7. THE IMPORTANCE OF GEOPOLITICAL RISK AND INSTITUTIONAL QUALITY INDICATORS ON FOREIGN DIRECT INVESTMENT TO BRICS COUNTRIES

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Abstract

Increasing geopolitical risks and deteriorated institutional quality could be an important obstacle on economic development, especially for developing countries. This study is aimed to examine the long run impacts of geopolitical risk and institutional quality indicators on Foreign Direct Investments (FDI) in BRICS countries during 1992-2019 with using dynamic panel data estimators. According to the findings, increasing geopolitical risk has a significant and negative impact on FDI inflows while improvements in rule of law and equal distribution of resources have significant and positive impacts on FDI inflows. Besides, long run elasticity findings revealed that developments in institutional quality have a relatively a strong impact on FDI compared with the adverse impact of increasing geopolitical risks.

Keyword: Geopoliticak risk; Rule of law; Equal distribution of resources; FDI; BRICS.

JEL Classification: E00; F21; O01

1. Introduction

Capital movements between countries and continents have increased due to the adoption of neoliberal policies since the 1970s and the rapid globalization process experienced since the 1980s. During these stages, economies have utilized not only internal sources, but also external sources in order to achieve growth and development (Meyer and Habanabakize, 2018). One of these external sources is defined as FDI. FDI refers to both the countries' power of integration with the rest of the world and also the level of globalization and it offers many benefits to economies. Some of these benefits could be indicated as follows; i. FDI stimulates domestic investments, particularly in countries with a savings deficit, ii. FDI supports capital accumulation and increases production capacity, iii. FDI brings the transfer of new technologies, production, and management methods to the host economy with it, iv. FDI contributes to the development of human capital, v. FDI accelerates the integration of economies with global markets, vi. FDI establishes competition in the economy (Forte and Moura, 2013). Besides these benefits stated above, FDI also contributes to the solution of the problems regarding the balance of payments,

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inflation, productivity and poverty (Mucuk and Demirsel, 2013). Therefore, FDI could be one of the possible answers to ongoing issues such as growth, development, unemployment, inflation and current account deficit in developing countries.

Developing countries attract foreign investors both by offering significant profit potential through all sectors and with their remarkable growth levels. Therefore, developing economies are the main destination for foreign investors. Besides, developing countries also encourage and welcome foreign investments in order to find solutions to many of the above-mentioned economic problems. So, they have developed economic policies to attract such investments to their own countries. One of the country groups seeking to benefit from the opportunities offered by FDI is the BRICS (Brazil, Russia, India, China, and South Africa). Considering the historical FDI statistics of BRICS, it can be noticed that FDI has followed an upward trend since 1991, as shown in Figure A1 in appendix A[3]. FDI investments, which increased slightly in these countries until the 2000s, gained a strong upward momentum in all countries, except for Brazil. Especially after 2003, without considering the 2008 Global Financial Crisis, this increasing momentum continued until 2013. However, after the year 2013, FDI inflows tend to decline in all BRICS countries. Further, FDI outflows in BRICS countries followed a stagnant course until the 2000s as given in Figure A1 (appendix A). This leaning turned into an upward trend for Russia and China after 2003. However, after 2013 for Russia and 2016 for China, there was a decline in the outflow of FDI. Also, the world development indicators of the World Bank show that China had the highest FDI inflow among the BRICS during the period 1992-2022, whereas South Africa had the lowest in the same period. The share of BRICS countries in global FDI increased rapidly after the 2000s. Considering the year 2020, the BRICS countries received 26.65% of the total global FDI. This rate was found to be 9.51% for the year 2005 and 13.09% for the year 2015. Given the statistics of the year 2020, China became the country that received the most FDI in the world. Furthermore, India, Brazil, Russia, and South Africa ranked 8th, 13th, 28th, and 50th in the world rank of FDI inflows in 2020, respectively. In addition, all BRICS countries moved up in this FDI ranking when compared to the previous year. The abandonment of import substitution and protectionist policies by the BRICS countries in the 1980s and 1990s and the implementation of neoliberal economic policies yielded an increase in FDI to these countries.

However, as depicted in Figure A1 (appendix A), FDI outflows of BRICS have increased during the increase in FDI inflows. It should be noted that the significant difference between FDI inflows to and outflows from BRICS countries started to close, particularly after 2013. According to the Kearney FDI Confidence Index (2022), the confidence of investors in BRICS countries has been decreasing since the period of 2013-2016. Although China ranked 2nd in drawing investors in the period 2013-2016, it fell to 3rd place in 2017, 5th in 2018, 7th in 2019, and 8th in 2020. While Brazil ranked 3rd among the countries that foreigners trust to invest in 2013, it ranked 6th in 2015, when this confidence decreased over time. Similarly, India lost its attractiveness for FDI inflows in the course of time. For instance, the FDI Confidence Index shows that India ranked 5th in 2013, but it ranked 25th in 2020. In opposition, given the FDI Confidence Index, Russia and South Africa performed poorly and couldn't enter the top twenty-five or even close to it.

In the literature, the possible determinants of FDI have been investigated frequently by using different estimation methods for different country groups or individual countries. Considering the existing studies, indicators such as real GDP, trade openness, human capital, labor force, interest rate, inflation, market size, etc. have been usually preferred to explain the possible fluctuations experienced in the level of FDI because these fundamental macroeconomic indicators usually provide prior information about the possible cyclicality of growth and the current condition of the business environment. Thereby, foreign investors carefully follow these macroeconomic indicators to find profitable investment havens (Alguacil, Cuadros, and Orts, 2011). In recent

[3] *Appendix A is available online at https://www.ipe.ro/rjef.htm*

years, some researchers also examined the possible effects of institutional quality indicators on FDI inflows. In the vast majority of these studies, it was claimed that the possible improvement in institutional quality increases the interest of foreign investors in the host country by creating a more reliable investment atmosphere. (Buchanan, Le, and Rishi, 2012; Aziz, 2018). A strong institutional structure reduces investment costs, ensures better protection of investors' interests, and makes countries attractive for FDI (Bénassy‐Quéré, Coupet and Mayer, 2007; Tocar, 2018) effectiveness, quality of regulation, political stability, etc.) were used to measure the institutional quality in the literature. However, it was determined as a deficiency that a limited number of studies in the empirical literature investigated the long-run interactions between institutional quality and FDI for BRICS countries (see Table B1 in Appendix B[4]). Especially in terms of the rule of law, BRICS countries are still in an ongoing problematic process (Azahaf and Schraad-Tischler, 2012). As reported by Nchindila (2020), weak rule of law is a very important institutional factor that reduces foreign direct investments in BRICS countries. In this regard, in BRICS countries, the rule of law is also seen as the first tool of change in the institutional structure (Neuwirth, 2019). Given the rule of law index prepared by the World Justice Project, as of 2022, among 140 countries, Brazil ranks 81st, Russia 107th, India 77th, China 95th, and South Africa 54th (World Justice Project, 2023). The rankings show that BRICS countries are not sufficiently committed to the rule of law. This ranking implies that, in BRICS countries, the powers of the government cannot be limited by the legislature, judiciary, and other independent audit bodies. It also shows that corruption is widespread, security problems may arise due to crime, violence, and civil conflicts, democratic principles are not complied with, the laws are not clear, understandable, and applicable enough, and the proprietary rights are not adequately provided for (Ramanujam *et al*., 2012; Ramanujam and Caivano, 2016).

