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Research Proposal

The Impact of Foreign Ownership Restrictions on Inward FDI and Economic Growth: A case for BRICS countries

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Abstract

This study sets out to investigate the impact of foreign ownership restrictions on the inflow of Foreign Direct Investments (inflow of FDI). The study further examines how the inflow of FDI subsequently affects the growth of host economies. The study employs panel data analysis over the period of twenty-one years (1997 – 2018), providing empirical evidence in BRICS economies. The findings reveal that ownership restrictions have a negative impact on the inflow of FDI, while FDI positively impacts economic growth. The results primarily provide guidance to the policy makers in the BRICS economies who are responsible for providing a conducive environment for investments.

Keywords: Inflow of foreign direct investments (FDI inflows); BRICS; emerging markets; institutional factors; ownership restrictions; restrictiveness index; economic growth; financial market development; trade openness; corruption.

Declaration

I declare that this research study is my own work. It is submitted in partial fulfillment of the requirements for the degree of Master of Management in Finance and Investments at the Wits Business School, University of Witwatersrand. I also declare that I have obtained the necessary authorization and consent to carry out this research.

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1. Introduction

Attracting Foreign Direct Investment (FDI) has become an increasingly important objective for both developed and emerging economies. This is due to the commonly held perception that inward FDI has several benefits for host economies such as, access to capital, employment creation, productivity spill-overs, innovation spill-overs, and links to the global economy (Anderson & Sutherland, 2015). FDI is particularly a vital element of economic integration that affords countries a chance for economic transformation, by giving them access to accelerated growth, technical innovation, enterprise restructuring, as well as capital account relief (Bevan & Saul, 2000). As such, countries and even regions within countries actively compete to attract it (Bobonis & Shatz, 2007).

This study looks at foreign ownership restrictions to inward FDI flows and the effects thereof to economic growth in emerging countries, specifically the BRICS countries. So far there has been no study that comparatively looks at the foreign ownership restrictions and how it affects the varied in-ward flow of FDI and the subsequent effect on economic growth between Brazil, Russia, India, China and South Africa, and with a special interest in understanding the South African context. The study uses panel data analysis, comparing each country's overall level of restriction and how it explains in-ward FDI and the remnant effects on economic growth. The study applies the following as control variables: Trade openness, economic growth rate, corruption, and financial markets development. The study hypothesizes that foreign ownership restrictions has some negative influence towards inward FDI flows (Moskalev, 2010) (Makino & Beamish, 1998). We postulate that countries with the highest restriction index will receive the lowest FDI in-flow and subsequently have low economic growth, drawing from the empirical evidence that suggests that the application of ownership restrictions is detrimental (Kalinova, Palerm, & Thomsen, 2010). This assertion made by this study is also aligned with the Uppsala model, and Dunning's eclectic paradigm on ownership restrictions and FDI in-flows, while FDI and economic growth is supported by the neoclassical and endogenous growth theories.

When compared to developed countries, emerging markets have been successful in attracting an increasingly significant portion of FDI over the years (Uddin, Chowdhury, Zafar, Shafique, & Liu, 2019). According to the UNCTAD 2014 report, FDI flows remain the most stable and preferred

type of external finance even during the financial and economic crises that have been experienced globally (Erdogan & Unver, 2015). Thus, a very strong motivation for further research work to be conducted in trying to understand FDI and its determinants. What determines the inward flow of FDI, even more so for emerging markets? Capital follows returns in general, and it can be assumed that companies will invest across borders when the expected returns exceed costs (Bevan & Saul, 2000). A good investment climate considers the local institutional, regulatory and policy environment that affords companies to operate, stimulates economic growth, giving companies incentive to invest and improve productivity (Korutaro & Biekpe, 2013). However, institutional factors are gaining significance as determinants of inward FDI for emerging markets (Uddin et al., 2019).

Institutions structure political, economic and social interaction in any country. They set the tone on what is permitted in any country (Korutaro & Biekpe, 2013). Institutional factors such as ownership restrictions are common, even more so in emerging markets. Yet, the principal characteristic of FDI is the control over operations that the investor company has. Ownership of equity enables multinationals to exercise this control (Karabay, 2010). The most apparent constraints to FDI being foreign ownership restrictions, directly undermines the control an investor company would have over operations. Over the years, the degree and timing of increases in FDI into developing countries has varied greatly (Buthe & Milner, 2008), yet the foreign ownership restrictions and the economic growth patterns of each country also varied. On the backdrop of all these varied levels of FDI and country policies, it becomes imperative to ask, to what extent does ownership restrictions in the BRICS countries explain the varied levels of inward FDI flows, and to what extent is a country's economic growth impacted? To answer this question, we look at the restrictiveness index and economic growth rates of the BRICS countries over a period of twenty-one (21) years.

The remainder of the paper is organized as follows: Section 2 provides theoretical underpinnings and surveys the related literature of the linkage between FDI and foreign ownership restriction. Section 3 describes our data and statistical model. Section 4 reports the empirical results, and finally, section 5 concludes with some theoretical contribution.

2. Literature Review

Various theories pertaining to economic growth and FDI have been presented in the past. However this study aligns its arguments alongside the neoclassical and endogenous growth theories that asserts that FDI promotes economic growth in a capital strained economy by increasing volume as well as efficiency of physical investment (Adhikary, 2011). Accordingly, the endogenous growth model specifies three main channels through which FDI can impact economic growth: (1) capital accumulation in the host country can increase as a result of FDI through technology; (2) Host countries can experience an upgrade of skill levels and knowledge as a result of training received consequent to FDI; (3) The level of competition in the host country can be altered through the reduction in entry barriers and the market power of local companies as the result of FDI (Awolusi & Adeyeye, 2016). It is understood that economic growth is significantly influenced by FDI even more so when the host economy has a sufficiently developed local financial market (Alfaro, Chanda, Kalemlie-Ozcan, & Sayek, 2004).

Another theoretical underpinning for this study is derived from the Uppsala model (see e.g., Brouthers & Bamossy, 1997; and Globerman & Shapiro, 2003). This model states that companies internationalize incrementally on the basis of their ability to successfully leverage their ownership advantages into new markets (Driffield, Mickiewicz, & Temouri, 2016). Thus, companies would not invest into host countries unless they are guaranteed their ownership rights being enforced. Dunning's eclectic paradigm of FDI also indicates that a company will directly invest in a host country if it confirms three conditions (Jones and Wren 2006, 36): (1) ownership-specific asset possessed by the company, which gives the company advantages over other companies; (2) that the assets are internalized in the company; (3) that there is benefit in setting- up production in foreign country rather than exporting (Al-Eitan, 2011). Equity ownership assures the Multi-National Company (“MNC”) control over the entity (Karabay, 2010).

