies in exploring avenues for

exports based on comparative advantage and supported by productivity gains. In 2010, India's share in global trade was 1.8 per cent which increased to 2.8 per cent in 2016. Exports of BRICS economies together comprise 15.7 per cent of total world exports.

The data is pertaining to 1995 and 2016 and all the observations are yearly. The variables included are GDP, GDP per capita, total exports and total imports, Data on India's exports of goods (country i's exports) to all other countries (country j), India's imports of goods (country i's imports) from all other countries (country j) and India's total trade of goods (exports plus imports) with all other countries included in the sample are obtained from the UNCOMTRADE, IMF, World Bank, Direction of Trade Statistics Yearbook (1995 and 2016) of IMF. Data on the distance (in kilometer) between New Delhi (capital of India) and other capital cities of country are obtained from respective directories of governments. GDP, GDP per capita are in constant 2010 US dollars. GDP, total exports, total imports, India's exports, India's imports and India's total trade are measured in million US dollars.

B) Methodology and Selected Model

In order to study the bilateral trade patterns and relationships, there are various modes of applied research, and one among them is the famous gravity model. It can be used both for aggregate bilateral trade and for product level trade. The data employed can be both the cross - section as well as panel data. There are famous studies which have tried to examine the trade latency, determinants, direction and trade enhancing impacts (like Oguledo and Macphee 1994; Christie, 2002; Hassan, 2000 and 2001; Batra, 2006 and Rahman, 2009) etc. The description is that the flow of the trade between two countries is comparative to the product of each country's 'economic mass', generally measured by GDP (national income) and inversely proportional to the distance between the countries' respective 'economic centers of gravity', generally their capitals. It can be generalized as

$$Trade_{ij} = \alpha\, Y_i Y_j / D_{ij} \quad \text{---------- (1)}$$

$Trade_{ij}$ represents the bilateral trade between country i and j, Y_i and Y_j denotes country i's and country j's GDPs, and D_{ij} defines geographical distance whereas α is a constant.

Representing the above equation I in logarithmic form, the equation takes the form as:

$$\text{Log } (\text{Trade}_{ij}) = \alpha + \beta \log (\text{YiYj}) + \delta \log (D_{ij}) \text{ ---------- (2)}$$

α, β and δ are coefficients to be estimated. The baseline model is Equation (2) and expectation is that the bilateral trade flow has positive function with income and negative function of distance. Still there are other factors that impact trade levels and thus other factors are also taken into consideration. Even in most estimates of gravity models, dummy variables are added that test for specific effects, like trade agreement, common land border sharing, speaking the same language and so on.

Thus to check for many diverse effects, the model becomes:

$$\text{Log } (\text{Trade}_{ij}) = \alpha + \beta \log (\text{YiYj}) + \delta \log (D_{ij}) + \sum_{s=1}^{n} \lambda s Gs \text{ ---------- (3)}$$

B) Methodology and Selected Model

Regarding estimation purposes (Frankel, 1997; Batra, 2004; Rahman, 2009; Sharma and Chua, 2010; and Wani et.al., 2016) models of gravity model have been employed. The extraneous variable is bilateral trade between the pairs of countries, whereas the independent variables are the product of GNP/GDP, product of per capita GNP/ GDP. Further several breaking in variables have been also included. Thus the gravity model of trade in this study is:

$$\text{Log } (\text{Trade}_{ij}) = \alpha_0 + \alpha_1 \log (\text{GDP}_i * \text{GDP}_j) + \alpha_2 \log (\text{PCGDP}_i * \text{PCGDP}_j) + \alpha_3 (\text{TR/GDP}_j) + \alpha_4 \log (\text{Distance}_{ij}) + \alpha_5 (\text{RTA}) + U_{ij} \text{ (4)}$$

Now, Trade_{ij} = Value of total trade between India (country i) and country j, GDP_i (GDP_j) = Gross Domestic Product of country i (j), PCGDP_i (PCGDP_j) = Per capita GDP of Country i (j), TR/GDP_j = Trade- GDP ratio of country j, Distance_{ij} = Distance between country i and country j, RTA = Regional trading agreement (dummy variable), and U_{ij} = error term, α_s = parameters and we expect positive signs for α_1, α_2, α_3, and α_5 and a negative sign for α_4.Furthermore, per capita GDP differential is used as a variable instead of per capita GDP. The substitute model is as follows:

$$\text{Log } (\text{Trade}_{ij}) = \alpha_0 + \alpha_1 \log (\text{GDP}_i * \text{GDP}_j) + \alpha_2 \log (\text{PCGDPD}_{ij}) + \alpha_3 (\text{TR/GDP}_j) + \alpha_4 \log (\text{Distance}_{ij}) + \alpha_5 (\text{RTA}) + U_{ij} \text{ (5)}$$