In addition, it was discovered as a second deficiency that none of the previous studies have included the equal distribution of resources as an institutional quality indicator in their empirical models. Equal distribution of resources refers to how tangible and intangible economic resources are distributed throughout society (Sigman and Lindberg, 2015). However, the unequal distribution of economic resources indicates another institutional obstacle that BRICS countries have to face (Azahaf and Schraad-Tischler, 2012). The unequal distribution of resources across society indicates poor management of economic resources and a weak institutional structure. Ghosh and Sarkar (2023) stated that BRICS countries struggle with inequality and social chasm that lead to unfair distribution. It causes economic and political participation in BRICS countries to remain at a low level. Inadequate and low-quality public services (education, health, housing, infrastructure, etc.), low food security, a healthcare system incapable of meeting the demands, high level of corruption, inequalities in income level and wealth distribution, and inability to reduce poverty to the desired level are among the primary problems that BRICS countries strive to solve (Cassiolato and Soares, 2014; Shaidullina and Semenovskiy, 2022; Biyase *et al*., 2023). For instance, as of 2019, the poverty rate (at $6.85 per day/2017 PPP) was estimated to be 26.2%, 24.7%, 82.4%, 4.2%, and 62% for Brazil, China, India, Russia, South Africa, respectively (World Bank, 2023). For instance, the poverty rate as of 2019 ($6.85 per day/2017 PPP) was 26.2% in Brazil, 24.7% in China, 83.8% in India, 4.2% in Russia, and %62 in South Africa in 2014 (World Bank, 2023). In 2019, the income share held by the highest 20% was 57.8% in Brazil, 45.3% in China, 44.7% in India, and 45.3% in Russia (World Bank, 2023). This rate was 68.4% in South Africa in 2014 (World Bank, 2023). It can be seen that economic resources are distributed unequally among different groups or throughout society in BRICS countries.

Furthermore, it was found as a third deficiency that, in literature, there are few studies examining the role of geopolitical risks on FDI. Nevertheless, geopolitical risks could be an important source to explain the avoidance of foreign investors from the host country. Investors usually consider

[4] *Appendix B is available online at https://www.ipe.ro/rjef.htm*

geopolitical risks a source of threat that reduces investment opportunities and, therefore, they channel their investments to safe environments (Kim, Park and Kwon, 2019; Nguyen, Pham and Sala, 2022). Like many economies around the world, BRICS countries also confront with several geopolitical risks. According to the BlackRock Investment Institute (2022) report, Russia's invasion of Ukraine, its threatening attitudes towards NATO, the USA, and some EU countries, and its behavior that harms the energy security towards the West lead to an increase in geopolitical instability and risks in the region and raise the tension. In addition, the same report declares that China's military moves towards Taiwan, its disagreement with the USA for Taiwan, its trade war threats against the USA and the EU, and its territorial claims from India and some neighboring countries create many risks for the region. By the way, North Korea's nuclear program also escalates the stress in the region (BlackRock Investment Institute, 2022). In addition, the tension between China and Pakistan is considered a threat to India and leads to an increase in geopolitical risks in the region (Khan, Su, and Rizvi, 2020). Also, Brazil is struggling with several problems that increase geopolitical risk at the regional level. Brazil's territorial problems with Uruguay, its conflict with Colombia due to smuggling and its struggle with seven terrorist groups operating in the country are factors that pose significant risks for Brazil (Anser *et al*., 2021). Additionally, South Africa is struggling with social unrest (World Economic Forum, 2022). All these geopolitical risk facts could be an important obstacle to attracting foreign investments to the BRICS.

These deficiencies in the literature lay the foundation of the two motivations of the present study. The first one is to discover how institutional progress creates an effect on FDI in BRICS, whereas the second one is to understand how geopolitical uncertainties affect the investment behavior of foreign investors regarding BRICS. In this regard, this study aims to examine the long-run effects of geopolitical risk and institutional quality factors on FDI in BRICS countries for the period 1992-2019 by using dynamic panel data methods. BRICS countries constitute the most appropriate sample to measure the effect of institutional quality and geopolitical risks on FDI because of their relatively poor institutional quality levels and the geopolitical risks they confront every day. Moreover, BRICS countries constitute 41% of the global population, produce 24% of the global GDP and conduct 16% of the global trade. Furthermore, BRICS is the most developed country group among developing countries (Bose and Kohli, 2018). These facts can solely show the potential and importance of BRICS countries for the world economy. Considering their great economic potential, BRICS countries, which have the power to influence both global and regional economies, provide many attractive opportunities for foreign investors. In this respect, Brazil, Russia, and South Africa have rich natural resources, whereas China and India have a low-cost advantage with their relatively cheap labor forces (Streltsov *et al*., 2021). In addition, the strong domestic demand, improved infrastructure and developing financial sector in these countries make BRICS the center of global attraction for foreign investors (Maryam and Mittal, 2020).

In parallel with the main objective, this study provides three significant contributions to the existing literature: i. expanding the scarce empirical literature that investigates the possible determinants of FDI in BRICS countries, ii. providing unique results by determining the possible impacts of geopolitical risk on FDI inwards of BRICS countries, iii. providing unique results by estimating the long-run effect of equal distribution of resources on FDI by defining equal distribution of resources as an institutional quality factor.

This study is organized as follows. Section 2 presents the empirical literature review on the possible determinants of FDI. Section 3 includes the theoretical background and the model. Section 4 provides detailed information about the data used in the estimation process. Section 5 explains the econometrical methods adopted in the empirical analysis. Section 6 provides empirical results. Finally, section 7 consists of conclusions and policy suggestions.

2. Literature Review

There are many studies in the literature that investigate the indicators of FDI. These studies used different estimation techniques, they covered different periods, and many different country groups were chosen as samples in their empirical process. Table B1 (Appendix B) presents a brief summary of the empirical literature that examines the determinants of FDI.

