Impact of Domestic Investment, Market Size, and Trade Openness on Outward FDI : A Panel Data Analysis on BRICS

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Abstract

The recent phenomenal increase in the outward foreign direct investment (FDI) of emerging countries has raised concerns among policymakers. One school of thought argues that when multinational firms relocate production facilities abroad, it reduces the likelihood of concurrent investments in the home country, resulting in reduced domestic output. In this case, the outward FDI would harm the domestic investments. The other argues that the outward FDI would be more advantageous for the domestic investment when firms internationalize for entering into new markets and/or to import intermediate goods, wherein outward investments boost the returns in the home country, leading to a positive impact of outward FDI on domestic investment. The influence of the outward FDI on the domestic investment of any country or a region state cannot be generalized as each country is unique, and the drivers of investments would differ for different countries at the different development phases of each country. An attempt was made in this study to empirically trace the impact of the domestic investment, market size, and trade openness of the BRICS's members on the BRICS's outward FDI as a group. The results of the panel least square method highlighted that the variables — domestic investment and trade openness of BRICS had a positive effect on the outward FDI ; whereas, the market size of BRICS was inversely related to outward FDI of BRICS. The data were tested for stationarity and Hausman test validated the results.

Keywords : **outward FDI, market size, domestic investment, trade openness, BRICS, panel data**

JEL Classification : F21, F23, F42

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During the last two decades, a significant number of firms from emerging countries have witnessed internationalizing their business and investment, specifically in countries like India and China. This surge has been facilitated through greater participation in international trade, and cross-border mergers and acquisition activity boosted the outflows of foreign direct investment (FDI). To mention, acquisitions by India's Tata Group and China's Lenovo and Haier groups stand out as examples.

The average outward FDI flows from the emerging countries grew from just US$ 348 million in the 1970s to over US$ 350 billion in the year 2008 (UNCTAD, 2009). From the years 1991–2003, the growth rate in the number of outward-investing firms in India was 809%, higher than the corresponding growth in countries like China (805%), the Republic of Korea (611%), Brazil (116%), and Hong Kong (90%) over comparable periods (UNCTAD, 2006). In absolute terms, the BRICS dominated the outward FDI from the developing countries,

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accounting for 62% of total developing countries' stock in 2015, with China alone accounting for 36% (Perea & Stephenson, 2016). Among emerging Asian economies, the overseas expansion of Indian firms has been quite noticeable. However, post 2008, the flow of outward FDI of various developing countries fell by 6% to $1 billion in recent years.

Further, a recent global downturn led to decreased foreign investments across countries due to economic fragility and policy uncertainty in most of the affected countries. The global FDI flows fell by 18% to $1.35 trillion in 2012. However, surprisingly, the FDI flows from the developing countries proved to be much more resilient than the flows of developed countries as the developing countries accounted for 52% of the global FDI inflows for the same year 2012 (UNCTAD, 2013). In the year 2017, the MNEs from the developed economies showed a marginal decline of 3% in their outward FDI accounting to $1 trillion, however, their share in the global outward FDI flows remained at 71%. The investment activity of firms from the developing countries fell by 6% to $381 billion, while those from the transition economies rose 59% to $40 billion. For the first time since 2003, the Chinese firms witnessed a decline in their outward investments among the developing Asian countries (UNCTAD, 2018).

This increasing trend of firms moving abroad for investments has raised concerns among policymakers of the emerging countries, assuming that an increased outflow of capital would lead to having a negative impact on the domestic investment. This trade-off of outward FDI, the domestic investment, and its implications on the growth of the economy were of the highest concern to the policymakers due to its possible impact (Aluvala, 2011). The deliberations on these lines lead to two arguments — one argument is that when multinational firms relocate production facilities abroad, it reduces the likelihood of concurrent investments at home, resulting in a reduced domestic output (Lipsey & Stevens, 1992). In this case, an outward FDI would have a negative impact on the domestic investments. The other argument is that the outward FDI would be more advantageous for the domestic investment when firms internationalize to enter into new markets and/or to import intermediate goods from foreign associates at a lower cost or for access to advanced technology. In these cases, an outward investment boosts returns in the home country through reducing costs and increasing their competitiveness at both international and national levels ; as a result, the entire economy gains through the outward investment. However, the influence of outward FDI on domestic investment of the home country cannot be generalized to all the countries as each country or a region state is unique, and results would differ for different countries at different time zones and different development phases of the host country. Outward FDI depends upon the source country's level of economic development, globalization, political risk, the level of science and technology investment, and related policies (Das, 2013).