C) Estimation

For the estimation purposes, two step estimation strategies have been employed to explore India's global trade potential. In the first stage, equation (4) and equation (5) have been estimated by using OLS estimation technique with cross section data for the year 1995 and 2016 covering 5 countries including India. The extraneous variable is the total bilateral trade of country i (India) and country j (India's trading partner) and the value is in log form. The coefficients obtained in first stage have been employed in the second stage to compute the predicted bilateral trade of India with its 4 trading partners. These predicted trade values are then analysed and evaluated with the actual trade values to explore India's global trade latency (potential).

E) Econometric Issues

In order to avoid the basic econometric issues, proper due care and concern has been given to solve the problems. The problem of endogeneity has been solved by alternative instrumental variable (IV) estimations (lagged value of income and population), as suggested by Anderson (1979) and does not change the coefficient of any of the variables to any significant extent. This implies that the endogeneity of income, if exists at all, does not create any significant distortion on the initially postulated relationship in the gravity model. Thus, GDP and GDP per capita are treated as exogenous variables in the estimation. Further all variables are tested for multicollinearity. Simple correlations as well as Klein's thumb rule have been used to test for multicollinearity in our specification. Simple correlations are small as seen in Table 1.

Table 1: Simple correlations of variables based on 2016 data

	Trade	GDP	PCGDP	PCGDPDiff	TRGDP	Popn	Dist	RTA
Trade	1							
GDP	0.45	1						
PCGDP	0.15	0.26	1					
PCGDPDiff	-0.14	-0.21	-0.61	1				
TRGDP	0.18	-0.46	0.18	-0.19	1			
Popn	0.35	0.63	-0.5	0.28	-0.39	1		
Dist	-0.23	0.56	0.45	-0.38	-0.28	0.15	1	

RTA	0.06	-0.46	-0.2	0.15	0.03	-0.32	-0.71	1
Clang	0.33	-0.08	-0.09	0.07	0.25	0.09	-0.27	0.25

Source: Calculations obtained through E-Views 4.0 by employing data from Uncomtrade.

To apply Klein's thumb rule each independent variable of the model is regressed on the remaining independent variables and R_i^2's are computed. If any of these R_i^2's is greater than the original R^2, then it can be concluded that there is severe multicollinearity in the model. From the results we observe that the model does not have any multicollinearity problem. In order to check the Heteroscadasticity in the model, regression is run considering the heteroscadasticity for every observation and all observations within groups. Regression results reported here are heteroscadasticity free as seen from Table 2 and 3.

1.2.3: Discussion of Results

Table 2 and 3 present the OLS estimate results of the augmented gravity models for 1995 and 2016 data. Table 4 describes the results of model 4; in which per capita GDP variable is regarded as an independent variable and Table 3 exhibit the estimated results of model 5 where per capita GDP differential variable is representing as regressor.

I) Gravity model estimation results using per capita GDP variable (Model 4)

It is clear from table 1.2 that the gravity models fits well for both 1995 and 2016 data and explain 75 percent and 76 percent of the variation in bilateral trade across sample of countries. As the results are already free from econometric issues and the coefficient of product of GDP is positive and highly significant as expected. This implies that India tends to trade more with these economies. India's bilateral trade with country j increases by 0.81 per cent as the size of the country (GDP/output) is increased by 1 per cent. Per capita GDP also affects India's bilateral 1995 trade positively and significantly though this variable was not found significant for 1995 data. The coefficient of this variable is 0.17 for 2016 data indicating that 1 percent increase of per capita income of trading pair increases bilateral trade by 0.17 percent. The openness variable also affect India's bilateral trade positively and more than proportionately [exp (.1) = 1.11]. This variable is found statistically significant. The estimated coefficient on distance variable has the anticipated negative sign and it is -2.15 and -2.01 for 2016 and 1995 data, respectively. This variable is found highly statistically

significant. The results indicate that for every 1 percent increase in the distance between the trading pairs, bilateral trade falls by 2.15 percent and 2.01 percent respectively. The dummy variable, RTA, is not found significant.