Xiao et al (2018) notes that FDI into emerging economies has drastically grown. For instance, the five major emerging economies, Brazil, Russia, India, China and South Africa (BRICS) remained the strongest performers in attracting FDI by successfully mobilizing total FDI inflows of ca. $252 billion, which accounted for 21% of global FDI inflows. Yet, the degree and timing of increases in FDI into developing countries as well as their economic growth has varied greatly (Buthe & Milner, 2008) and so has their restriction policies. To what extent do restriction policies in these countries explain these variations? This is an important question still to be answered for international business, policy makers as well as for finance and investment. Although various studies have

looked at trying to understand the determinants of FDI, but so far, the review conducted could not find an empirical study that assessed the relationship between FDI and ownership restrictions, a form of an institutional factor, for the BRICS countries. As well, no review was found on the resultant of effects of ownership restrictions on FDI to economic growth.

Various studies have tried to establish determinants of inward FDI flows through the application of varied theories. Most of the work done mainly focused on economic factors such as the characteristics of the host market, and the characteristics of the MNC making the investment. At the macroeconomic level, relative real wages, the relative exchange rate, economic integration, market size, cultural differences, infrastructure, credit access and economic stability were found to be strong determinants of FDI. In Nunnenkamp's (2002) analysis, market-related factors such as GDP, population, GDP per capita and GDP growth stood out among more traditional FDI determinants. However, he further noted that Agarwal (1980) and other empirical studies such as Schneider and Frey (1985), Wheeler and Mody (1992), Tsai (1994), Jackson and Markowski (1995), and Taylor (2000) found the size of host country markets to be the most dominant explanatory factor to countries' inclination to attract FDI, especially for developing countries (Nunnenkamp, 2002).

Erdogan & Unver (2015) lists the relationship between the economic, financial, demographic and political and social aspects of a country to FDI inflows. Thus, ultimately suggesting that the most vital measure of the determinants of inflows generally take into account the following variables: market size, market capitalization, GDP per capita, GDP growth, energy import, financial openness, domestic credit to private sector, corruption, regulatory quality, political stability, social security spending, education spending health spending, secondary school enrollment ratio, labour force growth, over 65 population share and urbanization rate (Erdogan & Unver, 2015).

Amongst the above mentioned macroeconomic determinants of FDI, trade openness as a measure of how free a country is to trading with others, was of interest to this study and was found to have a significant impact on the level of FDI inflow. From a theoretical view, the level of openness to trade could either have a negative or a positive effect on FDI inflows in any country, it all depends on the motive of the investors. However, Panagiotis & Konstantinos (2012) postulates that trade openness has a positive significant relationship with FDI inflow in the long run. This is despite the eight different ways that trade openness can be measured, and the divide in whether it is an export-led or import-led openness (Panagiotis & Konstantinos, 2012).

Chakrabarto (2001) cited by Nunnenkamp (2002), states that trade openness measured as exports plus imports to GDP, has the most significant positive correlation with FDI amongst all other explanatory variables. This finding is not isolated since it was supported by Asiedu (2002) also cited by Nunnenkamp (2002), when he arrived to the same conclusion post the exclusion of Sub-Saharan host countries from the sample (Nunnenkamp, 2002).

According to Erdogan & Unver (2015), bank credit advanced to the private sector in comparison to credit advanced to the public sector is a good indicator of financial development. Financial market development seems an important conduit in the transfer of FDI benefits to the host economy (Hermes & Lensink, 2003) (Erdogan & Unver, 2015). Alfaro, Chanda, Kalemlie-Ozcan, & Sayek (2004) argue that a lack of financial market development in host countries can limit the economy's ability to take advantage of the potential spillovers facilitated by FDI. This is even more pronounced in cases where there is a great technological-knowledge gap in the host country's current practices and the new technologies deployed by companies receiving FDI, since the host country would require funding to upgrade their technologies to be able to create backward linkages and take advantage of spillover opportunities.

A positive and significant relationship was found between FDI and financial market development when using the value of credit by financial intermediaries advanced to the private sector divided by GDP (Alfaro, Chanda, Kalemlie-Ozcan, & Sayek, 2004). These findings where on the premise of FDI having an effect on the development of the financial markets in the host country. Soumare et al. (2015) looked at the direct causality between FDI and the financial markets development. The study found that the ratio of credit by financial intermediaries advanced to the private sector divided by GDP granger-causes FDI inflow, but this relationship does not exist the other way around. As well, a negative but significant relationship was recorded between FDI and the ratio of credit by financial intermediaries advanced to the private sector divided by GDP (Soumare & Tchana Tchana, 2015). Otchere et al. (2016) analysed the relationship between FDI and the financial markets development in the African context, and through the application of the Granger causality test they reported the existence of a bidirectional relationship between all six financial market development indicators and FDI (Otchere, Soumare, & Yourougou, 2016).

Political landscape of the host country was also cited along side the market potential of the host economy as pertinent in explaining FDI inflow. Thus, corruption which was defined as the measure of institutional quality, was also another variable of interest. Corruption is the abuse of

public power for private benefit (Xie, Reddy, & Liang, 2017). According to Erdogan & Unver (2015), corruption reveals the level of nepotism, excessive patronage, and bribery in the political system. Research work such as that of (Egger & Winner, 2005; and Busse & Hefeker, 2007) found a significant positive relationship between corruption and FDI, while other researchers such as (Smarzynska & Wei, 2000; Voyer & Beamish, 2004; Asiedu, 2006; Gani, 2007; and Hecock & Japsen, 2013) found a significant but negative relationship between the variables (Erdogan & Unver, 2015).