Review of Literature

An increasing trend of the developing countries' multinational corporations (MNCs) investing across the world created curiosity among researchers to examine the impact of the flow and the reasons for the flow of capital. This led to formulating theories to explain the international movement of capital. The initial belief of outward investment was that of the different levels of interest rates, exchange rate, political risk, taxes, etc. Theories state that capital would move across borders only when the rate of return is high, under the assumption of no uncertainties or risks.

However, this context failed as : (a) in a real scenario, there are bound to be uncertainties and (b) due to the control component of the firms of FDI. This posed a need to categorize the FDI into portfolio and direct investment and marked the beginning of theories focusing on the other relevant factors driving the capital flow across borders. A few theories assumed market perfections and a few of them perceived market imperfections as the reason for FDI flows while considering oligopolistic and monopolistic advantages that firms could have. The theories

connecting FDI to international trade and their impact on domestic investment majorly can be categorized into two categories. One set of theories and studies highlight the possibility of a negative effect, and the others establish a positive effect of outward FDI on domestic investment and growth of the economy.

Studies depicted that outward FDI can have a negative effect on the economic growth of the home country due to a possible crowding-out effect on investment. Svensson (1996) in his study on Swedish multinational investments abroad during the period from 1980–1990 witnessed a negative effect on the size of Sweden's capital stock. The increase in the outward FDI in Sweden was mainly because of high government taxes and high rate of interest rates that made the firms look for better opportunities in foreign countries for better gains, reducing the capital cost, and preferential tax treatment for the foreign investments. Feldstein (1994), through a regression analysis, found that a dollar increase of outward FDI reduced domestic investment by the same proportion. This dollar for dollar displacement of domestic investment by outward FDI was consistent with the Feldstein – Horioka specification.

A few of the literature focused on exports replacing the effect of outward FDI, wherein companies decided to do offshore production to export back to the home country. In this case, the exports of the home country are replaced by the foreign production through outward FDI (Kim, 2000). However, the vertical outward FDI not only replaces the exports of the finished goods, but also may affect or substitute the exports of the intermediate product that might have been used as the raw material for those countries, thereby decreasing the domestic investment. Feldstein (1994) in his study argued that there is robust substitutability for domestic investments and the outward FDI. Feldstein's study focused on the OECD countries and found a negative correlation between domestic investment and outward FDI during 1970–1980. Andersen and Hainaut (1998) in their study on the United States, Japan, Germany, and the United Kingdom for the years 1960–1990 confirmed the presence of the substitution effect. A study by Herzer and Schrooten (2008) on the German economy found that a long-run effect in comparison to the short-run had an adverse effect on the domestic investment of Germany.

Among a limited number of studies on developing countries, a study by Al-Sadig (2013) on 121 developing and transition economies for the period from 1990–2010 found that FDI outflows adversely affected the rate of domestic investments. Kayam (2009) studied the impact of outward FDI from developing countries, and the results indicated that the outward FDI from the home country increased with foreign competition in the domestic market, which was augmented by imports and inward FDI. Firms in developing countries like Africa suffer from small domestic markets and face restrictions in accessing export markets, thereby increasing the bad institutional environment, that is, instability in political and business environment.

A few studies in this area proved that outward FDI can have a positive impact on the domestic production and growth of a country by stabilizing the market and the financial indicators more so in the developing countries like India ; wherein, outward FDI complements the domestic growth (Chellasamy & Ponsabariraj, 2016). This kind of effect can be highly seen in cases where the drivers for outward FDI are built on efficiency seeking, wherein the domestic and foreign production activities are more inclined towards cost reduction through economies of scale to increase the efficiency in production. Lipsey and Stevens (1992) demonstrated a strong positive correlation between fixed investment at home and abroad by U.S. multinationals. Kalotay and Sulstarova (2010), in their study on Russian economy, found that GDP per capita and exports played an important role in determining the level of outward FDI. The results depicted that a 1% growth in exports resulted in a 0.96% increase in the FDI outward stock, while a 1% rise in GDP per capita caused a 0.65% increase of outward FDI stock.