Table 2: Hetero corrected trade models for 2016 and 1995 with per capita GDP variable. Dependent variable is log (Tradeij)

Variables	Trade Model 05	Trade Model 01
	Coefficients (t-ratios)	Coefficients (t-ratios)
Log (GDP_i*GDP_j)	0.81 (7.99)	0.81(12.24)
Log (PCGDPi*PCGDPj)	0.17 (1.90)	0.08(0.91)
$(TR/GDP)_j$	0.01 (2.12)	0.01 (2.75)
Log(Distance)	-2.15 (-7.82)	-2.01 (-7.31)
RTA	-0.07 (-0.13)	0.26(0.58)
R^2	0.75	0.76
F	21.45	21.61
DW	2.22	2.00
Observations	4	4

Source: Calculations obtained through E-Views 4.0 by employing data from Uncomtrade.

II) Gravity Model Estimation Results Using Per Capita GDP Differential Variable (Model 5)

The estimated coefficients in this model also portray similar results as in model 4 (see Table 3). The per capita GDP differential has negative and statistically significant effect on bilateral trade flows for both 2016 and 1995 data. So the estimated results support the Linder hypothesis, i.e. similar countries trade more than dissimilar ones. The coefficients of this variable are -0.17 and -0.23 for 2016 data and 1995 data, respectively. The implication is that 1 percent increase of per capita income differential between pair of countries results in 0.17 percent and 0.23 percent decrease of bilateral trade.

Table 3: Hetero corrected trade models for 2016 and 1995 with per capita GDP differential variable. Dependent variable is log (Tradeij)

Variables	Trade Model 05	Trade Model 01
	Coefficients (t-ratios)	Coefficients (t-ratios)
Log (GDP_i*GDP_j)	0.81 (8.29)	0.81(13.46)
Log (PCGDPi*PCGDPj)	-0.17 (-2.10)	-0.23(-2.54)
$(TR/GDP)_j$	0.01 (2.22)	0.31 (3.05)
Log(Distance)	3.15 (-8.82)	-2.91 (-9.31)
RTA	0.67 (0.43)	0.36(0.57)
R^2	0.75	0.76
F	37.15	21.51
DW	2.20	2.83
Observations	4	4

Source: Calculations obtained through E-Views 4.0 by employing data from Uncomtrade.

1.2.4: India's Trade Potential

From the estimated results of the gravity model, the trade potential of India against BRCS has been evaluated. The estimated coefficients obtained in previous section have been used to predict India's trade potential. The procedure of calculating the trade potential is by dividing the predicted trade value (P) with actual trade value (A) and if the value is greater than one then there is trade potential and chances of trade expansion. Another observation is by using the value of (P-A) in order to classify countries with potential for expansion of trade with India. A positive value implies future possibilities of trade expansion while a negative value indicates India has already exceeded its trade potential with the particular trading partner (Rahman 2009, Wani et al, 2016). Gull and Yasin (2011) also attempted to estimate Pakistan's trade potential, using the gravity model of trade. Panel data for the period 1981-2005 across 42 countries had been employed in the analysis. The coefficients obtained from the model were then used to predict the country's trade potential worldwide as well as within specific trading regions. Same is the nature that on the basis of the value of (P-A) and (P/A), the India's trading partners are divided into two groups: (I) those with which potential for trade expansion is visible and those with which India has already exceeded its trade potential. These two groups of countries are presented in Tables 4 - 11 on the basis of 2016 and 1995 data and inclusion of per capita GDP / per capita GDP

differential variable. Table 12 and 13 present the summary results of Table 4 - 11 where countries of trade potential and overtraded countries are noted.

Table 4: Trading partners with trade potential based on 2016 data with per capita GDP variable

Countries	Trade (P-A) US$ M	Trade (P/A)
India Brazil	1423.635174	5.131012
India Russia	4014.8480086	2.714248
India China	9874.23145	1.348007
India South Africa	101.00598208	2.863521

Source: Calculations based on data from Uncomtrade.

Note: P = Predicted, A = Actual

Table 5: Overtraded partners based on 2016 data with per capita GDP variable

Countries	Trade (P-A) US$ Mn	Trade (P/A)
India Brazil	-210.7139033	0.88048
India Russia	-65.42190599	0.880399
India China	-18958.86377	0.331634
India South Africa	-96.22958209	0.888494

Source: Calculations based on data from Uncomtrade.