Corruption is said to be a major economic problem experienced by developing countries where in significant levels of corruption impair capital inflows (Barbopoulos, Marshall, MacInnes, & McColgan, 2014; Kaufmann, 2005; Weitzel & Berns,2006) (Xie, Reddy, & Liang, 2017). However, Cuervo-Cazurra (2006) found that corruption resulted in a relatively higher FDI in countries with slightly higher levels of corruption, while countries that had signed the OECD convention on combating bribery showed less interest in investing into countries with corrupt tendencies, thus a relatively lower FDI inflow rates from those investee countries. Thus suggesting that laws against bribery in the MNC's country of origin may act as a deterrent against participation in host countries that practice corrupt behaviours, while MNCs' from countries that are "corruption incline" will turn to invest into countries that also are that way inclined (Cuervo-Cazurra, 2006).

Macroeconomic determinants of FDI have thus far attempted to give insights into why capital holders would want to make the investment. On the other end of this investment case are host countries who are the recipients of FDI. What are the key factors attracting host countries' to FDI? According to Ketteni & Kottaridi (2019), FDI is a bundle of resources, both tangible and intangible that are transferred from one country to another in exchange for returns to MNCs, while host countries gain from spillover effects, resulting in economic growth. Specific to economic growth, the existing research studies have looked at the effects of economic growth rate or GDP growth in relation to the inflow of FDI as an attempt to indicate the economic potential of the host country. According to Bilgili, Tuluce & Dogan (2012) findings, a statistically significant positive relationship was estimated between GDP growth rate and FDI inflow, while other research work found a statistically insignificant positive relationship between GDP per capita and FDI inflows (Erdogan & Unver, 2015). Economic growth implies an increase in income and thus an increase in consumption, thus translating to a possibility for market growth, which sets a strong case for FDI inflow.

Mahembe & Odhiambo (2016) examined the relationship between FDI and economic growth in Southern African Development Community (SADC) countries. They note that there are four possible casual relationship between FDI and economic growth and they are as follows: 1) growth driven FDI, where GDP impacts FDI such that any positive growth in economic growth attracts more FDI; 2) FDI directed growth, wherein growth in inflows results in growth in the real sector; 3) Feedback relationship between FDI and economic growth, wherein the two have a bi-directional relationship; 4) A situation wherein there is no causal relationship between FDI and economic growth. Their conclusion on the study they conducted was that, there was still mixed and inconclusive results in the relationship between FDI and economic growth. This is mainly due to the varied estimation techniques and the proxies used to measure FDI inflows, wherein some studies used stock as a proxy while others used the level of FDI inflows and others elected FDI as a percentage of GDP (Mahembe & Odhiambo, 2016). The results of their study, using stock as an FDI proxy, finds that there is a uni-directional relationship between GDP and FDI in the middle-income countries of SADC, while no relationship was picked up at all between the two variables in the low-income SADC countries.

Another strand of the literature analyzed the determinants of FDI at an industry or company level. For example, for companies in the manufacturing and services sectors in Sweden, Karpaty & Poldahl (2006) found that the factors associated with the companies' ownership and variables such as human capital, capital intensity and the intensity in the use of energy positively affect a company's decision to invest in such sectors . As well, another study looked at the case of the food processing industry in the United Kingdom, conducted by Giulietti, Mccorriston and Osborne (2004), which showed that the property of the company and the market structure are important variables foreign companies considered when deciding to invest in that sector (Garavito, Iregui, & Ramirez, 2014). Thus, institutional factors such as ownership right are evidently becoming more important as determinants of inward FDI, even for emerging markets (Uddin, Chowdhury, Zafar, Shafique, & Liu, 2019).

What are institutions? Institutions are said to be the 'rules of the game' in relation to economic performance. It is further stated that if it was not for institutions, economies would not be in their functional state. Institutions according to North's (1991) assessment are "humanly devised constraints that structure political, economic and social interaction. They consist of both informal constraints (sanctions, taboos, customs, traditions and codes of conduct), and formal rules (constitutions, laws, property rights)". Disproportionate regulation is an outcome of inefficient

institutions (Korutaro & Biekpe, 2013). Institutions therefore can impact FDI in various forms. They may institute barriers to entry such as legal restrictions on ownership under property rights theory, which impacts the extent of control foreign players can have over an entity (Brouthers, 2013). Ownership restriction also impacts the world's view on a country's degree of trade openness. According to Adhikary (2011), the extent or degree of trade openness influences the flows of international capital per the risk-return relationship.

Mistura et al (2019) found that most countries institute FDI restrictions in a form of foreign equity limits as well as screening measures. Foreign equity restrictions are usually sector-specific, limiting the extent of foreign ownership permitted in companies or in the aggregate of companies in that sector. Equity restrictions are by far the most applied type of restriction and can take different forms: they typically prevent full or foreign-majority ownership, or prohibit foreign participation entirely; or the scope can be limited to acquisitions only instead of all foreign investments, it can also be applied only to listed companies or to investments in a specific company, or it could be applied to the entire sector, stimulating competition only among foreign investors when the threshold is attained (Mistura & Roulet, 2019).

Currently, the literature gives no robust account as to why governments apply such restrictions. However, according to Moskalev's (2010) submissions, empirical evidence (e.g., Kroszner and Strahan, 1999; Acemoglu et al., 2005; Feijen and Perotti, 2005; Chari and Gupta, forthcoming; Wan and Wong, forthcoming) suggests that the application of such restrictions is detrimental to host country economies, while Makino & Beamish (1998) established a negative relationship between ownership restrictions and FDI. This is further bolstered by a comparative view that suggests that developed countries typically place very few restrictions on cross-border M&As, thus indicating that there is no convincing justification for foreign equity restrictions (Moskalev, 2010). However, the same can be argued since the five major emerging economies were the biggest recipients of FDI yet with varied levels of restrictions.

Koyama et al (2006) argues that FDI restrictions when combined with other factors have an influence on foreign investment decisions, and this has proven to be a good predictor of countries' inward FDI performance (Koyama & Golub, 2006). This view is also shared by Kalinova, Palerm, & Thomsen (2010), who state that the FDI index illustrates an important element of countries' performance in attracting FDI inflow. They further postulate that the more restrictive the country the less FDI inflow relative to the size of the contry's economy, see Figure 1 below that clearly

illustrates this in a graphical form (Kalinova, Palerm, & Thomsen, 2010). Thus, the principal characteristic of FDI is the control over operations exercised by the investor company (Karabay, 2010).