Amal and Tomio (2012), in their study on Brazilian economy, found a direct connection between outward FDI and the domestic investment, mainly because of government's effectiveness. Klimek (2015), in his study of 125 economies across seven geographic regions over the period from 1996–2011, concluded that the quality of the institutional environment (the government's effectiveness) boosted the outward FDI stock. Calderón (2014), in a study on the Brazilian economy, found that outward FDI had a direct impact on economic development of a

country, however, the same would also exacerbate the social inequality in a nation by creating an asymmetric tax burden. Tang, Selvanathan, and Selvanathan (2008) in their study on China for the period from 1988–2003 found that FDI and domestic investment in China complemented each other proportionately and positively, leading to large domestic investments through a higher economic growth rate.

It also confirmed that the overseas production in the form of outward FDI replaced home country exports, leading to demand of tangible goods, such as machinery, technology, raw materials, or semi-processed goods and demand of intangible goods like support services or know-how skills of technology (Kim, 2000). A study on the linkages between the capital flow and domestic investment in case of Chinese economy witnessed that the complementary effects of outward FDI on domestic investment were greater than that of inward FDI (Ali et al., 2019). The increased economic activity due to complementary effect benefitted the domestic firms or the home country through increased employment rate, increased exports, and thus increased tax revenues, and also provided access to advanced technology imports for the domestic firms. When the outward FDI moved for market seeking or technology sharing, it complemented exports and yet did not reduce the home country's production (Braunerhjelm, Oxelheim, & Thulin, 2005). Similarly, Kalotay and Sulstarova (2009) found a positive relationship between outward FDI and exports of the home country. Holtbrügge and Kreppel (2012), in a case study research approach on BRICS, observed that companies were motivated primarily by market-seeking motives and access to technological and management expertise. These studies are based on the logic that the lagged imports and exports drive the current outward FDI, which implies that the rate at which the outward FDI flows is based on the performance of trade and trade openness (Dasgupta, 2009).

According to Solow's growth model, FDI has a positive effect on the economic growth of a country as FDI inflows boost capital accumulation in the economy, while in the case of developed countries, FDI is more related to knowledge transfer of skills and best business practices (Cipollina, Giovannetti, Pietrovito, & Pozzolo, 2011). However, in the case of outward FDI, the MNCs of the home country would engage themselves in outward FDI for possibly three elementary motives. These are three location advantages proposed by Dunning's eclectic paradigm: (a) Market Seeking: Getting access to the market, (b) Efficiency Seeking: Achieving cost optimization, and (c) Resource Seeking: Access to natural resources (Dunning, 1979). The developed countries would majorly look for cost optimization or efficiency-seeking and resource seeking advantages in case of outward FDI, and the developing countries like India and China, on the other hand, would be more interested in market seeking and resource seeking, mainly to encounter the domestic limitations.

According to Korbin (1976), market size and economic growth in any economy played a major role in attracting the inward FDI. The study highlighted that a relatively bigger market size in the host country attracted a huge amount of foreign investment from the developed central and Eastern Europe. Bevan, Estrin, and Meyer (2004) argued that market size matters for investment as the market size depicts the market demand and production capacity, which are the two important resultants that investors would prefer. Egger and Pfaffermayr (2009) found that the market size reflecting the level of capital and the purchasing power of people had a positive connect with the outward FDI. Similarly, a micro data analysis done on the FDI movements of South Korean firms found that the quantum of outward FDI was majorly influenced by market size and access to these markets (Kwon & Koh, 2019). Thus, countries with more capital abundance are likely to engage in more outward FDI, implying that countries with higher market size will have capital abundance and look out for better investment opportunities abroad. On the contrary, Dunning (1979) depicted that a relatively small market size would lead to outward FDI with a market-seeking motive.

Empirical studies also proved that there occurred a positive connection between trade openness or liberal policies and/or international orientation and FDI flows, which would ultimately contribute to the competitiveness among firms at both national and international levels (Culem, 1988 ; Habib & Zurawicki, 2002 ; Rodríguez & Pallas, 2008). An empirical study by Leong and Lee (2019) on Singapore and Chinese economy with data from

1994 – 2014 established that the degree of openness of China was one of the most influential determinants for the flow of Singapore's FDI to China. Thus, higher level of openness regarding trade and liberalized set of policies are expected to bring in a positive change in both inward and outward FDI. A study on select Asian economies using the fixed effect model indicated that countries with high GDP and with more liberal FDI policy had larger outward FDI (Bhasin & Jain, 2013).

