EXPORT LED GROWTH HYPOTHESIS AND IMPORT LED GROWTH HYPOTHESIS, WHICH IS TRUE FOR BRIC COUNTRIES?

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ABSTRACT

This study is about the main factors of economic growth for BRIC nations especially related to trade sector. The main aim to investigate the export led growth and import led growth hypothesis by using the panel data models for BRIC. Moreover, imports are used to run the production developments in the economy. Hence, it can be said that imports are valuable to increase growth, which is the objective of this study. Exports are also valuable for the economy to generate revenues that can lead to more economic growth. The findings of the paper shows that the BRIC growth supported the both hypothesis of export led growth and import led growth.

KEYWORDS: *Import led growth, Panel data, Export led growth, Foreign Direct Investment, Economic Growth, BRIC*

1. INTRODUCTION

Brazil, Russia, India and China (BRIC) are famously known as the emerging economies due to rapid rise in the growth of these countries. This investigation intends to break down the primary macroeconomic elements of financial development of BRIC countries. Monetary development is named as the main motivation for the money related and financial advancement and progress of the nation making it essential to see the determinants of financial development. Monetary Growth goes about as a critical basic factor to diminish destitution, in this way elevating the way of life of masses and prepares for improvement in all regards. This study is mainly about trade and economic growth. There are two important views that exports lead to growth in a country, it is known as export led growth hypothesis. Second is about the imports composition in domestic consumption, as we know that imports play very important role in the domestic consumption can lead to economic growth. So, its about the import led growth hypothesis. Brazil spend 157.5 billion U.S. dollars billion on imports in year 2017, while India imported of 447 billion dollar products. It shows that BRIC countries spend so much on imports so it is important to know that what is the role of exports and imports in the growth of BRIC countries.

Without this, Economic Growth despite everything stays a questionable subject since shifted market analysts see development from various hypotheses, bases and record alongside their particular emotional application towards different created and creating economies. That is the reason this investigation depends on BRICS Countries so as to speak to an all encompassing perspective and composite picture taking a relationship of both created and rising economies. BRICS nations establish significant portion of 41% or more of the World's Population. This, yet it is additionally described by tremendous pool of skill as far as human and customary regular assets, quality instruction and furthermore all in all establish about 23.2% of the Gross World Product alongside 27% of world's property surface, individuals from which are by and large notable for their critical effect on local issues. Without a doubt, a minute change in its individual nation's different improvement will cause certain impact into the BRICS relationship all in all and in this way upon the general world economy everywhere also and thusly-macroeconomic determinants come into spotlight. There are different studies have done on the determinants of economic growth

Liu et. al. (2002) importantly found the positive relation between FDI, trade and economic growth for the China. In 2000 Afxentiou and Serletis broke down the connection between GDP, fares, and

imports, utilizing information from 50 creating nations for these three factors in the period 1970-1993. Right now, which the creators utilized a unit root test, the Engle-Granger Cointegration Test, and the Granger Causality Test, they finished up with the theory that fares are the driving motor of development was substantial just for South East Asian nations, and that this speculation didn't remain constant for different nations (Hüseyni, 2012).

Göçer (2013) utilized the board information examination technique on information for the period 1980-2012 for Asian nations, and broke down the impact of fares on financial development. This investigation verified that fares had a noteworthy and beneficial outcome on development in these nations and that a 10% expansion in sends out caused a 1% expansion in financial development. Srinivasan (2016) examined causal connection among trade and financial development for BRICS nations by utilizing Johansen cointegration investigation and VECM Granger causality examination. As indicated by his outcomes, there is huge long haul connection among send out and financial development and there is bidirectional causality among fare and development for BRICS nations with the exception of Brazil. Jayme Jr. (2003). found a positive cointegration between the growth in export and the long-term economic growth.

Then again and in India, Agrawal (2015) inferred that a decrease in destitution comes because of an expansion in monetary development. Then again, Sreelata and Anup (2014) found that household capital arrangement, work, fare, FDI and cash supply positively affect GDP development. Comparable outcomes were gotten by Aamir, Saba and Tazeen (2011), they found that gross of capital development, fares and work have a positive and long haul sway on financial development in India.

2. BRIC ECONOMIES AND ECONOMIC GROWTH

It was 2001 when the Goldman Sachs coined the term BRICs for the nations of Brazil, Russia, India and China (Wilson, Kelston, & Ahmed, 2010), which he predicted that will be more in terms of GDP then the G6 countries by the 2050 (Wilson & Purushothaman, 2003). These countries are very well known as emerging economies due to rapid economic growth, so this study aims to analyze the factors of economic growth for the BRIC. Figure 1 is showing the trends in GDP for the each member of BRIC.

