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How Relevant is Financial Sector Development in the FDI-Exports Nexus in BRICS?

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Abstract: The study investigated the impact of foreign direct investment (FDI) on exports and also explored the influence of financial development in the FDI-exports nexus in BRICS (Brazil, Russia, India, China, South Africa) nations using panel data analysis (fixed effects and pooled ordinary least squares) with annual data ranging from 1994 to 2015. Whilst it is clear how FDI and financial development are separately linked to exports growth, the role of financial sector development in the FDI-led exports hypothesis has not been addressed in the literature. Moreover, majority of empirical studies on FDI-led exports hypothesis have shied away from BRICS countries (see Table 1) except a study by Sahin (2018). Although the latter investigated the two-way relationship between FDI and international trade in BRICS plus Turkey, their study did not focus on the role of financial sector development in promoting FDI's influence on exports growth. Both fixed effects and pooled ordinary least squares (OLS) found out that among the five measures of financial development, it is only stock market capitalization that enhanced FDI triggered exports growth in BRICS countries. BRICS nations are therefore urged to implement stock market capitalization enhancement policies in order to experience significant exports growth triggered by FDI.

Keywords: Financial Development; Foreign Direct Investment; Exports; BRICS

JEL Classification: G15; F21; P33; P45

1. Introduction

Background of the study: The role of the export sector in promoting economic growth has been a major focus of economists and academic researchers in the last decade (Yoo. 2008; Keong et al. 2005; Aditya and Acharyya. 2011; Siliverstovs and Herzer. 2006; Pradhan. 2010; Awokuse. 2007). Although literature support the exports-led growth, growth-led exports, feedback effect and the neutrality hypotheses, majority of empirical researchers on the subject matter observed that exports are a vital cog in the economic growth process. Despite the undisputable importance of good export growth policies in influencing economic growth, empirical studies exploring the determinants of exports growth are very scant. One would have expected literature to be awash with empirical studies investigating the driving forces behind exports growth considering the fact that exports have been found to be an engine for economic growth. Such empirical studies on determinants of exports growth would help responsible authorities to craft and implement relevant exports promotion policies that spur economic growth. In an

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attempt to fill this void, the current study focused on two major aspects: (1) the impact of FDI on exports growth and (2) the role that financial development plays in enhancing FDI's influence on exports growth. The study focused on BRICS countries, a bloc of countries which have to a large extent been excluded in prior FDI-led exports empirical research studies. The findings from the study helps BRICS countries to formulate research based FDI and financial development policies aimed at promoting exports growth.

Problem statement and research gaps: Despite the presence of some minor contradictions, what is clearly coming out from the literature is that market seeking FDI substitutes exports whilst factor seeking FDI promotes exports. Moreover, there is consensus from the literature when it comes to the positive role played by financial sector development in promoting exports growth. What has so far not yet been conclusively ascertained is whether financial sector development enhances FDI's ability to spur exports. As far as the author is aware, no exclusive study exists on the impact of FDI on exports let alone on the financial development-FDI-exports nexus in BRICS countries. The closest study was done by Sahin (2018) which investigated the relationship between FDI and international trade in Brazil, Russia, India, China, South Africa (BRICS) plus Turkey. The current study deviated from the one done by Sahin (2018) in the following ways: (1) it specifically focused on the impact of FDI on exports, (2) it investigated whether financial development enhances FDI's influence on exports, (3) it focused strictly on BRICS nations and left out Turkey, (4) it used five measures of financial development whilst Sahin (2018) used only four proxies of financial development and (5) the current study used annual data from 1994 to 2015, which is the most recent data available as compared to a study by Sahin (2018) which used annual data ranging from 1993 to 2013.

Organization of the paper: Section 2 discusses the empirical literature on the impact of FDI on exports, section 3 is the trend analysis of FDI, exports and stock market capitalization in BRICS whilst section 4 explains how other factors (explanatory variables) influence exports growth. Section 5 deals with research methodology, section 6 concludes the study whereas section 7 is the bibliography. Section 8 is appendix.

2. Impact of Foreign Direct Investment on Exports–Empirical View

Table 1 summarizes the scant empirical work on the influence on FDI on exports.