Apart from the above - mentioned factors, studies have identified other related factors like labour cost, exchange rate, inflation rate, and interest rate as the economic factors influencing outward FDI. A few studies have identified labour cost as one of the determinants of outward FDI, mainly in case of developed countries like the U.S. and Europe. Bevan et al. (2004) stated that the higher the labour cost of the home country, the higher would be its outward FDI, however, this may not stand true in case of emerging economies like India and China ; wherein, the wage rates are relatively low when compared with the developed countries.

The objective of the study is confined to one of the dimensions of the three location advantages proposed by Dunning's eclectic paradigm, that is, market seeking. The market-seeking dimension focuses more upon the market access as a determinant of foreign investment, wherein the firms of the home country move abroad in search of newer and bigger markets with better domestic investments at the host country. The domestic investment of any country would depend on the policy structure of the country. Well-established theories and World Trade Organisation (WTO) since the time of its inception have been focusing on trade liberalization for better trade openness. Advocates of export-led growth through liberalized policy have proven that trade openness would lead to better foreign investments. Thus, based on the above discussion, the study selects three variables for tracing their impact on the outward FDI of BRICS, that is, domestic investment, market size, and trade openness.

Why BRICS ?

During the past few decades, when the world economy was witnessing an exponential growth in China (that grew by twenty times) and India (that grew by seven times), Brazil had equally robust growth and Russia had a growth rate by three times, Goldman Sachs coined the phrase BRICs in 2001. In the year 2011, South Africa was included into the group as many developed countries were looking at it as a new lucrative market majorly for investments (Dawson, Raj, & Karthikeyan, 2012). Having two highly populated countries as members, BRICS accounted for 40% of the world's labour force, 19.88% of the world's GDP in nominal terms, and 36.4% of the growth in purchasing power terms during the year 2010–2011. According to the UNCTAD's "World Investment Report" (2013), by 2020, the BRICS grouping is expected to account for one-third of the global economy and contribute about 49% of the global GDP growth. The BRICS members differ from each other in their expertise and specializations, however, they do share common macroeconomic concerns like inflation, fiscal deficit, and current account deficit. In case of India, the export performance has substantially increased in the post-reform period compared to the pre-reform period because of trade openness (Tripti & Bandyopadhyay, 2017). However, the current account deficit is recently increasing mainly for countries like Brazil, India, and South Africa. Nevertheless, the growth rates of exports and imports of all the member countries show an impressive increase, with China being a dominant intra-BRICS trading partner (Singh, 2016). Compared to the previous year, the total exports for BRICS in the year 2017 increased to 10.93% from 7.95%. On the other hand, the imports growth rate of BRICS moved to 17.25% from 6.79% (UNCTAD Stat Database, 2018).

Following the trends of trade, FDI is highly dominated by China among the BRICS. The outward FDI of BRICS was initiated in the early 1990s with a humble share of 2.69% of the world's outward FDI, which gradually started increasing from the early 2000s from $128 billion to $2916 billion in the year 2018, with the share of BRICS's outward FDI accounting to 9.42% of the world's outward FDI (refer to Table 1).

On the inward FDI, the BRICS, in the year 2015 alone, received 15% of the world FDI, with China receiving

Table 1. BRICS's Outward Foreign Direct Investment (US $ in Billion at Current Prices)

Year	2000	2005	2010	2011	2012	2013	2014	2015	2016	2017	2018
BRICS	128	313	983	1107	1299	1499	1666	1834	2106	2863	2916
World	7461	11903	20939	21370	22814	24819	24686	24925	26160	32383	30975
Share of BRICS OFDI in World OFDI (in %)	1.71	2.63	4.69	5.18	5.69	6.04	6.75	7.36	8.05	8.84	9.42

Source : Compiled from unctadstat.unctad.org

50% of the share (UNCTAD, 2016). BRICS members are not just an attractive destination, they are a growing source of trade and investment to many neighbouring countries, promoting South–South cooperation. Around 75% of China's outward FDI goes to Asian developing countries, 50% of South Africa's outward FDI stock goes to Asia and Africa, 35% of Indian outward FDI stock is directed to Asia. An exception is Russia, wherein 80% of its outward FDI stock goes to the developed countries, mainly because of its expertise in manufacturing defence equipment. BRICS economies depicting a dominance of South–South cooperation witnessed their destinations for investment as majorly Asia and Africa, however, which could also consider a few of those developed countries and Latin America as in case of Brazil (UNCTAD, 2016). However, an intra-BRICS study of trade and investment gives a meek picture of China being the single most dominating country.