As is known, the emerging nations are moved in areas with the biggest populace on the planet. Toward the start of the century, their picture has experienced an extreme change through the most powerful development on the planet and through the lessening of the development populace rate that has prompted an expansion in GDP for each capita near that of created nations. This was conceivable because of the expanding level of monetary combination of rising nations in the worldwide economy appeared in the exchange and budgetary divisions. Positive possibilities of these nations have brought about the decrease of hazard recognition originating from developing markets and uniting the patterns referenced previously. BRICS nations are a piece of those rising nations which have the qualities mentioned early.

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Figure 1 : BRIC Economies and Economic Growth Trends
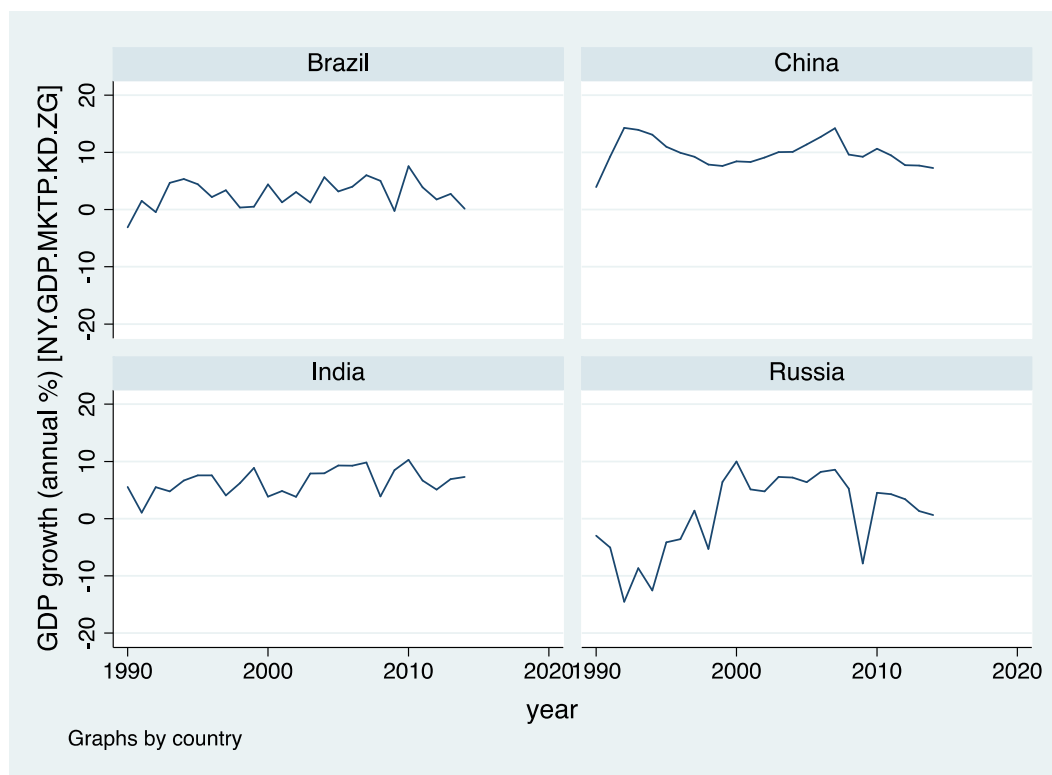
Source : WDI indicators

The present study aims to study the role of the macroeconomic variables (FDI, Inflation rate, Employment rate, Government final consumption expenditure, lending interest rate) in the FDI growth rate of the BRIC (Brazil, Russia, India, China) countries.

So the main hypothesis linked to objective are as follows

H1: The Economic growth of BRIC nations exhibits the property of export led growth hypothesis

H2: The economic growth of BRIC nations exhibits the property of Import led growth hypothesis

H3: FDI effects economic growth in significant ways

3. DATA AND METHODOLOGY

To explore the comprehensive determinants for the economic growth for BRIC economies, given the late advancements in the growth patterns for the BRIC, this study concentrates on tending to the accompanying issue, alongside the sub-issues that go with. The main concern of this study is to fill the gap by exploring following gaps in literature:

(1) What are the central points that add to the positive economic growth for the BRIC countries?

(2) What are the current viewpoints/traits of the nation that supplement and cause the economic growth?

(3) What is the measure as far as commitment for variables that influence development all together for the BRIC's administration and additionally its Central Banking authority to employ, observing, control and vital measures to help the nation's improvement?