As seen in Table B1 (Appendix B), many indicators ranging between macro and micro-economic variables and institutional indicators were included as potential determinants of FDI inflows. In the literature, various macro-economic indicators (such as market size (usually proxied by GDP or GDP per capita), economic growth, industrial production, inflation rate, trade volume or trade openness, labor costs or wages, gross capital formation, labor force, unemployment rate, exchange rate) were preferred by researchers to explain the changes in FDI flows. In addition, many financial indicators (such as borrowing costs, interest rate, credit market conditions, stock market capitalization, financial depth, and international capital openness) were also included by researchers in the analysis to explain the FDI inflows. Moreover, in the empirical literature, several institutional and/or governance indicators (such as democratization, political stability, voice and accountability, regulatory burden, rule of law, initial literacy, regulatory quality, control of corruption, and government effectiveness) were also used as potential determinants of FDI. Besides that, researchers also utilized many other socio-economic variables (including investment climate, business environment, innovation, information and communication technology, infrastructure, natural resource availability, human capital, and transportation) to clarify the fluctuations in FDI. However, some other stability- and risk-related variables (including economic instability, political risk, socio-political instability, country risk, and geopolitical risk) were also used in the literature to reveal their effect on FDI inflows.

As seen in Table **B**1, there are only few studies investigating the possible determinants of FDI in BRICS countries. These studies revealed some important findings for BRICS countries. Empirical findings of these studies reveal that GDP is extremely important for foreign direct investments (Vijayakumar, Sridharan and Rao, 2010; Ranjan and Agrawal, 2011; Kishor and Singh, 2015; Asongu *et al*., 2018; Maryam and Mittal, 2020). Another implication that stands out in the empirical literature on BRICS countries is that a developed infrastructure is useful in drawing FDI (Vijayakumar, Sridharan and Rao, 2010; Ranjan and Agrawal, 2011; Kishor and Singh, 2015; Asongu *et al*., 2018).

Given the results reported in the literature, another important factor for FDI inflow to BRICS countries is the trade openness (Ranjan and Agrawal, 2011; Jadhav, 2012; Asongu *et al*., 2018; Maryam and Mittal, 2020). On the contrary, empirical findings of the previous studies showed that industrial production was not successful in drawing FDI to the BRICS countries (Vijayakumar, 2010; Kishor and Singh, 2015). In addition, Maryam and Mittal (2020) indicated that gross capital formation was necessary for FDI inflows to the BRICS, whereas Ranjan and Agrawal (2011) stated that gross capital formation was not necessary for drawing FDI. Besides, as given in Table B1, macroeconomic stability (inflation, growth, etc.) affects FDI positively in some studies (e.g., Jadhav, 2012), while it has a negative correlation with FDI in some other studies (e.g., Ranjan and Agrawal, 2011). Likewise, empirical findings of the current literature also reveal that the real effective exchange rate can affect FDI both positively (e.g., Maryam and Mittal, 2020) and negatively (e.g., Vijayakumar, Sridharan and Rao, 2010). Another important variable that was defined as a determinant of FDI in BRICS countries is institutional factors. However, there is no consensus in the existing literature regarding the effect of institutional variables on FDI. Asongu *et al.* (2018) emphasized that institutional quality is an important element in drawing FDI investments. In addition, Jadhav (2012) and Jadhav and Kati (2012) reported that government effectiveness is an important factor for FDI. Furthermore, empirical results in the literature showed that, as an essential institutional indicator, the rule of law might had a positive (e.g., Jadhav, 2012

and Kechagia and Metaxas, 2022) or insignificant (e.g., Jadhav and Katti, 2012) effect on FDI inflows to the BRICS countries. Besides that, no evidence could be found in the findings reported in the literature indicating that political stability has any significant effects on FDI inflows to the BRICS (Jadhav, 2012; Jadhav and Katti, 2012). Moreover, as given in Table 1, Jadhav and Kati (2012) stated a negative relationship between corruption and FDI, whereas Jadhav (2012) reported that corruption didn't have a significant and direct effect on FDI inflows to the BRICS.

3. Theoretical Background and Empirical Model

As already implied in the literature review, there are many possible indicators that affect FDI theoretically. In early empirical studies, indicators such as marketing variables, trade barriers, cost factors (such as wage costs, production costs, etc.), investment climate, political stability, etc. were introduced as the important determinants of FDI. Especially, marketing factors such as market size, market growth, market share, etc. were commonly explained as the main determinants of FDI. The first theoretical framework to explain FDI is based on the Heckscher-Ohlin model, which is a part of the neoclassical trade theory. In this explanation, FDI is defined in terms of international capital trade. According to this approach, a relatively capital-rich economy would either export the capital-intensive good to a foreign economy or move the capital to a foreign economy, where gains from capital are relatively higher and returns on labor are relatively lower. This process keeps continuing until the factor prices are equalized (Faeth, 2009; Saini and Singhania, 2018).

However, this neo-classical explanation of FDI was criticized in the literature (see Hymer, 1960 and Faeth, 2009) due to its insufficient ability to illustrate the capital flows. From this perspective, it is claimed that the perfect competition assumption of neo-classical theory could not explain FDI flows. Therefore, as a second theoretical attempt, FDI was explained in relation to the theory of multinational enterprises (MNEs), which refers to large firms which have control or market power. According to this approach, FDI is explained from the aspect of monopolistic advantages. In this regard, foreign firms channel their investments to the host economy only when they have ownership advantages such as product differentiation, excellence in managerial skills, advanced technology, presence of internal or external economies of scale, and government interventions to avoid the costs of entering foreign markets. During the late 1970s, John D. Dunning synthesized these two theories and developed the eclectic paradigm of FDI. According to that approach, MNEs should have three types of special advantages when making a decision to invest abroad. The first of them is ownership advantages, which refer to cost reduction activities during the MNE's production process. The second one is called location advantages and it includes some stimulators such as easy access to protected markets, tax concessions, relatively low production and transportation costs, etc. that motivate production in a foreign economy. And the last one is defined as internalization and it arose because of the public good characteristic of ownership advantages. With the internalization process, the transaction costs could be lowered, the replications of new techniques could be reduced, and the firm's reputation could be maintained by effective management and quality control. Considering these descriptions, the eclectic theory of FDI is explained through three different advantages named as ownership, location and internalization (briefly OLI) (Dunning, 1988; Faeth, 2009; Kapuria and Singh, 2021).