BRICS as a group is not just an attractive destination for investment from abroad, but also a good source of FDI flowing outwards, mainly because of highly energetic transnational companies (TNCs) aiming to have international collaborations for various possible reasons like access to resources, technology, access to markets, or/and investor-friendly policies of the host countries.

The above discussion prompts an elaborate reasoning for why the outward FDI of BRICS is increasing year on year. Is it that the outward FDI of BRICS is influenced by its intensity of domestic investment, market size, and trade openness as noted in the theories and literature ? To address these reasonings, the study focuses on the following research questions :

- What is the impact of domestic investment, market size, and trade openness on outward FDI of BRICS as a group ?

- Does the influence of all the three selected variables on the outward FDI of BRICS is the same as witnessed in the literature review ?

Objective of the Study

- To trace the impact of domestic investment, market size, and trade openness on the outward FDI of BRICS.

Research Framework

Through the established theories and the review of literature, a set of three independent variables are selected to trace out their influence on the BRICS's outward FDI. The variables selected for the study are trade openness, market size, and domestic capital formation. Trade openness is selected as a representation for trade policies' liberalisation to capture their influence on the internationalisation of firms. Trade openness is the sum of exports and imports of goods and services measured as a share of GDP (gross domestic product). The data for trade openness were taken from the World Bank database. Market size, majorly representing the purchasing power of

people, indicates the demand expectations for variety and quality of goods and services in the market. GDP per capita growth rate of the respective members of BRICS is chosen as the proxy for measuring the market size of BRICS as a group. To measure the influence of the BRICS's member countries' domestic investments on the outward FDI, gross capital formation is considered as a proxy for domestic investment. Gross capital formation includes land development, plant, machinery, roads, schools, hospitals, and infrastructure development, and hence, these are apt synonyms for domestic investment. The data for gross capital formation as a percentage of GDP is from the World Bank database. Gross capital formation (percentage of GDP) is considered for the study to avoid the potential biases that could arise from the variables due to different growth levels and composition of BRICS members. This aspect is taken care for all the variables. The data for outward FDI is measured as a percentage of GDP for all the respective members of BRICS (see Table 2).

Table 2. Variables, Description, and Measures

Sl. No	Variable	Description	Measure
1	*OFDISHR*	Outward FDI as a percentage of GDP	Percentage
2	*GCFSHR*	Domestic investment - proxy - gross capital formation as a percentage of GDP	Percentage
3	*GDPPCGR*	Market Size - A proxy - gross domestic product per capita growth rate	Percentage
4	*TOPEN*	Trade openness	Percentage

$OFDISHR = f(GCFSHR, GDPPCGR, TOPEN)$

where,

OFDISHR is outward FDI percentage share of GDP.

GCFSHR is gross capital formation as a percentage share of GDP.

GDPPCGR is gross domestic product per capita growth rate.

TOPEN is trade openness.

Research Methodology

A panel least square method is opted to estimate the influence of the select variables on the outward FDI for a time of 20 years from 1999–2018. The panel least square method is run for both fixed effects and random effects. To make an appropriate choice of the method, the results of fixed effects and random effects are cross-validated by Hausman test. All these tests are performed on E - views.

Analysis and Results

To make an appropriate choice between the fixed effects and random effects model, the Hausman test is conducted. The results of Hausman test, a test for cross-section random effects indicates that the *p* - value is less than 0.05, making the study fail to accept the null hypothesis, implying that the fixed effects model is the best fit for testing the above-said objective.