(4) To furnish strategy ideas to strategy makers for enlightening BRIC's funding climate to promote economic growth

We investigated a panel of four emerging nations of BRIC for the period of 1992 to 2014 due to Russia's availability of data from 1992. The descriptions of variables are presented in Appendix. This research considers the accumulation of steady and consistent auxiliary information for this time for dependent variables from World Development Indicators of World Bank (2015). The information were gathered on macroeconomic variables that can possibly draw in outside investors in the nation, which was construct to a great extent in light of the qualities of the economy inside of the time of study. The examination will be a useful way to determine economic growth, not just for scholarly reason but for

strategies too. Its discoveries, if executed, help in to motivate a genuine change in investment atmosphere of BRIC nations. We used OLS regression, Fixed Effects and Random Effects (Panel Data techniques). We have also applied the Hausman test to find out the best appropriate test to report the results. The results of Hausman are presented in Appendix.

4. RESULTS AND DISCUSSION

This study works on the important factors for the economic growth for emerging economies of BRIC, especially relating to export let growth hypothesis and import led growth hypothesis. Table 1 shows the descriptive statistics of the study. There are total 100 observations of variable if data is not missing.

Table 1 Descriptive stat

	(1)	(2)	(3)	(4)	(5)
VARIABLES	N	mean	sd	min	max
FDIInflow	100	28,736	33,248	-11	128,500
FDIStock	99	206,543	240,262	0	1.085e+06
GDPcurrent	100	1.451e+12	1.850e+12	1.959e+11	1.035e+13
GDPgrowthannual	100	4.971	5.283	-14.53	14.28
GCFGDP	100	28.29	9.441	14.83	47.68
Populationdensity	100	132.8	145.6	8.716	435.7
Urbanpopulation	100	55.58	22.74	25.55	85.43
Exports	100	3.273e+11	4.719e+11	2.264e+10	2.342e+12
Imports	100	2.935e+11	4.081e+11	2.294e+10	1.959e+12
Tradegdp	100	38.91	16.88	15.16	110.6
naturalresources	100	9.671	9.469	0	43.22
Patent	100	45,415	123,019	0	704,936
Tariffrate	65	16.98	12.43	5.960	81.56
remittancespaid	96	3.740e+09	7.628e+09	5.000e+06	3.722e+10
Totalreserves	98	3.954e+11	8.119e+11	0	3.900e+12
migrantstock	20	4.895e+06	4.830e+06	376,361	1.227e+07
Number of id	4	4	4	4	4

Table 2 represents the correlations for the variables used in the study to determine the factors of growth in BRIC nations, the results indicate that GDP current and GDP growth rates are positively correlated with the FDI inflows and FDI stocks both showing the complementary relationship among GDP growth the FDI. Savings are also positively related with the growth factors, it supports the Solow growth model. Further, the findings show the complementary relationships among economic growth, exports and imports of the BRIC (Brazil, Russia, Indian and China). It urge to accepts the import led growth hypothesis and export led growth hypothesis for the region of BRIC. Tariff rate, migration stock and population density are negatively correlated with the economic growth.

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Table 2 Correlation among variables

Variables	FDIInflow	FDIStock	GDPcurrent	GDPgrow	GCFGDP	Popd	UP	Exports	Imports	Tradegdp	NR	Patent	Tariffrate	remittancespaid	Totalreserves
FDIInflow	1.000														
FDIStock	0.848***	1.000													
GDPcurrent	0.865***	0.833***	1.000												
GDPgrowthannual	0.340***	0.144	0.248**	1.000											
GCFGDP	0.543***	0.278***	0.562***	0.499***	1.000										
Populationdensity	-0.186*	-0.200**	0.016	0.386***	0.379***	1.000									
UP	0.081	0.263***	-0.004	-0.526***	-0.601***	-0.855***	1.000								
Exports	0.863***	0.757***	0.969***	0.272***	0.619***	0.018	-0.048	1.000							
Imports	0.848***	0.765***	0.976***	0.281***	0.641***	0.084	-0.082	0.992***	1.000						
Tradegdp	0.210**	0.115	0.182*	-0.030	0.333***	-0.089	0.030	0.348***	0.324***	1.000					
NR	0.008	0.045	-0.065	-0.084	-0.260***	-0.366***	0.353***	0.050	-0.010	0.622***	1.000				
Patent	0.744***	0.664***	0.940***	0.198**	0.545***	-0.008	-0.046	0.928***	0.919***	0.205**	-0.015	1.000			
Tariffrate	-0.433***	-0.439***	-0.382***	0.127	-0.022	0.426***	-0.455***	-0.396***	-0.384***	-0.489***	-0.330***	-0.278**	1.000		
remittancespaid	0.206**	0.306***	0.085	-0.188*	-0.124	-0.231**	0.249**	0.173*	0.124	0.406***	0.524***	-0.007	-0.313**	1.000	
Totalreserves	0.844***	0.739***	0.976***	0.266***	0.601***	0.012	-0.047	0.979***	0.973***	0.271***	-0.018	0.959***	-0.322***	0.064	1.000
migrantstock	-0.401*	-0.176	-0.314	-0.266	-0.317	-0.034	0.141	-0.187	-0.235	0.448**	0.623***	-0.199	0.143	0.568**	-0.202