Table 1. A Summary of the Impact of FDI on Exports –Empirical Literature

Author	Country/Countries of study	Methodology	Findings
Marchant et al (2002)	East Asian countries	Panel data analysis	FDI and exports were found to have a feedback effect. The same study also observed that exchange rates and GDP had a significant influence on determining exports.
Pantulu and Poon (2003)	United States and Japan	Panel data analysis	To a larger extent, FDI was found to have had a complementary effect on international trade.
Ali and Xialing (2017)	Pakistan	Granger causality tests	FDI and international trade complemented each other in

			positively and significantly affecting economic growth in Pakistan.
Rahman and Grewal (2017)	The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) countries	Toda and Yamamoto (1995) approach	FDI and imports were separately found to have had a positive impact on exports. The same study observed that FDI and exports had a positive impact on imports in the BIMSTEC countries.
Hailu (2010a)	African countries	Least Square Dummy Variable (LSDV)	FDI inflow into Sub-Saharan African countries had a significant positive influence on both exports and imports.
Sahin (2018)	Brazil, Russia, India, China, South Africa and Turkey	Bootstrap panel causality framework	A bi-directional causality relationship was detected between FDI and international trade in India and Turkey.
Martinez et al (2012)	European Union countries	Hausman-Taylor estimation approach	The study showed a complementary relationship between FDI and international trade in the European countries.
Awolusi et al (2016)	African and Asian countries	Granger causality tests	A long run relationship between FDI, international technology transfer and international trade was detected in both African and Asian countries studied. A feedback effect between FDI and international trade was found to exist in the countries studied.
Magalhaes and Africano (2017)	27 countries	Panel data analysis	FDI and imports were found to be substitutes.
Chaisrisawatsuk and Chaisrisawatsuk (2007)			FDI inflows and exports were found to have affected each other. On the other hand, FDI and imports were also found to have had a causal impact on each other.
Bouras and Raggad (2015)	10 countries, namely Tunisia, Morocco, Egypt, Finland, Hungary, Poland, Portugal, Czech Republic, Slovenia and Ireland.	Panel data analysis	Using both manufacturing and non-manufacturing sectors, a complementary relationship between FDI and exports in the 10 countries studied was observed.

Source: Author compilation

The contradicting findings from Table 1 shows that the relationship between FDI and exports is still far from being conclusive. Moreover, none of the existing empirical studies to the author's best knowledge has explored the conditions that has to be available in the BRICS countries before exports triggered by FDI becomes significant.

3. FDI, Exports and Stock Market Capitalization in BRICS Countries

According to Figure 1, Brazil, Russia, China and South Africa were generally characterised by a mixed trend in net FDI inflows during the period ranging from 1994 to 2015.During the same period, India's FDI net inflows generally shows a consistently upward trend despite some intermittent fluctuations.

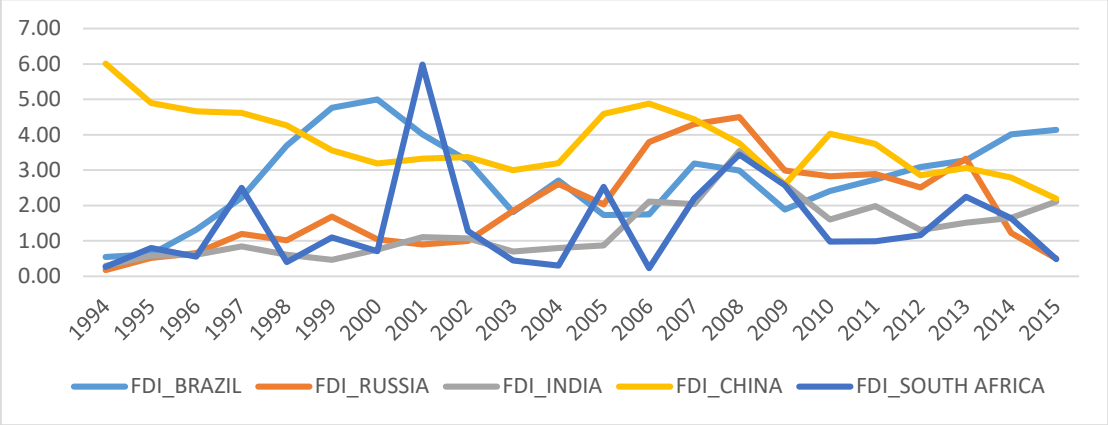

Figure 1. Net FDI net inflow (% of GDP) Trends in BRICS Countries

Source: Author compilation using data from World Bank, International Monetary Fund

Net FDI inflow for Brazil increased from 0.55% in 1994 to 5% in 2000, declined from 5% in 2000 to 1.73% in 2005, experienced a 0.68 percentage points positive growth during the subsequent five-year period before recording another positive gain, from 2.42% in 2010 to 4.14% in 2015. As for Russia, net FDI inflow went up (1) from 0.17% in 1994 to 1.05% in 2000, (2) from 1.05% in 2000 to 2.03% in 2005 and (3) from 2.03% in 2005 to 2.83% in 2010. However, the subsequent five-year period for Russia was characterised by a 2.33 percentage points decline in net FDI inflow, from 2.83% in 2010 to 0.50% in 2015. In India, net FDI inflow increased from 0.29% in 1994 to 0.75% in 2000, went up by 0.12 percentage points between the year 2000 and 2005, experienced a positive growth from 0.87% in 2005 to 1.60% in 2010 before registering another 0.51 percentage points increase, from 1.60% in 2010 to 2.11% in 2015.