Thereafter, new trade theory developed an alternative perspective of the relations between FDI and MNEs by following the theoretical models of Kindleberger (1969), Hymer (1960) and Caves (1971) and based on the industrial organization models. This alternate framework combines ownership and location advantages with technology and country features. From this perspective, Helpman (1984, 1985) claimed a factor-proportions hypothesis that explains why firms are

vertically integrated and produce in a geographically fragmented way. Even though this hypothesis was developed based on the assumptions of the existence of firm-specific costs, tariff and transport costs, and plant-scale economies, MNEs actually appeared in industries with small plant-scale economies, which have relatively higher firm-specific costs and high tariff and transport costs. The proximity-concentration hypothesis was introduced by considering these arguments and it relied on an exchange between maximizing proximity to customers and concentrating production to reach scale economies. Furthermore, this approach claimed that firms will very likely expand their production horizontally across borders due to the abovementioned costs and market conditions (Hortsman and Markusen, 1987; Brainard, 1997; Faeth, 2009).

In addition, Markusen *et al.* (1996) and Markusen (1997) developed another theoretical perspective named knowledge-capital model to explain FDI flows. This model integrated horizontal motives of FDI with vertical motives and claimed that the firms, which had a higher intensity of knowledge capital, leaned toward FDI rather than exports. According to this model, market size similarities, factor endowments, and transport costs asserted as parameters of horizontal FDI while factor endowments variations stated as the determinants of the vertical FDI (Faeth, 2009; Jinji *et al*., 2022).

Furthermore, many economists argued that the production motives of MNEs were more complicated when compared to pioneering studies on horizontal and vertical FDI. For instance, Hanson *et al.* (2001) indicated that the focus should be on the choice between production and distribution-oriented FDI when examining the determinants of FDI. Then, Ekholm *et al.* (2003) developed a theoretical model, which is called export-platform FDI. This theoretical approach assumes a case, where a MNE invests in a host country and exports its goods from the host country to a third country. According to this model, affiliate production now can be located in a host country to meet the final demand of the third countries. From this perspective, lowering the labor costs of host countries plays a crucial role in FDI flow. In addition, export-platform FDI increasingly draws attention, while free trade agreements (which soften internal trade barriers while tightening external trade barriers) are getting extensive (Geishecker *et al*., 2008; Faeth, 2009; Hayakawa and Tanaka, 2011; Ito, 2013; Lee and Lee, 2016).

Besides that, as the theoretical models explained above, risks and uncertainties also play a crucial role in terms of FDI inflows to the host economy. It is generally accepted that firms behave as risk averse. In other words, firms prefer to conduct their business activities in markets that do not suffer from economic or political instabilities. According to this assertion, sudden fluctuations in interest rates, prices, and exchange rates or some political-related risks such as political instability, electoral uncertainty or geopolitical confrontations might pose serious uncertainty risks that could directly affect FDI inflows. In this regard, MNEs make a decision to produce abroad in order to spread the risk and avoid the negative externalities of various uncertainties. This approach is called the risk diversification hypothesis, which explains why firms aim to diversify their production geographically to reduce risks (Rugman, 1977; Faeth, 2009; Bussy and Zheng, 2023).

When discussing the theoretical background of FDI determinants, another important indicator, which is the institutional framework, needs to be mentioned because sustainable economic development needs to be maintained with fair and holistic policies that are implemented and protected by institutions. Therefore, there is a close relationship between the quality of institutions and economic development. In particular, good governance enhances economic growth by encouraging foreign investments, which seek lower costs (North, 1992; Kapuria and Singh, 2021).

The empirical model of this study was constructed based on the general theoretical approaches and empirical studies in the literature. The main regression equation is presented below;

$$FDI_{it} = \beta_1 RGDP_{it} + \beta_2 INF_{it} + \beta_3 REERI_{it} + \beta_4 ROL_{it} + \beta_5 EDR_{it} + \beta_6 GPRI_{it} \quad (1)$$

where i=1,2,...,N represents cross-section units and t=1,2,...,T indicates the time span. In addition, FDI refers to the foreign direct investment, RGDP to the real gross domestic product, INF to the inflation, REERI to the real effective exchange rate, ROL to the rule of law, EDR to equal distribution of resources, and GPRI to the geopolitical risk. As seen in the equation, RGDP and INF are included in the empirical model to show the possible effects of macroeconomic variables, whereas REERI is included in order to calculate the possible effects of exchange rate fluctuation risks on FDI flows. Furthermore, ROL and EDR are added to the equation to reveal the remedial effects of the improvement in institutions on FDI flows. In addition, GPRI is included to determine the possible distorting effects of uncertainty-related geopolitical risks on foreign investments.

4. Data

The main aim of this study is to examine the possible long run impacts of geopolitical risk and institutional quality factors on foreign direct investment in BRICS countries by using dynamic panel data estimations. In this regard, Table B2 (Appendix B) presents the variables of the empirical model. Annual data covers the period from 1992 to 2019. Data series were ended at 2019 to obtain balanced dataset and to avoid from the possible negative shock impacts of the Pandemic on capital markets.

FDI were defined as the dependent variable while RGDP, INF and REERE were introduced as control variables on the empirical model by following the literature (e.g. Vijayakumar, Sridharan and Rao, 2010; Ranjan and Agrawal, 2011; Jadhav, 2012; Kishor and Singh, 2015; Gupta and Singh, 2016; Maryam and Mittal, 2020) that investigates the possible determinants of FDI in BRICS countries. Other determinants of FDI were included as control variables into the model to avoid omitted variable biases in the empirical estimation process. In this regard, GDP were used as the proxy for market size of the economy. According to the pioneer expectations, as market size expands, it is reasonable to expect an increase in FDI inflows to BRICS countries (Ranjan and Agrawal, 2011). Therefore, it is proper to expect that GDP will have a positive impact on FDI inflows to BRICS. Besides, increasing inflation rates could create either positive or negative effects on FDI. Gupta and Singh (2016) asserted that increased inflation rates could increase production costs and it could reduce the profit margins. As a result of this process, foreign investors discourage to make long-term direct investments. Besides, Singhania and Gupta (2011) claimed that inflation could also be beneficial. Because foreign investors are directly interested with net profits. Therefore, if their possible returns were higher than the inflation rate, they could still direct their investments to the host country. So, one might expect that inflation rate may have two-sided effects on FDI inflows to BRICS. Furthermore, REERI were used as a proxy for purchasing power of foreign investors. Depreciation of host country's currency increases the purchasing power of foreign investor in terms of foreign currency. Thereby, it is reasonable to expect a reverse relationship between REERI and FDI inflows in terms of BRICS (Vijayakumar, Sridharan and Rao, 2010).