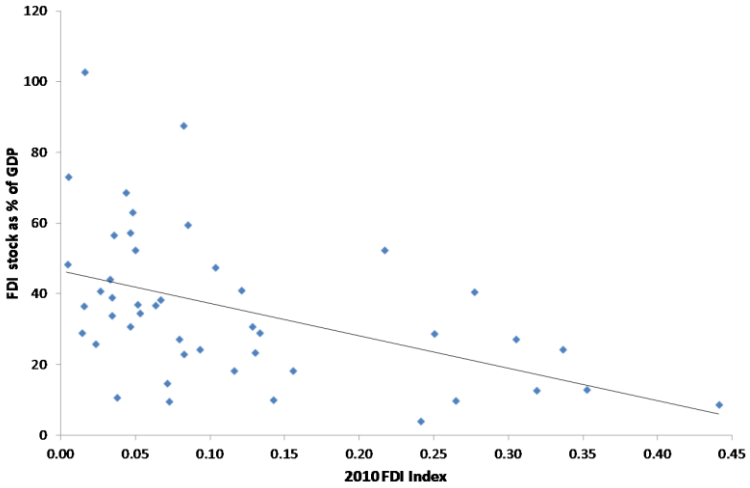


Figure 1: FDI Stocks and FDI Restrictiveness Index

Against this backdrop, one could postulate that the varied nature of the inflow of FDI into the BRICS countries can be explained by the varied nature of the countries' restriction policies. Furthermore, that this relationship has moderating effects somewhat to each host country's economy, owing to Moskalev's (2010) findings. This establishes the need to investigate the relationship between inward flow of FDI and policy restrictions, using ownership restriction as a proxy. As well, it also warrants for further investigations on what the likely impact of this relationship might be to the economic growth of each host country.

3. Research methodology

The focus of this study will be on the five BRICS countries namely: Brazil, Russia, India, China and South Africa, over the period between 1997 and 2017. The dependent variable for this study is inward flow FDI, and the data will be acquired from UNCTAD database. Inward FDI as a percentage of gross domestic product (GDP) allows for comparability across countries and time. Various studies that have looked at inward FDI such as (Ahlquist 2006; Biglaiser and DeRouen 2006; Blanton and Blanton 2007; Choi and Samy 2008; Gastanaga,Nugent, and Pashamova 1998; Jensen 2006; Jun and Singh 1996; Neumayer and Spess 2005, 1579ff; Tuman and Emmert 2004; Vandevelde, Aranda, and Zimny 1998) have also used the measure as a percentage of GDP (Buthe & Milner, 2008).

Buthe et al (2008) cautions against the quality of cross-national FDI data that is generally not very good due to variations in definitions and reporting requirements, hence the use of secondary data from UNCTAD. From UNCTAD database, FDI is not only new equity capital entering a market although it forms the largest portion of FDI. There are three components considered that forms FDI: equity capital, reinvested earnings and intra-company loans (Ketteni & Kottaridi, 2019).

For ownership restriction measure, an ownership restrictiveness index data is used, acquired from the OECD database. Although no study has thus far used the OECD restrictiveness index as a proxy for foreign ownership, however, Moskalev (2010) followed a similar estimation, using the index created by Shatz (2000) measuring the extent to which host country governments permit acquisition of domestic companies by foreign acquirers. He had constructed the index by searching various sources that documents laws restricting foreign ownership and acquisition of local companies. According to Karabay (2010), the evaluation, classification and ranking of different types of restrictitions is difficult. It is however desirable to assign weights to the restrictions to their significance eventhough it could result in abitary judgements and errors.

In order to study how ownership restriction affects the inflow of FDI, we employ three different regression models where the first is the normal Pooled Ordinary Least Square ("POLS"), the second is the fixed effect model and the third is the dynamic panel model. POLS is a model that has constant coefficients referring to both intercepts and slopes. A study can elect to pool all the data and run an ordinary least squares regression model. The fixed effect model depicts the

differences across cross-sectional units, captured in differences in the constant term and the intercept term of the regression model. Fixed effect model is best applied on cross-sectional data since the sample size is normally relatively small and exhaust all cross-sectional units (Hiestand, 2005). Fixed effects model is a primary default model for establishing causal inference with panel data (Imail & Kim, 2016). Panel data method is recommended because it can model unobserved individual effects. Panel method, irrespective of whether dynamic or static, generally is used to overcome the insufficient time data points hurdle. It allows for more degrees of freedom in the estimation (Alm & Embaye, 2013). We follow Carstensen & Toubal, (2004) and Erdogan and Unver (2015) to specify the regression model as presented below:

$$FDI_{it} = \gamma + \beta FDI_{it-1} + \alpha RI_{it} + \theta X'_{it} + \omega_{it} + \mu_i \qquad (1)$$

In equation (1) FDI_{it} is the level of flow of inward FDI of country i in year t, measured as a percentage of GDP and RI_{it} is the ownership restrictiveness index, X'_{it} is a vector of the control variables included in the model. The control variables employed in this study are (i) trade openness (TO), (ii) corruption index (COR), (iii) Financial market development (FMD) and (IV) Economic growth rate (EG). The error terms ω_{it}, μ_i are the respective time variant and time invariant components or simply the decomposition of fixed effect error term. Eq. (1) is the fixed effect through the intercept and a dynamic panel through the presence of the lagged FDI.

From the literature review, it is evident that the benefit derived from inward flow of FDI is the economic growth in host countries owing to the spill-over effects gained from the admittance of FDI (Adhikary, 2011) (Ketteni & Kottaridi, 2019). A positive and significant relationship was established between economic growth rate and FDI inflow (Bilgili, Tülüce, & Doğan, 2012). Economic growth has a rippling effect. It translates to an increase in income which in turn suggests an increase in consumption, that further translates to a possible market growth. Given the evidence on the effects of inward flow of FDI on the economic growth, this study also found it imperrative to test how this relationship fares in the BRICS economies. Thus, the the following regression model:

$$EGR_{it} = \gamma + \alpha RI_{it} + \alpha_1 FDI_{it} + \theta X'_{it} + \omega_{it} + \mu_i \qquad (2)$$

The control variables in eq.(2) are the same as in eq.(1). With the difference being the economic growth rate as the dependent variable in eq.(2) while FDI becomes a control variable. Comparable to eq.(1) where dynamic panel estimates are applied, in this instance only POLS, fixed and random effect estimates are applied for eq.(2). Scholars such us Mahembe & Odhiambo (2016) also examined the relationship between FDI and economic growth in Southern African Development Community (SADC) countries and found that FDI drives growth, however, there is a bi-directional relationship between the two variables. Thus, using eq.(1), this report formulates the following hypotheses that are tested based on the empirical results.