*** p<0.01, ** p<0.05, * p<0.1

Table 3 Exports led Growth hypothesis and other main factors of economic growth

VARIABLES	(Model1) OLS	(Model2) fe	(Model3) re	(Model4) rerobust
lnFDIIN	-0.0309***	-0.0393**	-0.0393**	-0.0309***
	(0.0104)	(0.0157)	(0.0157)	(0.00644)
lnEXP	0.488***	0.530***	0.530***	0.488***
	(0.0685)	(0.0895)	(0.0895)	(0.0521)
lnNR	-0.226***	-0.203***	-0.203***	-0.226***
	(0.0321)	(0.0428)	(0.0428)	(0.0552)
lnTR	0.154***	0.141***	0.141***	0.154***
	(0.0338)	(0.0349)	(0.0349)	(0.0412)
Internetusers	0.00819***	0.00725***	0.00725***	0.00819***
	(0.00131)	(0.00167)	(0.00167)	(0.00195)
Popgrowt	0.0766	0.142	0.142	0.0766
	(0.0618)	(0.0888)	(0.0888)	(0.112)
GCFGDP	0.0226***	0.0219***	0.0219***	0.0226***
	(0.00530)	(0.00560)	(0.00560)	(0.00394)
lnRemitt	0.0126	0.0291	0.0291	0.0126
	(0.0155)	(0.0233)	(0.0233)	(0.0121)
lnUP	0.318***	0.227	0.227	0.318***
	(0.0910)	(0.266)	(0.266)	(0.0325)
lnINDValue	-0.637***	-0.876***	-0.876***	-0.637**
	(0.139)	(0.204)	(0.204)	(0.256)
lnOER	-0.0423***	-0.0497***	-0.0497***	-0.0423***
	(0.0117)	(0.0126)	(0.0126)	(0.0104)
Constant	11.76***	11.89***	11.89***	11.76***
	(1.267)	(1.417)	(1.417)	(1.627)
Observations	95	95	95	95
R-squared		0.981	0.981	
Number of id	4	4	4	4

Standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

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The main results are presented in table 3 and 4, showing the exports and imports in separate tables. We have applied OLS, RE, FE and RE Robust test to find the main relationships, the Hausman test support to use the RE for the present data. The findings show the support to accepts the hypothesis and exports led growth property exhibits for the BRIC nations. The robust random effects results show that in crease in exports (0.488***) positively lead to more growth in BRIC region.

Table 4 Import led Growth hypothesis and other main factors of economic growth

VARIABLES	(Model 1) OLS	(Model 2) fe	(Model 3) re	(Model 4) fe robust
lnFDIIN	-0.0374***	-0.0374***	-0.0374***	-0.0376
	(0.00966)	(0.00966)	(0.00966)	(0.0244)
lnIMP	0.535***	0.535***	0.535***	0.555**
	(0.0618)	(0.0618)	(0.0618)	(0.122)
lnNR	-0.171***	-0.171***	-0.171***	-0.129
	(0.0294)	(0.0294)	(0.0294)	(0.0633)
lnTR	0.188***	0.188***	0.188***	0.169*
	(0.0272)	(0.0272)	(0.0272)	(0.0549)
Internetusers	0.00707***	0.00707***	0.00707***	0.00648
	(0.00124)	(0.00124)	(0.00124)	(0.00385)
Popgrowt	0.0689	0.0689	0.0689	0.163**
	(0.0564)	(0.0564)	(0.0564)	(0.0444)
GCFGDP	0.00747	0.00747	0.00747	0.00398
	(0.00586)	(0.00586)	(0.00586)	(0.00330)
lnRemitt	-0.0140	-0.0140	-0.0140	0.00374
	(0.0156)	(0.0156)	(0.0156)	(0.0255)
lnUP	0.263***	0.263***	0.263***	0.380
	(0.0846)	(0.0846)	(0.0846)	(0.486)
lnINDValue	-0.156	-0.156	-0.156	-0.383**
	(0.143)	(0.143)	(0.143)	(0.117)
lnOER	-0.0349***	-0.0349***	-0.0349***	-0.0442***
	(0.0109)	(0.0109)	(0.0109)	(0.00574)
Constant	9.156***	9.156***	9.156***	9.063***
	(1.324)	(1.324)	(1.324)	(0.915)
Observations	95	95	95	95
R-squared				0.985
Number of id	4	4	4	4