Two types of explanatory variables were adopted in the empirical process. Initially, geopolitical risk index, which defined as GPRI, was used to reveal the possible long run influence of geopolitical risk on FDI inflows. Even though the direct impact of geopolitical risk on FDI in BRICS countries was not been investigated in the existing empirical literature, still a basic framework about how increasing geopolitical risk declines FDI inflows is described by UNCTAD (2015), Meyer and Habanabakize (2018), Arslan (2019), Afşar *et al.* (2021) and Kim *et al.* (2019). Therefore, it should be expected that GPRI had a negative impact on FDI to BRICS countries. In addition, two explanatory variables were used to reveal the possible effects of institutional quality

indicators on FDI inflows to BRICS economies. In this regard, ROL and EDR were included into the model as institutional quality indicators of BRICS by following Mlachila and Takebe (2011), Jadhav (2012), Jadhav and Katti (2012).

According to the theory, the effective rule of law creates a significant and positive impact on FDI inflows through convincing foreign investors that the host country has a healthy institutional environment (Jadhav and Katti, 2012). Moreover, equal distribution of resources, which expresses how tangible and intangible economic resources are distributed throughout society, is considered as an element representing egalitarian democracy (Sigman and Lindberg, 2015). In egalitarian societies, resources are usually distributed more healthily among individuals, institutions and organizations. In a society where resources are equally distributed the rights and freedoms of individuals could be protected, the level of poverty could be reduced, the political stability could be ensured and individuals could easily access economic resources. In egalitarian democracies, investors face less cost and make less effort to establish relationships with stakeholders in the countries they will invest in. So, they can cooperate more easily with local stakeholders and therefore FDI tends to flow to the egalitarian democracies (Siegel *et al*., 2012). FDI prefers economies with political stability, protection of rights and freedoms, and easy access to economic resources (Asiedu, 2006; Aleksynska and Havrylchyk, 2013; Phung, 2016; Dimitrova *et al*., 2019). In this regard, improvements in equal distribution of resources will have a positive effect on FDI inflows. In the empirical analysis, natural logarithmic forms of all series were used to obtain the long run elasticity results.

The descriptive statistics and Pairwise correlation matrix are given in Table B3 (Appendix B). According the correlation matrix results, lnFDI is strong and positively correlated with lnRGDP and lnEDR while lnREERI, lnINF, lnROL and lnGRPI are negatively correlated with lnFDI. Even though the basic correlation matrix could provide pioneer findings about the possible relations among the series, more advanced panel estimation techniques needs to be adopted to avoid biased and inefficient results. Therefore, heterogeneous dynamic panel data estimators are employed in the empirical process.

5. Methodology

According to the basic empirical framework, as an initial process, possible existence of unit root in series should be examined by panel unit root tests. Non-stationary series may cause mis-implications because of spurious correlations (Gujarati, 2004). Therefore, many panel unit root tests developed to examine the stationarity process of series. There are generally two types of panel unit root tests in the existing literature: the first and the second generation panel unit root tests. The first generation panel unit root tests assumed that series are cross-sectionally independent from each other. The second generation panel unit root tests were loosen the assumption of cross-sectional independence across the units by considering the potential cross-sectional correlation (Hurlin and Mignon, 2007). In this regard, to choose a proper panel unit root technique, the possible cross-sectional dependency along the series needs to be investigated with cross-section dependency tests. Even though many cross section dependency (CD) tests were developed in the literature, Pesaran's (2004) CD test was employed in the empirical process, because it provided asymptotically standard normal distribution for $T \to \infty$ and $T \to \infty$ in any order. Pesaran CD test is based on the pairwise correlation coefficients ($\hat{\rho}_{ij}$) average. The CD test statistics proposed as below:

$$CD = \sqrt{\frac{2T}{N(N-1)}}\left(\sum_{i=1}^{N-1}\sum_{j=i+1}^{N} T_{ij}\,\hat{\rho}_{ij}\right) \to N(0,1) \qquad (2)$$

If the possible cross-sectional dependence across the units reveals by CD test, then the second generation panel unit root methodology needs to be followed for non-stationarity check of individual series. But, if series are cross sectionally independent, first generation panel unit root tests will be suitable to check the unit root existence.

Although several first generation panel unit root tests have been introduced in the literature, most commonly used ones were preferred in the empirical process of this study: IPS panel unit root test and Fisher type panel unit root tests (Fisher-ADF and Fisher-PP tests). Different from other first generation panel unit root tests, both IPS and Fisher type tests allow individual unit root processes across cross-sections (Hurlin and Mignon, 2007). IPS test was developed by Im *et al.* (2003). As a first step in IPS procedure, a separate ADF regression for each cross section was specified as below:

$$\Delta y_{i,t} = \alpha_i + \rho_i y_{i,t-1} + \sum_{z=1}^{p_i} \beta_{i,z} \Delta y_{i,t-z} + \varepsilon_{i,t} \quad (3)$$

for $i = 1, \dots, N$ and $t = 1, \dots, T$. After the estimation of individual ADF regressions, the average of the t-statistics for ρ_i from each ADF regressions allows to reach IPS test statistic stated as below:

$$\overline{t_{NT}} = \frac{1}{N} \sum_{i=1}^{N} t_{iT}(p_i, \beta_i) \quad (4)$$

where $t_{iT}(p_i, \beta_i)$ with $\beta_i = (\beta_{i,1}, \dots, \beta_{i,p_i})$ states the t statistics of i^{th}country's unit root test. Fisher type tests were proposed as an alternative for heterogeneous models to investigate unit root existence. If it is assumed that the basic time series unit root test statistics are continuous, the probability values related to these statistics will be uniform (0,1) variables. In this regard, Maddala and Wu (1999) developed a Fisher-ADF test statistic under the assumption of cross-sectional independence stated as below:

$$P_{MW} = -2 \sum_{i=1}^{N} \log(p_i) \rightarrow x_{2N}^2 \quad (5)$$

where p_i denotes the probablity value obtained from any individual unit root test of cross-section i. In addition, Choi (2001) introduced a Fisher-PP test statistic which is a similar standardized statistic for large N panels given as below:

$$Z_{MW} = \frac{1}{\sqrt{N}} \sum_{i=1}^{N} \emptyset^{-1}(p_i) \rightarrow N(0,1) \quad (6)$$

where $\emptyset^{-1}$ is the inverse of the standard normal cumulative distribution function. However, if individual series were cross-sectionally dependent, an examination of non-stationary for individual series with first generation panel unit root tests may cause serious problems such as size distortions (Kappler, 2006). Therefore, second generation panel unit root methodology presents more reliable results. Although there are several second generation panel unit root tests developed in the literature, one of the most popular second generation panel unit root tests called cross-sectionally augmented Dickey Fuller (CADF) unit root test was adopted in the empirical analysis. The CADF test was proposed by Pesaran (2007) and it eliminates the possible cross section dependence by the standard ADF regressions augmented with the cross section averages of lagged levels and the first differences of each series. The CADF test statistic stated as below.