$$\begin{cases} H_0: Foreign\ ownership\ restrictions\ have\ a\ negative\ effect\ on\ the\ inflow\ of\ FDI \\ H_1: Foreign\ ownership\ restricitons\ have\ no\ effect\ on\ the\ inflows\ of\ FDI \end{cases} \quad (1)$$

The aim here is to test whether the coefficient of the ownership restricitveness index is negative and statisitically significantly different from zero. If the study fails to reject the null hypthesis, it will therefore conclude that ownership restrictions have a negative effect on the inflow of FDI. Using the second equation, the following hypothesis is formulated:

$$\begin{cases} H_0: Inflows\ of\ FDI\ have\ a\ positive\ effect\ on\ the\ economic\ growth\ of\ host\ countries \\ H_1: Inflows\ of\ FDI\ have\ no\ effect\ on\ the\ economic\ growth\ of\ host\ countries \end{cases} \quad (2)$$

Hypothesis two is aimed at testing how the inflow of FDI affects the economic growth. This is at the back of the mixed and inconclusive results that was found between FDI and economic growth previously by other research work.

4. Empirical Analysis

4.1 Data Description

Foreign Direct Investment:

FDI data measured as a percentage of GDP, was sourced from UNCTAD. FDI is understood to be an investment made by a company residing in a particular economy, with the intent of having a lasting interest in another company that resides in another economy. By lasting interest, a significant degree of influence on the management of the investee company is implied. This can be further interpreted as ownership of 10% or more of the voting power acquired by the investor company in the investee company. FDI flows is made up of three components: the acquisition or disposal of equity capital, and this is inclusive of the initial equity outlay and all other subsequent transactions that are within the 10% or more; reinvestment of retained earnings; and inter-company debt. UNCTDA reports FDI on the directional basis, where the direct investment statistics are grouped according to the direction of flow for the reporting country (inward or outward flow). This way, the data is more useful to policymakers and goverments in deriving investment policies.

Restrictiveness Index:

FDI regulatory restriveness index data obtained from OECD database, measures statutory restrictions prohibiting foreign direct investments across 22 economic sectors, looking at four main types of restrictions: 1) foreign equity limitations; 2) discriminatory screening or approval mechanisms; 3) restrictions on the employment of foreigners in key positions; and 4) other operational restrictions such as capital repatriation restrictions, land ownership by foreign-owned companies etc. OECD ownership restrictiveness index measures a country's equity restrictiveness on a scale of 0-to-1, 0 representing no equity restrictions and 1 a strong prohibition of equity participation. The measurement considers the evident relative importance of a specific type of restriction and assigns weights to each, thus taking the weighted approach method. The level of restrictiveness is calculated at industry level considering each industry's weights. Based on this, a national average score is obtained per sectoral composition (Koyama & Golub, 2006). Restrictions are not ranked the same due to the extent of the reach of other restrictions. For example, an outright ban on foreign ownership is far more restrictive than another regulatory requirement that still permits participation. Thus, the need for a weighted classification of the

different restrictions, which then introduces some arbitrary judgements and errors to the measurement (Golub, 2003).

Trade Openness:

Trade openness data was sourced from the World Bank national accounts data. The data is reported on an annual basis, looking at the sum of exports and imports of goods and services measured as a share of gross domestic product, using a weighted average aggregation method.

Corruption Perception Index:

The data was sourced from Transperancy International by the Data Hub website. The index grades countries according to the degree to which corruption is perceived to occur among the public officials and politics. The perception derived from business opinions obtained through various surveys conducted by independent and reputable institutions. The surveys cover the administrative and political aspects of curruption, looking at aspects such as bribery of public officials, kickbacks in public procurement, embezzlement of public funds, as well as the strength and effectiveness of public sector anti-corruption efforts. The scale of index was 0 – 10 from 1998 until 2011, and then later changed from 0 – 100 in the year 2012 onwards as a result of the updates to the methodology that was used to calculate this index.

Financial Market Development:

For the financial market development, Financial Institutions Depth Index ("FID") was used as a proxy. The data was sourced from the International Monetary Fund ("IMF") database. FID is data compiled on bank credit to the private sector as a percentage of GDP, pension fund assets to GDP, mutual fund assets to GDP, and insurance premiums (life and non-life) to GDP.

Economic Growth Rate:

The data was sourced from the World Bank national accounts database and OECD National Accounts data files. GDP is calculated as the sum of gross value added by all resident producers in that particular economy, added to any taxes while subtracting any subsidies advanced towards the value of the products. This calculation does not deduct depreciation of fabricating assets nor depletion and degradation of natural resource. The annual percentage growth rate of GDP is at market prices per constant local currency. The aggregate is calculated on the basis of constant 2010 U.S dollars. An economy's growth is measured by the change in the volume of the

economy's outputs, or in the real incomes of its residents. Thus there are three recognised indicators of calculating growth rate, and they are as folows: 1) the volume of gross domestic products (GDP) which is the sum of value value added; 2) real gross domestic income; and lastly 3) real gross national income.