Note: P = Predicted, A = Actual

Table 6: Trading partners with trade potential based on 1995 data with per capita GDP variable

Countries	Trade (P-A) US$ Mn	Trade (P/A)
India Brazil	644.7918181	6.158335
India Russia	209.0462758	1.708631
India China	70.36598545	1.339932
India South Africa	533.175536	2.033286

Source: Calculations based on data from Uncomtrade.

Note: P = Predicted, A = Actual

Table 7: Overtraded partners based on 1995 data with per capita GDP variable

Countries	Trade (P-A) US$ Mill.	Trade (P/A)
India Brazil	-271.4272754	0.735709
India Russia	-168.8821792	0.907157
India China	-4867.232902	0.473072
India South Africa	-151.0123252	0.602599

Source: Calculations based on data from Uncomtrade.

Note: P = Predicted, A = Actual.

Table 8: Trading partners with trade potential based on 2016 data with per capita GDP differential variable

Countries	Trade (P-A) US$ Mn.	Trade(P/A)
India Brazil	991.9151558	4.646747
India Russia	235.2834367	1.297075
India China	299.4308243	2.405779
India South Africa	339.2607542	1.192434

Source: Calculations based on data from Uncomtrade, Note: P = Predicted, A = Actual

Table 9: Overtrading partners based on 2016 data with per capita GDP differential variable

Countries	**Trade (P-A) US$ Mn.**	**Trade(P/A)**
India Brazil	-139.7351128	0.7445428
India Russia	-17800.33296	0.3724765
India China	-234.7014468	0.72804
India South Africa	-32.62164163	0.9290834

Source: Calculations based on data from Uncomtrade.

Note: P = Predicted, A = Actual.

Table 10: Trading partners with trade potential based on 1995 data with per capita GDP differential variable

Countries	Trade (P-A) US$ Mn.	Trade (P/A)
India Brazil	632.1032705	6.056826
India Russia	279.5694516	1.947693
India China	113.8923303	1.550204
India South Africa	502.2303909	1.973315

Source: Calculations based on data from Uncomtrade.

Note: P = Predicted, A = Actual

Table 11: Overtraded trading partners based on 1995 data with per capita GDP differential variable

Countries	Trade (P-A) US$ mill.	Trade (P/A)
India Brazil	-80.67945194	0.921442
India Russia	-4571.911335	0.505044
India China	-151.6281234	0.600979
India South Africa	-127.0326422	0.7025

Source: Calculations based on data from Uncomtrade.

Note: P = Predicted, A = Actual.

Results based on 2016 data and with per capita GDP variable (Table 4) exhibit that India has the highest trade potential with countries like the Russian Federation and South Africa. While estimating for 1995 data with per capita GDP variable (see Table 6), India has the highest trade potential with the Russian Federation (5.14 times) and Brazil (2.03 times). The estimates with per capita GDP differential variable for 2016 data give, more or less; the similar results for these countries (see Table 10).

Table 12: Countries with potential for India's trade expansion by year and variable

Countries/Year	2016		1995	
	PCGDP*	PCGDPD**	PCGDP*	PCGDPD**
Brazil	Yes	Yes	Yes	Yes
Russia	Yes	Yes	Yes	Yes
China	Yes	Yes	Yes	Yes
South Africa	-	Yes	-	-

Source: Calculations based on data from Uncomtrade.

** Trade model with per capita GDP variable; ** Trade model with per capita DGP differential variable.*

From Table 12, there is an indication about the Indian trading partners with which the country has definite potential for trade expansion. If trade potential with trading partners is confirmed by both models (model with per capita GDP variable and model with per capita GDP differential variables) for both 2016 and 1995 data sets, India definitely has potential for trade expansion with those countries.

Table 13: Countries where India has exceeded its trade potential by year and variable

	2016		1995	
Countries	PCGDP*	PCGDPD**	PCGDP*	PCGDPD**
Brazil	Yes	-	Yes	Yes
Russia	Yes	Yes	-	-
China	Yes	Yes	Yes	Yes
South Africa	Yes	-	Yes	Yes

* Trade model with per capita GDP variable; ** Trade model with per capita DGP differential variable.