$$CADF_i = \frac{\Delta y_i' \bar{M}_x y_{i,-1}}{\hat{\sigma}_i (y_{i,-1}' \bar{M}_x y_{i,-1})^{1/2}} \quad (7)$$

where $\Delta y_i = (\Delta y_{i1}, \Delta y_{i2}, \dots., \Delta y_{iT})'$, $y_{i,-1} = (y_{i0}, y_{i1}, \dots, y_{i,T-1})'$, $\bar{M}_x = I_T - \bar{x}(\bar{x}'\bar{x})^{-1}\bar{x}'$, $\bar{x} = (\tau, \Delta\bar{y}, \bar{y}_{-1})$, $\tau = (1,1, \dots,1)'$, $\Delta\bar{y} = (\Delta\bar{y}_1, \Delta\bar{y}_2, \dots, \Delta\bar{y}_T)'$, $\bar{y}_{-1} = (\bar{y}_0, \bar{y}_1, \dots, \bar{y}_{T-1})'$ and $\hat{\sigma}_i^2 = \frac{\Delta y_i' M_{i,x} \Delta y_i}{T-4}$.

If panel unit root tests results show that some series are stationary on level while some others are stationary on their first difference level, then the dynamic long run relationship among the series shall be investigated with panel ARDL methodology. In this regard, Pesaran and Smith (1995) introduced a dynamic heterogeneous panel data estimator named mean group (MG) for relatively large panels. MG estimator is determined with ARDL (p,q,q...,q) model thus given as below:

$$y_{it} = \sum_{j=1}^{p} \gamma_{ij} y_{i,t-j} + \sum_{j=0}^{q} \delta_{ij}' x_{i,t-j} + \mu_i + \varepsilon_{it} \quad (8)$$

where $x_{it}(kx1)$ is the vector of regressors for group i, μ_i is the group-specific effects, γ_{ij} are the lagged dependent variables coefficients and δ_{ij} are $(kx1)$ coefficient vectors. Under the conditions that some series are I(0) while others are I(1) and the error term is an I(0) for all cross-section units, the error correction model should be used to estimate long run dynamics between the variables. In this error correction model, short-run dynamics of the series is influenced bythe potential deviations from the equilibrium. In this regard, the error correction equation is proposed as below:

$$\Delta y_{it} = \varphi_i (y_{it-1} - \theta_i' X_{it}) + \sum_{j=1}^{p-1} \gamma_{ij}^* \Delta y_{i,t-1} + \sum_{j=0}^{q-1} \delta_{ij}^{*\prime} \Delta x_{i,t-j} + \mu_i + \varepsilon_{it} \quad (9)$$

where $i = 1,2, \dots., N$, $t = 1,2, \dots, T$, $\varphi_i = -1(1 - \sum_{j=1}^{p} \gamma_{ij})$, $\theta_i = \sum_{j=0}^{q} \delta_{ij} / (1 - \sum_k \gamma_{ik})$, $\gamma_{ij}^* = -\sum_{m=j+1}^{p} \gamma_{im}$, $j = 1,2, \dots, p-1$ and $\delta_{ij}^* = -\sum_{m=j+1}^{q} \delta_{im}$, $j = 1,2, \dots, q-1$. The parameter (φ_i) is named the error correction term and it defines the speed of adjustment. If the error correction term equals zero, this means the long run relationship does not exist between the variables. But, if the error correction term takes statistically significant and negative sign, this implies that variables converge to the long run equilibrium. In other words, the possible long run relationship among the series could be examined via the speed of adjustment parameter. The MG estimator based on this error correction model procedure allows the intercepts, slope coefficients, and error variances get differ across groups (Blackburne III and Frank, 2007). In addition, Pesaran , Shin and Smith (1999) developed an intermediate estimator named pooled mean group (PMG) estimator which combines both pooling and averaging. PMG estimator allows the intercept, short-run coefficients, and error variances to get different across the cross-section units just as in the MG estimator. However, PMG estimator forces the long-run coefficients to be equal across panel groups just as in fixed effects (FE) estimator. Hausman test should be used to decide which estimator is the efficient one for the current panel. If the null hypothesis of Hausman test could not be rejected, then it implies that the PMG is the efficient estimator for the model. Besides, Pesaran and Yamagata (2008) introduced a slope homogeneity test based on the comparison of two models. The first restricted model is weighted fixed effects estimator that imposes slope homogeneity, while the second un-restricted model is the cross-sectional unit specific OLS regression model. The slope homogeneity test checks the null hypothesis of slope homogeneity trough the difference of these two models (Bersvendsen and Ditzen, 2020). If the null hypothesis of slope homogeneity cannot be rejected, it implies the PMG is the proper technique to obtain long run elasticity results.

6. Empirical Results

The main aim of this study is to examine the long run relationship between foreign direct investment, real GDP, inflation, real effective exchange rate index, rule of law, equal distribution of resources and geopolitical risk index in BRICS countries during 1992-2019 through the dynamic panel data estimators. As a first step of the empirical process, the possible cross section dependence along the series were checked by CD test. Table **B**4 (Appendix B) gives Pesaran CD test results. According to the findings of CD test, lnFDI, lnRGDP, lnINF and lnGPRI showed cross-section dependence while the null hypothesis of no cross-section dependence could not be rejected for lnREERI, lnROL and lnEDR.

Considering that the results of CD test, possible unit root existence were checked with first generation panel unit root tests for lnREERI, lnROL and lnEDR, while second generation panel unit root test were employed for lnFDI, lnRGDP, lnINF and lnGPRI, Table **B**5 provides first and second generation panel unit root test results. As seen in panel A of Table B5 (Appendix B), IPS, Fisher-ADF and Fisher-PP tests were both estimated with and without deterministic trend. As given in panel A of Table **B**5 (Appendix B), the IPS test results showed that lnREERI was stationary on level for both estimations with and without trend while lnEDR stationary on its' first difference level. Besides, lnROL is stationary on level for IPS test which estimated without trend while it was stationary on its' first difference level for IPS test which estimated with deterministic trend. Fisher-ADF test results indicated that lnROL and lnEDR were stationary on level for Fisher-ADF test which estimated without trend while they were stationary on their first difference level for Fisher-ADF test which estimated with deterministic trend. In addition, lnREERI is stationary on level for both estimations of Fisher-ADF test with and without trend. Fisher-PP test results presented that lnROL and lnEDR were stationary on level for both estimations with and without trend. Moreover, lnREERI is stationary on its' first difference level for the Fisher PP test estimated without trend while it is stationary on level for the Fisher PP test estimated with deterministic trend. Even though the first generation panel unit root tests findings provided mixed results, it can be asserted that lnREERI is I(0) while lnROL and lnEDR is in I(1) process considering the simple majority of tests results.