For China, net FDI inflow declined by 2.82 percentage points, from 6.01% in 1994 to 3.19% in 2000, increased by 1.40 percentage points during the period from 2000 to 2005 before experiencing a negative growth of 1.85 percentage points during the subsequent five-year period, from 4.04% in 2010 to 2.19% in 2015. For South Africa, net FDI inflow went up from 0.27% in 1994 to 0.71% in 2000 before further increasing from 0.71% in 2000 to 2.53% in 2005. The next five-year period ranging from 2005 to 2010 saw net FDI inflow into South Africa plummeting by 1.55 percentage points before declining by 0.50 percentage points, from 0.98% in 2010 to 0.48% in 2015.

Total exports as a ratio of GDP for Brazil increased from 2.27% in 1994 to 2.32% in 2000, further went up by 0.4 percentage points during the subsequent five-year period to end the year 2005 at 2.72% (see Figure 2). The five-year period from 2005 to 2010 saw total exports as a ratio of GDP plummeting by 0.35 percentage points, from 2.72% in 2005 to 2.37% in 2010 whereas the subsequent five-year period (2010 to 2015) was characterised by a positive growth in total exports as a ratio of GDP, from 2.37% in

2010 to 2.56% in 2015. As for Russia, total exports as a ratio of GDP increased from 3.32% in 1994 to 3.79% in 2000, declined by 0.22 percentage points between 2000 and 2005 before further decreasing from 3.56% in 2005 to 3.37% in 2010. Russia's total exports as a ratio of GDP was characterised by a negative growth of 0.02 percentage points, from 3.37% in 2010 to 3.35% in 2015.

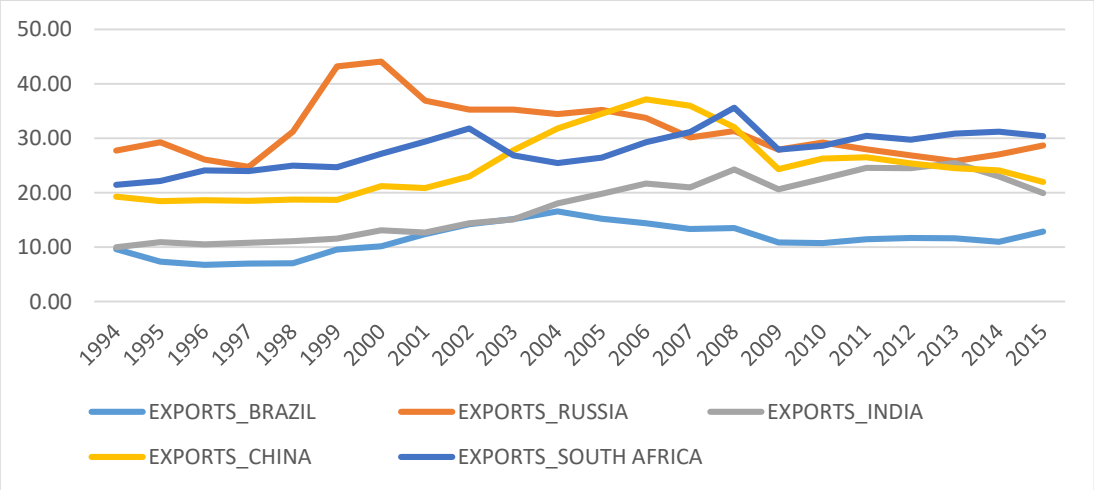

Figure 2. Exports of Goods and Services (% of GDP) Trends in BRICS Countries

Source: Author Compilation Using Data from World Bank, International Monetory Fund

Total exports as a ratio of GDP for India increased from 2.30% in 1994 to 2.58% in 2000, went up by 0.41 percentage points between year 2000 and 2005 before registering a positive growth of 0.13 percentage points during the subsequent five-year period, from 2.99% in 2005 to 3.12% in 2010. India's total exports as a ratio of GDP then plummeted by 0.12 percentage points, from 3.12% in 2010 to 2.99% in 2015. However, China experienced a mixed trend in its total exports as a ratio of GDP during the 22-year period (1994-2015). For example, its total exports as a ratio of GDP went up from 2.96% in 1994 to 3.06% in 2000 before experiencing a 0.49 percentage points increase during the subsequent five-year period, from 3.06% in 2000 to 3.54% in 2005. The five-year period (2005 to 2010) saw China's total exports as a ratio of GDP going down by 0.27 percentage points before further experiencing another decline during the subsequent five-year period, from 3.27% in 2010 to 3.09% in 2015.