As in Table 13, India has definite trade potential with Brazil, the Russian Federation China and South Africa. Thus the main theme has been realized to estimate India's trade potential with its trading partners. Theoretical justification for using the gravity model to analyse bilateral trade flows is also re-affirmed in this section. The data employed is cross section data

for the year 2016 and 1995 of 5 countries including India. Trade with these four trading partners constitutes about 19 per cent of India's total world trade. Hence the analysis is based on maximum possible coverage of India's trade. OLS has been used as an estimation technique. Estimated results reveal that India's bilateral trade is positively and significantly affected by higher economic size in terms of GDP, per capita GDP and openness variable (trade-GDP ratio). The magnitude of this effect is the highest for openness variable (more than proportional), nearly proportional for GDP variable, and the lowest for per capita GDP variable. As the findings in this study reveal, so does the Bhattacharyya and Banerjee (2006) portrayed about India's trade. The results depicted that trade responds less than proportionally to size and more than proportionally to distance. Furthermore, size has more determining influence on India's trade than the level of development of the trading partner. Additionally, Bhattacharya and Bhattacharyay (2007) empirical results showed that in the short run India's potential gain is relatively less compared to China because of its high tariffs but in the long run, India's gains are higher than China once its tariff levels are brought at par with them. They justified that free trade arrangement is a win-win situation for both countries and is consistent with their growing dominance in the international trade.

As anticipated, distance between trading partners negatively affects India's bilateral trade. The study supports the Linder hypothesis, i.e. similar countries trade more than dissimilar ones. This study explores that India has definite potential for trade expansion with Brazil, the Russian Federation, China and South Africa. The policy implication is that Indian government should take correct measures to increase trade volume with these countries where full potential of trade expansion is confirmed. Didier and Hoarau (2013) also confirmed the negative impact of distance and geographical remoteness together with the positive effects of SSA and BRICs' GDPs. Moreover, the "augmented" variables (terms of trade, natural resources, democracy) obviously highlighted the specific role of China compared to other BRICs, essentially for African exports. Tripathi and Leitão (2013) findings also suggested that political globalization and cultural proximity have a positive influence on bilateral trade. Economic size and common border were introduced as proxies, but these variables confirmed a positive impact of bilateral trade. Thus these results justified that the gravity model can explain the pattern of bloc's trade.

5.4: Conclusion

The estimation of potential trade based on the trade gravity model for India's trading partners (Brazil, Russia, China and South Africa) has found that the gravity models for both 1995 and 2016 fit the data well and explain 75 percent and 76 percent of the variation in bilateral trade across sample of countries, respectively. The results are hetero-corrected, multicollinearity and auto correlation free. The coefficient of product of GDP is positive and highly significant as expected. This implies that India tends to trade more with these economies. India's bilateral trade with country j increases by 0.81 per cent as the size of the country (GDP/output) is increased by 1 per cent. Per capita GDP also affected India's bilateral trade positively and significantly though this variable was not found significant for 1995 data. The coefficient of this variable is 0.17 for 2014 data indicating that 1 percent increase of per capita income of trading pair increases bilateral trade by 0.17 percent. The openness variable also affect India's bilateral trade positively and more than proportionately [exp (.1) = 1.11] whereas the dummy variable, RTA, is not found significant. The per capita GDP differential has negative and statistically significant effect on bilateral trade flows for both 2014 and 2010 data. So the estimated results support the Linder hypothesis, i.e. similar countries trade more than dissimilar ones. The coefficients of this variable are -0.17 and -0.34 for 2016 data and 1995 data, respectively. The implication is that 1 percent increase of per capita income differential between pair of countries results in 0.17 percent and 0.23 percent decrease of bilateral trade.

Results based on 2016 data and with per capita GDP variable exhibit that India has the highest trade potential with countries like the Russian Federation and South Africa. While estimating for 1995 data with per capita GDP variable, India has the highest trade potential with the Russian Federation (5.14 times) and Brazil (2.03 times). The estimates with per capita GDP differential variable for 1995 data give, more or less; the similar results for these countries .Here is an impetus about the Indian trading partners with which the country has definite potential for trade expansion. If trade potential with trading partners is confirmed by both models (model with per capita GDP variable and model with per capita GDP differential variables) for both 2016 and 1995 data sets, India definitely has potential for trade expansion with those countries. Thus accordingly, India has definite trade potential with Brazil, the Russian Federation and South Africa. The estimated results reveal that India's bilateral trade is positively and significantly

affected by higher economic size in terms of GDP, per capita GDP and openness variable (trade-GDP ratio). The magnitude of this effect is the highest for openness variable (more than proportional), nearly proportional for GDP variable, and the lowest for per capita GDP variable. As anticipated, distance between trading partners negatively affects India's bilateral trade. The study supports the Linder hypothesis, i.e. similar countries trade more than with dissimilar ones.

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