As seen in panel B of Table B5, CADF tests were both estimated with and without deterministic trend. Considering the CADF test findings, lnFDI and lnGPRI are stationary on their first difference level for both estimations of CADF test with and without trend. In addition, lnRGDP and lnINF are stationary on level for both estimations of CADF test with and without trend. According to the second generation panel unit root test findings, lnRGDP and lnINF are in I(0) process while lnFDI and lnGPRI are in I(1) process.

As reached in panel unit root findings, some series are in I(0) while some others are in I(1) process. Considering this fact, possible long run relationship existence and the short and long run elasticity results were investigated through panel ARDL methods. Therefore, Table 6 gives the error correction term and short and long run coefficient findings of MG and PMG estimators. The long run findings of the MG estimator show that error correction term is statistically significant and it takes a negative sign. This imply that a long run relationship exists between the variables. Besides, long run elasticity results of the MG estimator indicate that only lnROL and lnGPRI have a statistically significant relationship with lnFDI. As given in Table 6, by showing a significant coherence with the prior expectations, lnROL has a positive influence on lnFDI while lnGPRI has a negative effect on lnFDI.

Table 6. Short and long run elasticity results

	MG		PMG	
Error correction term	-0,947***	[-5,80]	-0,577***	[-3,05]
Long run coefficients				
lnRGDP	0,159	[0,31]	0,584***	[2,36]
lnINF	0,112	[0,58]	-0,224***	[-2,75]
lnREERI	1,202	[0,61]	0,341	[0,70]
lnROL	7,297**	[2,04]	3,137***	[2,86]
lnEDR	3,770	[0,74]	1,111***	[2,97]
lnGPRI	-0,810***	[-4,10]	-0,799*	[-1,72]
Short run coefficients				
lnRGDP	-0,888	[-0,24]	-0,823	[-0,17]
lnINF	-0,090	[-0,50]	0,217*	[1,73]
lnREERI	-0,846	[-0,97]	-0,435	[-0,89]
lnROL	-3,087	[-1,32]	-1,094	[-0,94]
lnEDR	-4,175	[-1,18]	-1,830	[-1,28]
lnGPRI	0,408***	[2,61]	0,171***	[4,62]
Hauman test stats. (x^2)	2,04	(0,91)		
Pesaran and Yamagata's $\hat{\Delta}$ test stats.	-0,08	(0,93)		
Pesaran and Yamagata's $\hat{\Delta}_{adj.}$ test statistics	-0,11	(0,91)		
Observations	122		122	
Number of countries	5		5	
Time span	1993-2019		1993-2019	

*Note: ***,**,* indicates the significance level of %1, %5 and %10, respectively. Long and short run and error correction term coefficient results are stated in columns. Test statistics of MG and PMG estimations are presented in brackets. Hausman's x^2 test statistic is stated in columns while probability value of Hausman test is indicated in parantheses. ARDL (1,1,1,1,1,1,1) model was chosen as the proper model. MG and PMG estimators were calculated by using the Stata-15 package program and with the help of the "xtpmg" command of Blackburne III and Frank (2007). Pesaran and Yamagata (2008) homogeneity tests statistics were calculated by using the Stata-15 package program and with the help of the "xthst" command of Bersvendsen and Ditzen (2020).*

The long run findings of the PMG estimator reveal that the error correction term is statistically significant and it takes a negative sign. This means a long run relationship between the series is also supported by results of the PMG estimator. According to the long run elasticity results of the PMG, expanding market size which is proxied by lnRGDP has a statistically significant and positive impact on FDI inflows to BRICS, as it is expected. This finding also shows a coherence with the empirical results of Vijayakumar, Sridharan and Rao (2010), Ranjan and Agrawal (2011), Jadhav (2012), Kishor and Singh (2015), Asongu *et al.* (2018) and Maryam and Mittal (2020). Besides, the long run PMG findings also indicated that increasing inflation rate had a statistically significant and negative impact on FDI inflows to BRICS countries. This finding is in accordance with pioneer expectations. Also, Ranjan and Agrawal (2011) and Gupta and Singh (2016) found similar empirical results about the possible impacts of inflation on FDI for BRICS sample. In addition, the PMG findings show that real effective exchange rate doesn't have any statistically

significant impact on FDI inflows to BRICS economies in the long run. Kishor and Singh (2015) also reached the similar empirical result for BRICS countries.

The long run PMG estimator findings stated that increasing geopolitical risk has an adverse impact on FDI inflows to BRICS countries. According to the long run elasticity results of PMG, 1% increase in geopolitical risk index creates an approximately 0,8% reduction in FDI. This finding is in coherence with the assertion of UNCTAD (2015). Therefore, expanding geopolitical risks could be an important obstacle for economic development process of BRICS economies. In addition, the PMG findings also indicated that institutional quality indicators had a positive and statistically significant impact on FDI inflows to BRICS countries in the long run. As seen in Table 6, FDI increases 3% with a 1% increase in rule of law. These findings show similarities with the empirical result of Jadhav (2012). Also, as given in Table 6, FDI inflows increases 1% with a 1% increase in the equal distribution of resources. This finding provides unique results which support the claim that improvements in equal distribution of resources accelerate the FDI inflows to the host economy due to the increments in conditions of egalitarian democracy. In this regard, the long run elasticity results of the PMG estimator showed the crucial importance of institutional quality indicators for foreign investors.

Even though both MG and PMG estimators were used to examine the possible long run impacts of geopolitical risk and institutional quality indicators on FDI in BRICS countries, still the possible heterogeneity across the countries should be considered to choose efficient estimator. Thereby, Hausman test was employed to reach proper dynamic panel data estimator for BRICS sample. As seen in Table 6, Hausman test results indicated that the PMG estimator was the efficient estimator. Besides, the proper and efficient dynamic panel data estimator was also decided with Pesaran and Yamagata test. As given in Table 6, the null hypothesis of slope homogeneity can not be rejected. Therefore, the findings of Pesaran and Yamagata test also supported the claim that the PMG estimator was the efficient estimator. Considering both Hausman and Pesaran and Yamagata test results, increasing institutional quality stimulates the FDI inflows to BRICS countries while raising geopolitical risk has an adverse impact on foreign investors and decreases the FDI inflows to BRICS economies.