As for South Africa, total exports as a ratio of GDP experienced a positive growth, from 3.07% in 1994 to 3.30% in 2000, declined by 0.03 percentage points between the period from 2000 to 2005 before registering a positive growth during the subsequent five-year period, from 3.28% in 2005 to 3.35% in 2010. Last but not least, the five-year period between 2010 and 2015 saw South Africa's total exports as a ratio of GDP going up by 0.06 percentage points to end the period at 3.41%.

It is clear from Figure 3 that stock market capitalization trends for BRICS countries followed a mixed pattern during the period from 1994 to 2015.

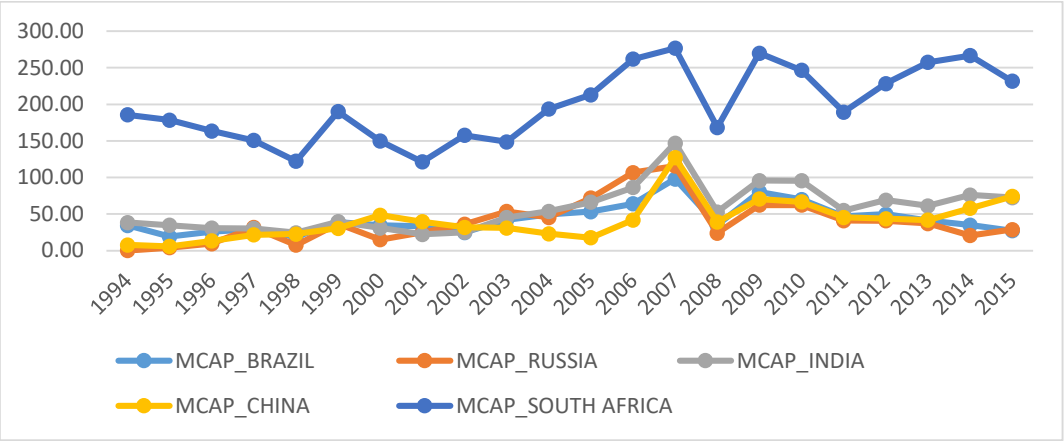

Figure 3. Stock Market Capitalization (% of GDP) Trends in BRICS Countries

Source: Author Compilation Using Data from World Bank, International Monetory Fund

The period between 1994 and 2000 saw stock market capitalization as a ratio of GDP for Brazil marginally going down from 34.60% to 34.50% before increasing from 34.50% in 2000 to 53.23% in 2005. Stock market capitalization as a ratio of GDP for Brazil then further increased from 53.23% in 2005 to 69% in 2010 before plummeting by 42.77 percentage points during the subsequent five-year period, from 69.97% in 2010 to 27.20% in 2015. The stock market capitalization as a ratio of GDP trends for India and South Africa mimicked that of Brazil during the period ranging from 1994 to 2015.

As for Russia, stock market capitalization as a ratio of GDP increased from 0.04% in 1994 to 14.99% in 2000, massively went up by 56.82 percentage points during the period from 2000 to 2005 before plummeting from 71.80% in 2005 to 62.38% in 2010. Russia's stock market capitalization ratio of GDP then declined by 33.59 percentage points, from 62.38% in 2010 to 28.79% in 2015. China experienced a massive positive growth in its stock market capitalization, from 7.78% of GDP in 1994 to 48.48% of GDP in 2000. China's stock market capitalization as a ratio of GDP then went down by 30.76 percentage points during the period between 2000 and 2005 before experiencing a massive positive growth during the subsequent five-year period, from 17.71% in 2005 to 66.69% in 2010. The five-year period between 2010 and 2015 saw China's stock market capitalization as a ratio of GDP increasing by 7.31 percentage points to end the period at 74%.

From Figure 1, 2 and 3, it is evident that the trend analysis for FDI, exports and financial development failed to detect a clear relationship between and among the three variables. Only an empirical analysis can be able to ascertain how FDI, exports and financial development are related in the case of BRICS.