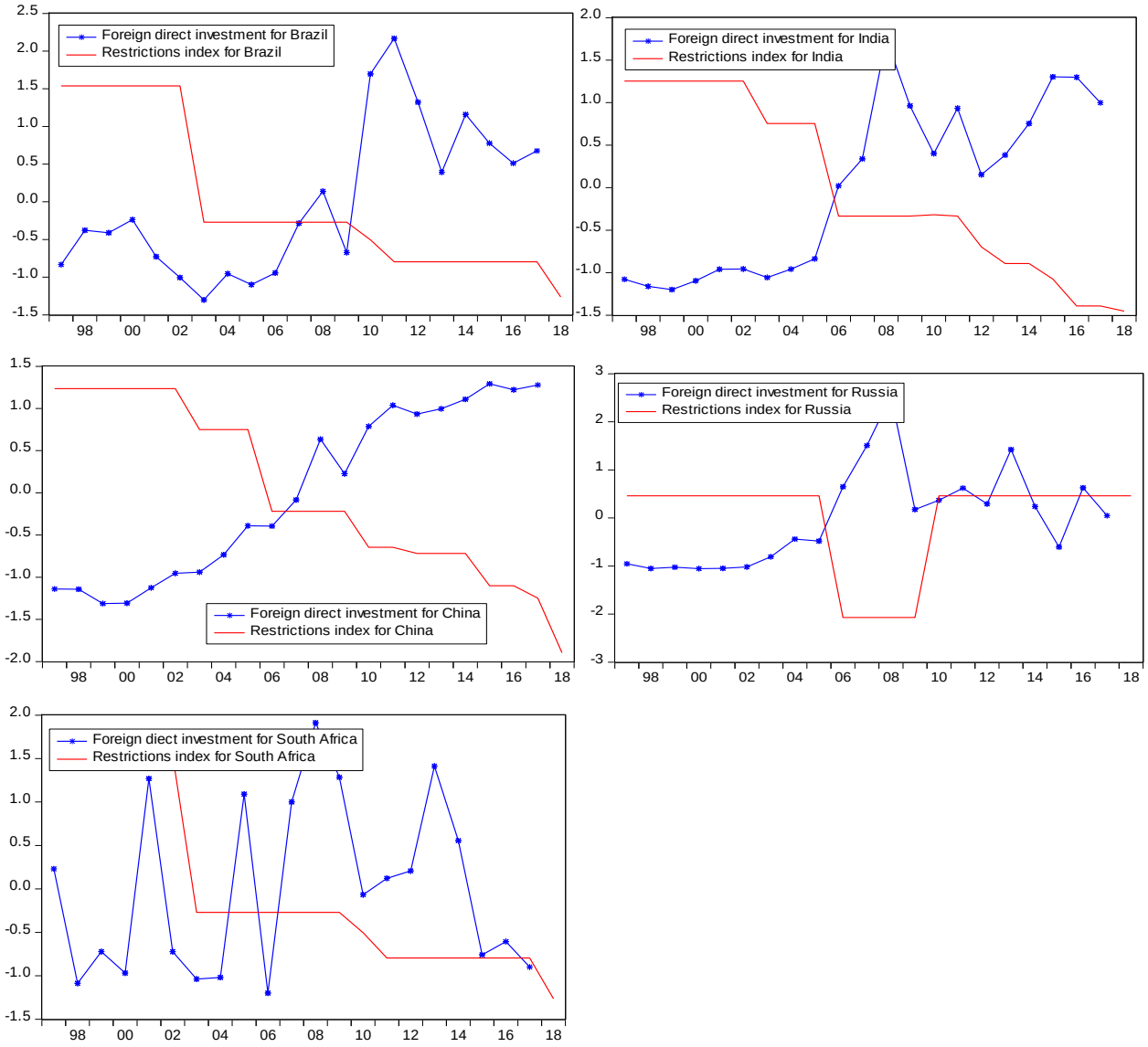
4.2 The impact of ownership restriction on FDI

Table 1: Correlation Matrix

	FDI	RI	TO	COR	FMD	EGR
FDI	1.00					
RI	-0.49	1.00				
TO	-0.24	-0.12	1.00			
COR	-0.05	-0.21	0.001	1.00		
FMD	-0.10	0.16	0.23	0.68	1.00	
EGR	-0.26	0.61	0.19	-1.9	0.20	1.00

Table 1 presents correlation coefficients between the variables. The results show a negative correlation between foreign direct investment (FDI) and the ownership restriction index. This implies that restrictions on foreign ownership is expected to have a negative effect on the inflow of FDI in BRICS economies. Contrary to Panagiotis et al. (2012) and others' findings in the literature, trade openness is negatively correlated with the inflow of foreign investment. Further, corruption index is weakly but negatively correlated to inflow of FDI. In summary, all the variables are negatively correlated with inward FDI flows.

Figure 2: Relationship between FDI and Ownership Restriction



To assist in visualizing the relationship between foreign ownership restriction and the inflow of foreign direct investment, the study has also graphical represented the two variables. The results confirm the correlation analysis observations. The relationship between the two variables is negative for all the BRICS economies.

Below in Table 2, the study present the results of the first equation using the pooled OLS, fixed effect, the random effect and the dynamic panel.

Table 2: Regression estimates

		Pooled OLS	FE	RE	GMM
Variables	RI	-7.32 (1.01)***	4.31 (4.14)	-7.31 (1.01)***	-2.95 (1.50.)**
	TO	-3.82 (0.75)***	-4.38 (1.36)***	-3.82 (0.75)***	-2.71 (0.88)***
	COR	-77.98 (19.79)***	29.89 (34.47)***	-77.98 (19.79)***	-24.06 (21.22)
	FMD	175.31 (50.92)***	940.17 (198.62)	175.31 (50.92)***	82.49 (83.98)
	EGR	3.828 (3.36)	5.33 (5.33)	3.82 (3.36)	15.24 (2.60)***
	CONSTANT	552.07 (75.24)	-351.94 (235.88)	552.066 (75.24)***	158.88 (87.80)
	FDI (-1)				0.76 (0.79)***
Model diagnostics	R- squared	0.46	0.02	0.46	
	Hausmann test	20.86 [0.00]			
	Sargant test				94.25 [0.36]
	Test for 2nd order serial correlation				0.6477 [0.5171]

Notes: ***, **,* Significant at 1%, 5% and 10%; the figures in the brackets are the standard errors. [] represents p-values

When pooled OLS is estimated, the results indicate that foreign ownership restrictions have a negative and significant effect on foreign direct investment (FDI). As a control variable, corruption is also significant and has a negative effect on the inflow of foreign direct investment. The parameter estimate of the financial market development variable is positive and significant. When the model is estimated using the fixed effect method, the parameter of foreign ownership restriction is not negative and significant while corruption also shows positive effect on FDI. Thus, the results are not consistent with the theory when a fixed effect model is employed. Trade openness was also found to be negative and significant in all models. The results for the pooled OLS and the random effect method models are the same and are consistent with the theory. When we estimate the dynamic panel model, we find that foreign ownership restriction is significant and has a negative effect on FDI. In addition, the first lag of FDI in the dynamic panel estimation is positive and significant.

The pooled OLS model, the random effect model and the dynamic panel model convey the same information and fit the data better than the fixed effect model. For robustness, the study also provides estimates of pre and post 2008's crisis. For succinctness, the study only reports on the coefficients of the main variables in the model and not on the coefficient of the dummies.