Table 4 presented the results related to imports led growth hypothesis. The robust results indicate in model 4 that imports positively and significantly increase the economic growth in BRIC. It leads to accept our second hypothesis too, which is about the economic growth of BRIC nations exhibits the property of Import led growth hypothesis. So, it helps to make the policy regarding trade boost in the nations to boost the economic growth. Exchange rate and natural resources leads to negative impact on the growth of BRIC countries. We can say them as negative determinants of economic growth. Interestingly FDI inflows also proved to be negative determinant in case of BRIC whole. While the results in table 3 shows, that total reserves (0.154***), Internet users – a proxy for globalization (0.00819***), urban population (0.318***) and savings (0.0226***) are emerged as the significant positive determinants of growth in BRIC.

5. CONCLUSION

The growth for any country is very important and the BRIC nations are gaining popularity as emerging economies due to their rapid rates of economic growth. As well as the trade is also booming for these nations especially for the China. This study aims to find out the reality of Export led growth hypothesis and Import led growth hypothesis for the BRIC nations. The results show that BRIC countries exhibits the both properties of export led growth and import led growth for BRIC. So, it helps to make the policy regarding trade boost in the nations to boost the economic growth. Other

important positive determinants of growth are total reserves, globalization, savings and urban population. While the FDI inflows, Natural resources and exchange rate increase leads to decline in growth. So the findings show that to increase the growth policy makers should focus on more trade as trade leads to more productivity and more consumption of goods.

REFERENCES

1. Aamir, M., Saba, S., & Tazeen, N. (2011). Determinants of Economic Growth in India. InterdisciplinaryJournal of Contemporary Research in Business, 3(7), 1016.
2. Agrawal, G. (2015). Foreign Direct Investment and Economic Growth in BRICS Economies: A Panel Data Analysis. Journal of Economics, Business and Management, 3(4), 421-424.
3. Hüseyni, İ. (2012). Dış ticaret ve ekonomik büyüme analizi Türkiye örneği: 1980-2010. (Master Disseration). Ataturk University, Erzurum.
4. Göçer, İ. (2013). Ekonomik Büyümenin Belirleyicisi Olarak İhracat: Gelişmekte Olan Asya Ülkeleri İçin Yatay Kesit Bağımlılığı Altında Çoklu Yapısal Kırılmalı Panel Eşbütünleşme Analizi. Bankacılar Dergisi, 86, 27-42. Retrieved from https://www.tbb.org.tr/Content/Upload/dergiler/dosya/60/ TBB_dergi86-web.pdf.
5. Jayme, F. G. Jr. (2003). Balance-of-Payments-constrained Economic growth in Brazil. Brazilian Journal of political Economy, 23(1), 62-84.
6. Sreelata, B., & Anup, K. S. (2014). Macroeconomic Determinants of economic Growth in India: A Time Series Analysis. SOP Transaction on Economic Research, 1(2), 54-72.
7. Srinivasan, P. (2016). Causal Nexus between Export and Growth: BRICS Nations. SCMS Journal of Indian Management, 8(1), 67-80.
8. Wilson, D., Kelston, A.L., & Ahmed, S. (2010). Is this the 'BRICs decade'? BRICs Monthly 10(3). New York: Goldman Sachs.
9. Wilson, D. & Purushothaman, R. (2003). Global economics paper no. 99: Dreaming with BRICs: The path to 2050. Retrieved from http://www2.goldmansachs.com/ideas/brics/bricsdream. html
10. World Bank. (2015). World Development Indicators. Retrieved from http://data.worldbank.org/data-catalog/world-development-indicators?cid=GPD_WDI

Appendix
Table 1 Shows the variables used in this study

Variables	Source
FDIInflow	WDI (World development indiators)
FDIStock	WDI
GDPcurrent	WDI
GDPgrowthannual	WDI
GCFGDP	WDI
Populationdensity (PD)	WDI
Urbanpopulation (UP)	WDI
Exports	WDI
Imports	WDI
Tradegdp	WDI
naturalresources	WDI
Tariffrate	WDI
remittancespaid	WDI
Totalreserves (TR)	WDI

Hausman Results

Results of Hausman Test for export led growth

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$chi2(10) = (b-B)'[(V\_b-V\_B)^{(-1)}](b-B)$$
$$= 2.91$$
$$Prob>chi2 = 0.9836$$