4. Other Factors that have an Influence on Exports

Table 2. Explanatory Variables that Affect Exports

Variable	Proxy used	Theory intuition	Expected sign
FDI	Net FDI inflow (% of GDP)	Following Hailu (2010a), FDI and exports complement each other if trading between the countries is centred on their comparative advantages (positive relationship). According to Root (1994), market seeking FDI seeks to penetrate markets with more sales potential hence it is less likely to increase exports of the host country. Factor seeking FDI aim to access raw materials, use them to produce goods and export the final products to other countries. On the other hand, FDI and exports substitute each other if trading between countries is based on absolute advantages (negative relationship) – Hailu (2010a:123).	+/-
GROWTH(Economic growth)	Gross domestic product (GDP) per capita	According to Bhagwati (1988), positive economic growth enhances skills level and technology, a combination which creates a comparative advantage that stimulates export sector for the country. A study done by Baimbridge and Zang (2011) observed that economic growth had a negative influence on exports in South Korea.	+/-
INFL(Inflation rate)	Inflation consumer prices (annual %)	High inflation depreciates the values of the domestic currency and in the process makes the exports more competitive in the international markets. On the other hand, higher levels of inflation increases domestic firms' cost of production thereby curtailing not only their international market competitiveness but their ability to produce enough products for the local and international markets.	+/-
SAV(Savings)	Gross domestic savings (% of GDP)	On the theoretical front, savings indirectly spur the export sector through its significant positive influence on financial sector development and economic growth.	+
HCD (Human capital development)	Human capital development index	According to Saiyed and Pathania (2016), higher skilled, more educated and healthy workforce enable domestic firms to more quickly and effectively adapt to sophisticated technology which not only increases production but boost the exports levels of the country.	+
EXCH (Exchange rate)	Local currency against the United States Dollar	A depreciation of the local currency makes exports cheaper thereby increasing the demand for domestic goods and services in	+

		the foreign markets (Dincer and Kandil. 2011:812).	
FIN(Financial development)	Domestic credit provided by the financial sector (% of GDP, Domestic private credit (% of GDP), Stock market turnover (% of GDP), Stock market value traded (% of GDP), Stock market capitalization (% of GDP)	Consistent with Shahbaz and Rahman (2014), financial development enables export companies to acquire the fixed costs that they normally face. King and Levine (1993) also showed that a developed financial sector is better able to efficiently allocate capital towards production, pushing down transaction costs, cost of information and providing a risk management support framework for the exporting firms. In line with Hailu (2010b), increased levels of stock market and bond sector development may promote speculative investment in financial assets (shares and bonds) rather than in the real economy which promotes exports growth.	+/-
FDI x FIN	See above for the measures of FDI and financial development used.	Both FDI and financial development have undoubtedly been found by literature to play an important role in promoting exports. The author therefore hypothesizes that in an economy where there is more FDI inflow and high financial sector development, exports growth can be accelerated. In other words, high financial sector development spurs FDI's ability to enhance exports promotion and growth.	

Source: Author compilation

5. Research Methodology

Data, Data Collection and Sample Size: Using BRICS countries as a unit of analysis, panel data analysis with annual secondary data ranging from 1994 to 2015 was used to investigate the role of financial sector development in the FDI-exports nexus. The data was obtained from World Development Indicators, United Nations Development Reports, International Financial Statistic and International Monetary Fund databases. These sources of data were preferred because they are credible and they keep the data in the same currency (United States dollars) which makes it easy to use and to compare.

Econometric Model Description

$$EXPORTS_{i,t} = \beta_0 + \beta_1 FDI_{i,t} + \beta_2 X_{i,t} + \mu_i + \varepsilon it \quad [1]$$

The control variables (X) which were used in this paper include exchange rates, human capital development, savings, inflation and economic growth. To show the impact of financial sector development in the FDI led exports hypothesis, equation 1 was transformed into equation 2.

$$EXPORTS_{i,t} = \beta_0 + \beta_1 FDI_{i,t} + \beta_2 FIN_{i,t} + \beta_3 (FDI_{i,t}. FIN_{i,t}) + \beta_4 X_{i,t} + \mu_i + \varepsilon it \quad [2]$$

$(FDI_{i,t}. FIN_{i,t})$ is an interaction term between FDI and financial development. A significant positive co-efficient of the interaction term means that financial development in the BRICS countries is necessary before FDI can have a significant influence on exports growth. Equation 2 was estimated using panel data analysis (fixed effects and pooled OLS), whose advantages consistent with Baltagi and Song (2006) are as follows: (1) makes it possible to pool the data together and control for individual country differences, (2) omitted and unobserved variables can easily be controlled and (3) increases the degrees of freedom and suppresses multi-collinearity between and among variables, thereby improving the efficiency of the estimation procedures.