Furthermore, two diagnostic tests per Arellano and Bover (1995) and Blundell and Bond (1998) are applied. The Sargan Test over-identifies restrictions, as well as the test of second-order serial correlation in the error term. When both tests fail to reject the null hypothesis, it implies that the model is adequately specified and the instruments are valid (Malikane & Chitambara, 2017).

Table 3: Estimates of pre-crisis

		Pooled	**FE**	**RE**
Variables	RI	-6.32	8.11	-6.32
		(1.02)**	(415.98)**	(102.87)**
	TO	-3.94	-3.71	-3.94
		(0.70)***	(1.32)***	(0.70)***
	COR	-62.91	47.19	-62.91
		(19.29)***	(33.74)***	(19.29)***
	FMD	-123.37	-322.43	-123.37
		(50.47)**	(276.60)	(50.47)**
	EGR	3.46	4.90	3.46
		(3.36)	(3.31)	(3.36)
Model diagnostics	R- squared	0.56	0.03	0.56
	Hausmann test	19.08		
		(0.09)		

Notes: ***, **,* Significant at 1%, 5% and 10%; the figures in the brackets are the standard errors

The results do not differ much from the ones presented in Table.1. The ownership restrictiveness index is still negative and significant for the pooled OLS and the random effect models while positive when the fixed effect model is employed. Both Trade openness and corruption still show a negative and significant relationship while financial markets development shows varying results. Economic growth has remained consistent and in line with theory. Table 4 presents post crisis results, and what is evident is that the effect of ownership restrictiveness index is negative regardless of the model employed. In other words, the pooled OLS model, the fixed effect model and the random effect model all reveals that restrictiveness measures imposed by host economies have a negative effect on the inflow of foreign direct investment. Furthermore, the coefficient of trade openness still shows a negative and significant relationship. Corruption index is also significant and negative regardless of the model employed. The economic growth variable is positive and significant for the post crisis when the fixed effect model is employed but is not significant when the pooled OLS and the random effect models are applied.

Table 4: Estimates of post crisis

		Pooled	FE	RE
Variables	RI	-6.26	-9.39	-6.25
		(9.66)***	(3.79)**	(9.66)***
	TO	-4.15	-3.60	-4.15
		(0.66)***	(1.29)***	(0.66)***
	COR	-66.68	-33.65	-66.68
		(18.12)***	(31.58)	(18.12)***
	FMD	-129.35	-117.39	-129.35
		(47.36)***	(254.19)	(47.36)***
	EGR	3.07	7.14	3.07
		(3.48)	(3.40)**	(3.48)
Model diagnostics	R- squared	0.64	0.01	0.64
	Hausmann test	27.71	-	
		(0.03)**		

It is important to point out that the data fits well the random effect and the pooled OLS models more than it does the fixed effect model. The coefficient of determination for both the Pooled and the Random effect models is 56% for the pre-crisis results and 64% for the post-crisis results. On the other hand, the coefficient of determination for the fixed effect model only explains 3% of the variations of the pre-crisis and 1% during the post crisis.

4.3 Impact of ownership restriction on economic growth

To comprehend the joint impact of both the ownership restrictions and inward flow of FDI on economies of host countries, the study ran the model presented in eq. (2). In basic terms, the study regressed the economic growth of the host countries on their restrictiveness index, FDI and control variables. The results are presented in Table 5, indicating a positive relationship with ownership restrictions when the pooled OLS and the random effect models are adopted, yet a negative and significant relationship when the fixed effect model is applied.

Table 5: Estimates for economic growth

		Pooled	FE	RE
Variables	RI	18.47	-18.44	18.47
		(3.37)***	(13.55)**	(3.37)***
	TO	0.04	0.05	0.04
		(0.03)**	(0.04)***	(0.03)**
	COR	- 0.60	- 0.08	- 0.60
		(0.64)	(1.09)***	(0.64)
	FMD	1.90	3.07	1.90
		(1.59)	(9.92)**	(1.59)
	FDI	0.003	0.006	0.003
		(0.003)***	(0.004)	(0.003)***
Model diagnostics	R- squared	0.67	0.01	0.68
	Hausmann test	18.65		
		(0..60)		

With the exception of FDI, all other control variables in the fixed effect model are significant and showing the expected relationships. As well, only trade openness is significant in the pooled OLS and the random effect models. The study also presents the pre and post financial crisis results for this economic model.

Table 6: Pres-crisis estimates for the economic growth model

		Pooled	FE	RE
Variables	RI	-20.92	19.77	-20.92
		(13.89)	(3.34)***	(13.89)
	TO	0.08	0.06	0.08
		(0.04)**	(0.02)**	(0.04)**
	COR	-0.95	-0.54	-0.95
		(1.06)	(0.64)	(1.06)
	FMD	-0.47	1.74	-0.47
		(0.04)	(1.61)	(0.04)
	FDI	0.01	0.01	0.01
		(0.03)***	(0.003)	(0.03)***
Model diagnostics	R- squared	0.56	0.03	0.56
	Hausmann test			

Comparatively, the pre-crisis results indicate a significant difference of all other cases. Furthermore, ownership restriction has a negative relationship as expected yet not significant in both the pooled OLS and the random effect model. Trade openness was found to be positive and significant in all three models. As well, FDI indicated a positive and significant effect on economic growth when the pooled OLS and random effect models were applied. Even in this instance, the study looked at the post-crisis case, the results of which are presented in Table 7 below. Ownership restriction post crisis results revealed an expected relationship and also significant in the fixed effect model. Trade openness was found to be significant also with a negative sign in only two of the three models while foreign direct investment is positive and significant when the fixed effect model is applied.

Table 7: Post-crisis estimates for the economic growth model

		Pooled	**FE**	**RE**
Variables	RI	17.45	-21.09	17.45
		(9.66)***	(3.79)**	(9.66)***
	TO	-0.06	0.07	-0.06
		(0.66)***	(1.29)***	(0.66)***
	COR	-0.94	-0.54	-0.94
		(18.12)***	(31.58)	(18.12)***
	FMD	2.78	7.42	2.78
		(47.36)***	(254.19)	(47.36)***
	FDI	0.004	0.01	0.004
		(0.003)	(0.003)**	(0.003)
	R- squared	0.60	0.01	0.60
Model diagnostics	Hausmann test	30.49		
		(0..006)***		

In the efforts to understand the joint effects of factors, the study also introduced interaction effects between foreign direct investment and economic growth. These results are presented with restrictiveness index and the square value of the restrictiveness index results included in Table 8. The results show that neither the restrictiveness index nor the square thereof is significant. However, trade openness still has a negative relationship as was reported in the past results and is significant when certain models are applied, while corruption index is significant and negative when the pooled OLS and the random effect models are applied.