The results of the panel least square run for fixed effects model, as depicted in Table 3, depicts that out of the three-independent variables, GDPPCGR (market size) is significant at the 5% level of significance ; whereas, the other two variables – GCFSHR (domestic investment) and TOPEN (trade openness) are significant at the 10% level of significance. Among the three variables, GDPPCGR representing the market size shows an inverse

Table 3. Results of Panel Least Square (Fixed Effects)

Sl. No	Variable	OLS Fixed Effects Coefficients	*R* Square	Adjusted *R* Square
1	*GCFSHR*	0.38*	0.52	0.50
2	*GDPPCGR*	-0.50**		
3	*TOPEN*	0.04*		

Note. ** is $p < 0.05$; * is $p < 0.10$

connect with the outward FDI, the dependent variable. According to the results, a 1% increase in the GDPPCGR, that is, the market size will reduce the outward FDI by 0.50%, implying that the BRICS would be looking for a market size or rather the purchasing power of the market to sell their products. If the GDP per capita growth rate in the respective members' countries increases, then the firms would like to invest more at home rather than moving out for investment. The results are supported by the findings of Dunning (1979), Korbin (1976), Bevan et al. (2004), and Egger and Pfaffermayr (2009).

The GCFSHR is a variable representing that the domestic investment has a positive coefficient highlighting a direct connection with the outward FDI, meaning higher the capital formation at the home country, the higher would be the outward FDI. A 1% increase in the GCFSHR would lead to an increase in the outward FDI by 0.38%. The positive impact of the domestic investment on the outward FDI was witnessed in studies like Dunning (1979), Cipollina et al. (2011), Cushman, (1985), Bénassy – Quéré, Fontagné, and LahrÈche-Révil (2001), and Levy - Yeyati, Panizza, and Stein (2003).

The third variable – trade openness supports the theories and confirms that the BRICS have an export-led growth phenomenon. Trade openness, having a positive coefficient, suggests that an increase in the trade openness by 1% would lead to an increase in the outward FDI by 0.04%. However, trade openness indicates a relatively lesser impact on the outward FDI when compared to the market size and domestic investment. Similar results were obtained in the studies of Habib and Zurawicki (2002), Rodríguez and Pallas (2008), and Culem (1988). The *R* - square value being 0.52 conveys that the three selected variables together explain 52 % of the changes in the outward FDI from BRICS as a group.

Conclusion and Policy Implications

Among the three determinants selected, two variables, that is, domestic investment and trade openness positively influence the outward FDI to a substantial extent ; whereas, market size representing the purchasing power of the respective BRICS's members is inversely related to the outward investment of BRICS, indicating that the firms would prefer to invest in their home country rather than going abroad in search of demand. This would further cater to the consumption economy growth of the home country, provided the purchasing power of the people improves.

The direct relationship of domestic investment and outward FDI of BRICS implies that higher the level of the gross capital formation, the higher would be the rate of outward FDI. The recent past increase in the economic growth rate and an increasing rate of outward FDI of BRICS nations justifies the results. This indicates that the BRICS nations, for a sustainable growth, need to facilitate higher degree of domestic investment and trade openness growth through a set of actionable best practices and policies. A quick reference to the investment policies of the BRICS nations draws attention on four aspects : (a) efforts to promote investment, (b) adaptable national regulations, (c) liberal trade policy, and (d) focus on structural developments. For instance, China, the most dominating country among BRICS in terms of trade and investment, needs to come up with a less rigid set of policies to expedite more opportunities for trade and investment for its current and potential trading partners. It is

the need of the hour for the BRICS to have a multidimensional and conducive growth rate for sustaining their international presence across the world, which could be facilitated by an appreciable amount of government investment on infrastructure and initiatives to further boost outward FDI through a high rate of capital formation and trade openness.

Limitations of Study and Scope for Further Research

To sum up the results of this study, it is noted that the three selected variables are in sync with the results of similar works. The three variables – market size, domestic investment, and trade openness imply the major influencing factors of business in reality. The market size, depicting the purchasing power of people, gives an idea of the size and pattern of demand and consumption of people. While market size covers the demand side of business, the variables — domestic investment and trade openness reflect the supply side of business. However, the study does not consider some of the other factors that would drive the outward FDI in BRICS nations. This forms the limitation of the study. Future scope of the study can be to further extend research to a country specific comparative study between India and China as the two bring in policy implications for the betterment of trade and investments among the BRICS.

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