Panel unit root tests showed that the data for all the variables was integrated of order 1 (see Table 5 in Appendix section) whilst a long run relationship between the variables studied was found to exist (see Table 6 in Appendix section).

Main Data Analysis: Domestic credit provided by the financial sector (% of GDP), domestic private credit (% of GDP), stock market turnover (%), stock market value traded (% of GDP) and stock market capitalization (% of GDP) were the proxies of financial development used in model 1, 2, 3, 4 and 5 respectively.

Table 7. FDI and International Trade in BRICS –Fixed Effects

	Model 1	Model 2	Model 3	Model 4	Model 5
FDI	0.0538	-0.0209	0.1284	0.0026	-0.0815
FIN	0.5073***	-0.2437***	-0.1273***	-0.0623***	0.0074
FDI*FIN	0.0023	0.0184	-0.0179	0.0194	0.0322**
GROWTH	-0.1532***	0.0602	-0.0043	-0.0127	-0.0517*
INFL	-0.0188	0.0069	-0.0055	-0.0227	-0.0079
SAV	1.3892***	1.1858***	1.2337***	1.3087***	1.2103***
HCD	0.2249	0.4756*	0.1106	0.3989	0.3918
EXCH	0.0420	0.1893***	0.1448***	0.1725***	0.1442***
Number of countries	5	5	5	5	5
Number of observations	110	110	110	110	110
Adjusted R-squared	0.8937	0.8715	0.8831	0.8724	0.8677
F-statistic	77.35	62.69	69.65	63.10	60.58
Prob (F-statistic)	0.00	0.00	0.00	0.00	0.00

****, ** and * denote 1%, 5% and 10% levels of significance, respectively.*

Source: Author's compilation from E-Views

Using fixed effects approach (see Table 7), FDI had the following influence on exports: (1) an insignificant positive impact on exports in models 1, 3 and 4 and (2) an insignificant negative effect on exports in model 2 and 5. Financial development had a significant negative influence on exports in model 2, 3 and 4 in line with Hailu (2010b) who argued that increased levels of stock market and bond sector development may promote speculative investment in financial assets rather than in the real economy which promotes exports growth. In model 5, financial development had an insignificant positive effect on exports. Following Shahbaz and Rahman (2014) whose study observed that financial development enables export companies to acquire the fixed costs that they normally face, the current

study found out that financial development had a significant positive impact on exports in model 1. Only stock market capitalization (model 5) was found to have been a necessary condition before FDI can have a significant positive influence on exports in the BRICS. In summary, stock market capitalization as a proxy of financial development enhanced FDI's ability to promote exports growth in BRICS countries, in line with theoretical predictions.

Table 8. FDI and International Trade in BRICS –Pooled OLS

	Model 1	Model 2	Model 3	Model 4	Model 5
FDI	0.0109	-0.3518	0.0988	-0.1304	-0.3409***
FIN	0.4199***	0.2552***	-0.3139***	-0.0161	0.1822***
FDI*FIN	-0.0168	0.0668	-0.0180	0.0153	0.0678***
GROWTH	0.0930**	0.0773*	0.1518***	0.1742***	0.0452
INFL	0.0996***	0.0643*	-0.0509*	-0.0169	0.0370
SAV	0.3900***	0.2650**	0.9378***	0.5154***	0.6698***
HCD	1.7312***	1.5606***	0.1622	0.6316	1.3030***
EXCH	0.3207***	0.2653***	0.1320***	0.1907***	0.1449***
Number of countries	5	5	5	5	5
Number of observations	110	110	110	110	110
Adjusted R-squared	0.6080	0.5692	0.6635	0.4504	0.5617
F-statistic	22.13	19.01	27.86	12.16	18.46
Prob (F-statistic)	0.00	0.00	0.00	0.00	0.00

****, ** and * denote 1%, 5% and 10% levels of significance, respectively.*

Source: Author's compilation from E-Views

Under the pooled OLS approach (see Table 8), the impact of FDI on exports is threefold: (1) insignificantly positive in models 1 and 3, (2) insignificantly negative in models 2 and 4 and (3) significantly negative in model 5. A negative impact of FDI on exports shows that FDI substitutes exports in line with Hailu's 2010a argument. FDI's positive influence on exports means that the former promotes the latter, consistent with Root's (1994) factor seeking FDI narrative. Financial development was found to have had a significant positive effect on exports in models 1, 2 and 5, in line with theoretical arguments advanced by Shahbaz and Rahman (2014) and King and Levine (1993)- refer Table 2 for more detail. Financial development had a significant negative and an insignificant negative impact on exports in models 3 and 4 respectively. Just like under fixed effects, stock market capitalization (model 5) was the only financial sector development measure that was found to have spurred FDI's ability to boost exports growth in BRICS countries.