Table 8: Estimates with interaction effect & Restrictiveness Index Squared

		Pooled OLS	FE	RE	GMM
Variables	RI	-1.66	0.86	-1.66	-1.91
		(2.92)	(9.10)	(2.92)	(2.71)
	RI^2	-0.01	0.09	-0.01	0.06
		(0.08)	(0.14)	(0.08)	(0.06)
	TO	-1.86	-0.99	-1.86	-1.09
		(0.58)***	(1.03)	(0.58)***	(0.56)*
	COR	-37.66	40.67	-37.66	5.47
		(15.72)**	(24.87)	(15.72)**	(13.49)
	FMD	91.57	564.10	91.57	75.83
		(39.57)**	(164.8)***	(39.57)**	(51.61)
	EGR	-15.07	-14.14	-15.07	-4.26
		(3.20)***	(3.11)***	(3.20)***	(2.31)*
	FDI_EGR	0.13	0.12	0.13	0.10
		(0.01)***	(0.01)***	(0.01)***	(0.01)***
	CONSTANT	328.87	295.69	328.87	23.56
		(59.87)***	(184.13)	(59.87)***	(55.11)
	FDI (-1)				0.55
					(0.05)***
Model diagnostics	R- squared	0.73	0.01	0.73	
	Hausmann test	25.03			
		[0.00]			
	Sargant test				112.06
					[0.05]
	Test for 2nd order serial correlation				1.13
					[0.26]

As is evidenced, the interaction variable is significant with a positive effect on FDI. Furthermore, the lagged FDI variable of the dynamic panel model is significant and has a positive effect on the current year's FDI. With regards to the hypotheses formulated in the methodology section, the study found that the effects of ownership restriction on FDI really depend on the model adopted. The main results (Table 2) indicate that ownership restriction is negative and significant when the pooled OLS and the random effect models are adopted. This confirms the null hypothesis that ownership restrictions imposed by host countries on investee companies have a negative effect

on the inflows of FDI. The results for eq. (2) as presented in Table 5, confirms that the inflow of FDI positively explains economic growth while ownership restrictions have no significant effect on growth of the host economies. The post crisis results however demonstrates that, ownership restrictions after the crisis had a negative impact on growth of host economies when the fixed effect model is adopted.

Kalinova, Palerm, & Thomsen (2010) in their submissions and the most recent work done on the topic of FDI and foreign ownership restrictions, graphical illustrate the negative relationship that can be expected between inward FDI flow and foreign ownership restrictions. Makino & Beamish (1998) also made a similar finding when they were looking at a Japanese case. This current study also finds in favour of the theory, where it is clear that foreign ownership restrictions have a negative effect on inward FDI flow, confirming the Uppsala model and Dunning's eclectic theory that both states that unless an investee company can be guaranteed their ownership rights in host countries, there will be little to no investment made. Furthermore, this study finds in favour of Erdogan & Unver, (2015) and Xie, Reddy, & Liang's (2017) submissions, where a significant but negative relatioship between corruption and inward FDI flow was observed. With regards to the effects of financial market development on inward FDI flow, Alfaro, et al (2004) and Erdogan & Unver (2015) reported a significant and positive relationship between the variables. This is in line with the findings of this current study. Trade openness was found to have a negative relationship with FDI. Although it can be expected that the relationship can swing either way depending on the host country circumstances, however, the negative relationship uncovered is not in line with most of the theoretical submissions made in the past such as that of Nunnenkamp (2002), and Panagiotis & Konstantinos (2012). Rather, this finding demonstrates that it could be correct that ownership restrictions also moderates the world's view on a country's degree of trade openness hence the negative relationship with FDI as is currently found. The study has further found a positive and significant relationship between economic growth and FDI for BRICS economies, despite the mixed and inconclusive results previously obtained by other studies such as that of Mahembe et al (2016). Thus, confirming the neoclassical and endogenous growth theories that asserts that FDI promotes economic growth.

5. Conclusion

This study set out to investigate whether or not foreign ownership restrictions explained inward FDI flow in BRICS economies, and whether or not the resultant effect of these restrictions could ultimately limit economic growth through the deterred FDI in-flows in those host countries. The study employed different regression models while a few control variables were considered. The study establishes that foreign ownership restrictions corruption and trade openess have a negative effect on FDI, while financial markets development has a significant but positive effect on inward FDI flow. The study estimated the parameters of the model using a pooled OLS, a random effect model, a fixed effect model and a dynamic panel model. The results show that the random effect model, the pooled OLS and the dynamic panel model fit the data well. The lagged FDI variable in the dynamic panel model significantly explains the current levels of inward FDI flow.

It thus can be concluded that foreign ownership restrictions explains inward flow of FDI of host countries. In the case of BRICS countries, this relationship is negative. Although the expectation is that the more restrictive the country is the less inward FDI can be expected, however the relationship does not seem to be linear as can be obsvered in the case of a country such as China that ranks amongst the most restrictive countries yet receiving the better portion of inward FDI apportioned to the BRICS countries. It appears there are other moderating factors that also come into consideration when foreign investment decisions are made by the investors. Thus a combinations of all these unobserved factors would moderate the equation and thus affect the varied flows into the various host countries. This explains the South African case, which is relatively liberal in its foreign ownership restrictions, yet the level of inward FDI flow is not commensurate. The study also found that the inflow of FDI has a positive effect on economic growth. Thus, a country with a high levels of restrictive index can be expected to have relatively low levels of in-ward flow of FDI, which subsequently results in low economic growth patterns. This reasoning is not counter-intuitive all. It is sound to expect that where moderating factors jointly with the host country's restriveness work against the establishment of a favourable economic environement, that the investee companies would rather opt to invest elsewhere, thus the resultant poor economic growth. This clarifies why some countries are significantly richer than other and will remain so even in the future. In the South African context, although the country's restrictiveness is relatively low compared to that of China, however it appears that moderating factors once again are more negatively pronounced thus deterring in-flow of FDI.

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