Robustness tests using the lagged panel data analysis model: To further test the robustness of the results, a lagged panel data analysis model (t-1) was used to explore whether financial development enhanced FDI's influence on the export sector in BRICS countries –see equation 3. This is in line with the view that the impact of one macroeconomic variable on another is not instantaneous (Matthew and Johnson. 2014).

$$EXPORTS_{i,t} = \beta_0 + \beta_1 FDI_{i,t-1} + \beta_2 FIN_{i,t-1} + \beta_3 (FDI_{i,t-1}. FIN_{i,t-1}) + \beta_4 X_{i,t-1} + \mu + \varepsilon \quad [3]$$

Table 8. FDI and Exports in BRICS –Fixed effects: Lagged Independent Variable Approach (t-1)

	Model 1	Model 2	Model 3	Model 4	Model 5
FDI	-0.0990	0.1293	0.1600***	0.0811	-0.0583
FIN	0.5601***	-0.0740	-0.1271***	-0.0462*	0.0227
FDI*FIN	0.0313	-0.0148	-0.0243	-0.0028	0.0264*
GROWTH	-0.1643***	-0.0293	-0.0295	-0.0303	-0.0745**
INFL	-0.0659***	-0.0511*	-0.0500	-0.0653**	-0.0532**
SAV	0.9927***	1.0052***	1.0016***	1.0781***	0.9521***
HCD	0.6960***	0.6284***	0.5445***	0.6528***	0.6691***
EXCH	0.0600	0.0059	0.0430	0.0289	0.0374
Number of countries	5	5	5	5	5
Number of observations	110	110	110	110	110
Adjusted R-squared	0.8795	0.8253	0.8513	0.8295	0.8293
F-statistic	67.32	43.90	53.02	45.19	45.13
Prob (F-statistic)	0.00	0.00	0.00	0.00	0.00

****, ** and * denote 1%, 5% and 10% levels of significance, respectively.*

Source: Author's Compilation from E-Views

Table 8. FDI and Exports in BRICS –Pooled OLS: Lagged Independent Variable Approach (t-1)

	Model 1	Model 2	Model 3	Model 4	Model 5
FDI	-0.2951	-0.5025**	0.1293	-0.1065	-0.3471***
FIN	0.3761***	0.2352***	-0.2961***	-0.0289	0.1313***
FDI*FIN	0.0473	0.0987	-0.0269	0.0109	0.0651***
GROWTH	0.0901**	0.0612	0.0878	0.1387***	0.0351
INFL	0.0725**	0.0374	-0.0636**	-0.0344	-0.0053
SAV	0.3475***	0.2031*	0.8394***	0.4650***	0.6050***
HCD	1.7047***	1.6641***	0.3513	0.8570**	1.3283***
EXCH	0.3213***	0.2666***	0.1249***	0.1868***	0.1500***
Number of countries	5	5	5	5	5
Number of observations	110	110	110	110	110
Adjusted R-squared	0.5962	0.5593	0.6379	0.4401	0.5115
F-statistic	21.12	18.29	25.00	11.71	15.27
Prob (F-statistic)	0.00	0.00	0.00	0.00	0.00

****, ** and * denote 1%, 5% and 10% levels of significance, respectively.*

Source: Author's Compilation from E-Views

Consistent with the main results presented in Table 7 and 8, the lagged panel data analysis approach found out that stock market capitalization is the only financial sector development measure used that enabled FDI to have a significant positive influence on the export sector in BRICS under both the fixed and pooled OLS estimation frameworks. This is clear evidence that the main results of the study are quite robust.

6. Summary of the Study

The study had two main objectives, namely to investigate the impact of FDI on exports and to determine the influence of financial development in the FDI-exports nexus in BRICS nations using panel data analysis (fixed effects and pooled OLS) with annual data ranging from 1994 to 2015. Whilst it is clear how FDI and financial development are separately linked to exports growth, the role of financial sector development in the FDI-led exports hypothesis has not been addressed in the literature. Moreover, majority of empirical studies on FDI-led exports hypothesis have shied away from BRICS countries (see Table 1) except a study by Sahin (2018). Although the latter investigated the two-way relationship between FDI and international trade in BRICS and Turkey, their study did not focus on the role of financial sector development in promoting FDI's influence on exports growth. Both fixed effects and pooled OLS found out that among the five measures of financial development, it is only stock market capitalization that enhanced FDI triggered exports growth in BRICS countries. A similar finding was also observed using the lagged panel data analysis approach. BRICS nations are therefore urged to implement stock market capitalization enhancement policies in order to experience significant exports growth triggered by FDI.

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8. Appendix

Table 3. Correlation Analysis

	EXPORTS	FDI	GROWTH	INFL	SAV	HCD	EXCH	FIN
EXPORTS	1.00							
FDI	0.0131	1.00						
GROWTH	0.0337	0.1499	1.00					
INFL	-0.1191	-0.1530	-0.0394	1.00				
SAV	0.3973***	0.3997***	-0.1762*	-0.0518	1.00			
HCD	0.2111**	0.2419**	0.4795***	0.1288	0.0669	1.00		
EXCH	0.0898	-0.2835***	-0.245***	-0.1076	0.1138	-0.4832***	1.00	
FIN	0.1785*	0.1183	0.0959	-0.0658	0.0351	-0.1242	-0.4885***	1.00

Note: ***/**/* denotes statistical significance at the 1%/5%/10% level respectively.
Source: Author Compilation from E-Views

Table 4. Descriptive Statistics

	EXPORTS	FDI	GROWTH	INFL	SAV	HCD	EXCH	FIN
Mean	22.67	2.27	4 383	32.3	28.4	0.70	17.6	94.0
Median	24.18	2.15	3 451	6.62	25.2	0.72	8.28	80.03
Maximum	44.06	6.01	14 487	2 076	51.5	0.82	64.2	193.4
Minimum	6.73	0.17	353.3	0.26	15.1	0.45	0.66	20.8
Standard. deviation	8.65	1.45	3 655	199.8	10.29	0.08	17.63	51.30
Skewness	-0.01	0.45	1.01	9.89	0.77	-0.66	0.98	0.39
Kurtosis	2.25	2.31	3.20	101.41	2.50	2.64	2.63	1.91
Jarque-Bera	2.56	5.83	18.78	46 178	12.02	8.56	18.33	8.22
Probability	0.28	0.05	0.00	0.00	0.00	0.01	0.00	0.12
Observations	110	110	110	110	110	110	110	110

Source: Author compilation from E-Views

Table 5. Panel Stationarity Tests –Individual Intercept

	Level				First difference			
	LLC	IPS	ADF	PP	LLC	IPS	ADF	PP
LEXPORTS	-1.75**	-1.02	12.53	9.30	-2.28**	-2.80***	26.86***	49.76***
LFDI	-1.45*	-1.98**	21.07***	31.81***	-3.28**	-3.61***	32.87***	281.99***
LGROWTH	-0.52	1.99	2.63	2.10	-1.28*	-3.61***	32.87***	281.99***
LINFL	-1.86**	-3.54***	31.30***	74.39***	-5.29***	-5.57***	48.10***	116.89***
LSAV	-1.95**	-2.25**	25.80***	12.48	-2.71***	-4.49***	39.18***	64.45***
LHCD	-4.64***	-4.02***	34.59***	47.64***	-8.57***	-7.98***	69.66***	619.44***
LEXCH	-0.13	0.78	5.02	11.07	-2.57***	-2.19**	20.20**	32.77***
LFIN	-0.77	0.60	4.92	3.45	-1.32*	-4.29***	36.98***	176.78***

Note: LLC, IPS, ADF and PP stands for Levin, Lin and Chu (2002); Im, Pesaran and Shin (2003); ADF Fisher Chi Square and PP Fisher Chi Square tests respectively. *, ** and *** denote 1%, 5% and 10% levels of significance, respectively.

Source: Author's compilation from E-Views

Table 6. Johansen Fisher Panel Co-Integration Test

Hypothesised No. of CE(s)	Fisher Statistic (from trace test)	Probability	Fisher Statistic (from max-eigen test)	Probability
None	6.931	0.7319	6.931	0.7319
At most 1	6.931	0.7319	6.931	0.7319
At most 2	2.773	0.9863	58.03	0.0000
At most 3	1.386	0.9992	75.07	0.0000
At most 4	92.10	0.0000	92.10	0.0000
At most 5	133.3	0.0000	102.4	0.0000
At most 6	59.44	0.0000	55.08	0.0000
At most 7	21.06	0.0207	21.06	0.0207

Source: Author's compilation from E-Views