7. Concluding Remarks and Policy Implications

FDI is described as one of the most important drivers for the economic development process, particularly for developing economies, in the literature. Considering that, many researchers empirically investigated the main indicators, which have a potential effect on foreign investors. Undoubtedly, many different types of indicators from macroeconomic or microeconomic ones to institutional or risk-related variables were specified as the main determinants of FDI for BRICS in the literature. In recent years, in a few studies, geopolitical risks were also introduced as a potential indicator for FDI inflows. The present study aims to examine the possible long-run interactions of geopolitical risk and institutional quality indicators with FDI in BRICS countries for the period 1992-2019 by using dynamic panel data estimators. Given the results achieved in this study, increasing geopolitical risk has a negative effect on FDI inflow to BRICS economies. Considering these results, raising regional or global tendencies (especially in the fields of trade, military, energy security, etc.) that affect BRICS countries could bring significant costs with the reduction of FDI. From this point of view, geopolitical risks that are not managed well surely increase the possible concerns of foreign investors, who are already uneasy and inclined to behave conservatively. In other words, geopolitical risks could cause global investors to stay at home. So, a possible decrease in FDI inflows could create an important barrier for BRICS economies to achieve their growth goals. Besides that, the empirical findings of this study also

revealed that a possible decrease in institutional quality indicators such as the rule of law and equal distribution of resources could break down the trust of foreign investors in the host country. Thereby, they might consider it very risky to carry their investments to the host country, the BRICS countries in this study.

The empirical findings of this study revealed the possible importance of geopolitical risk and institutional quality on FDI inflows to BRICS. Considering this result, policymakers of BRICS should develop social, economic, and diplomatic policies to smooth increasing tensions at local, regional, and global levels. Thereby, they could provide a more predictable business environment for investors thanks to decreasing potential risks related with geopolitical issues. Besides, increasing cooperation of the host country, particularly with regional economies, also increases the economic integration, which stimulates trade volume and reduces the production costs in terms of logistics. In this regard, BRICS can continue to ensure attractive investment opportunities for foreign investors. In addition, governments of BRICS countries should take possible measures to strengthen the rule of law, proprietary rights, and enforceability of contracts, reduce bureaucratic complexity, remove obstacles to investments, and distribute economic resources more fairly throughout the economy (e.g., favorable taxation). So, they can increase the trust of foreign investors in the BRICS countries. Therefore, policymakers can increase FDI inflows with the remedial policies on institutional quality indicators in the case of BRICS countries. The present study also has some limitations. For instance, only two types of institutional quality indicators are used in the empirical process, the time span of this study only covers 28 years, and only three control variables are included in the analysis. Future studies, if possible, should expand the time span, add more control variables to check possible interactions, and use more institutional quality indicators to check their possible effects on FDI.

References

Addison, T. and Heshmati, A., 2003. The new global determinants of FDI flows to developing countries: The Importance of ICT and Democratization. *WIDER Discussion Paper (No. 2003/45)*, United Nations University World Institute for Development Economics Research. Available at: https://www.econstor.eu/bitstream/10419/52914/1/36756565X.pdf. [Accessed in June 2022].

Afşar, M., Doğan, E. and Doğan, B.Ö., 2021. Does higher geopolitical risk limits Turkish foreign direct investments?. *Mehmet Akif Ersoy University Journal of Economics and Administrative Sciences Faculty*, 8(3), pp.1456-1475. https://doi.org/10.30798/makuiibf.859137.

Aleksynska, M. and Havrylchyk, O., 2013. FDI from the South: The role of Institutional Distance and Natural Resources. *European Journal of Political Economy*, 29, pp.28-53. https://doi.org/10.1016/j.ejpoleco.2012.09.001.

Alguacil, M., Cuadros, A. and Orts, V., 2011. Inward FDI and growth: The role of macroeconomic and institutional environment. *Journal of Policy Modelling*, 33, pp.481-496. https://doi.org/10.1016/j.jpolmod.2010.12.004.

Anser, M.K., Syed, Q.R., Lean, H.H., Alola, A.A. and Ahma, M., 2021. Do Economic Policy Uncertainty and Geopolitical Risk Lead to Environmental Degradation? Evidence from Emerging Economies. *Sustainability*, 13(11), 5886, pp.1-15. https://doi.org/10.3390/su13115866.

Arslan, C.K., 2019. Jeopolitik Riskin Doğrudan Yabancı Yatırımlar Üzerindeki Etkisi. *Eurasian Journal of Researches in Social and Economics*, 6(6), pp.477-485.

Asiedu, E., 2006. Foreign Direct Investment in Africa: The Role of Natural Resources, Market Size and Government Policy, Institutions and Political Instability. *World Economy,* 29(1), pp.63-77. https://doi.org/10.1111/j.1467-9701.2006.00758.x.

Asongu, S., Akpan, U.S. and Isihak, S.R., 2018. Determinants of foreign direct investment in fast-growing economies: evidence from the BRICS and MINT countries. *Financial Innovation*, 4(1), pp.1-17. https://doi.org/10.1186/s40854-018-0114-0.

Azahaf, N. and Schraad-Tischler, D., 2012. Governance Capacities in the BRICS. Gutersloh (Germany): Bertelsmann Stiftung.

Aziz, O.G., 2018. Institutional quality and FDI inflows in Arab economies. *Finance Research Letters*, 25, pp.111-123. https://doi.org/10.1016/j.frl.2017.10.026.

Berdsvendsen, T. and Ditzen, J., 2020. xthst: Testing for Slope Homogeneity in Stata. *CEERP Working Paper Series (No. 011)*. Centre for Energy Economics Research and Policy, Heriot-Watt University. Available at: https://ceerp.hw.ac.uk/RePEc/hwc/wpaper/011.pdf. [Accessed on May 2022].

Bénassy-Quéré, A., Coupet, M., and Mayer, T., 2007. Institutional determinants of foreign direct investment. *World economy,* 30(5), pp.764-782.

Biyase, M., Zwane, T., Mncayi, P., and Maleka, M., 2023. Do Technological Innovation and Financial Development Affect Inequality? Evidence from BRICS Countries*. International Journal of Financial Studies* ,11(1), 43.

Blackburne III, E.F. and Frank, M. W., 2007. Estimation of Nonstationary Heterogeneous Panels. *Stata Journal*, 7(2), pp.197-208. https://doi.org/10.1177/1536867X0700700204.

BlackRock, 2022. *Geopolitical Risk Dashboard.* Available at: https://www.blackrock.com/corporate/insights/blackrock-investment-institute/interactive-charts/geopolitical-risk-dashboard. [Accessed on May 2022]

Bose, S. and Kohli, B., 2018. Study of FDI Trends and Patterns in BRICS Economies during the period 1990-2015. *Emerging Economy Studies,* 4(1), pp.78-101.

Brainard, S. L., 1997. An Empirical Assessment of the Proximity-Concentration Trade-off Between Multinational Sales and Trade. *The American Economic Review*, 87(4), pp. 520-544.

Buchanan, B.G., Le, Q.V. and Rishi, M., 2012. Foreign direct investment and institutional quality: Some empirical evidence. *International Review of Financial Analysis*, 21, pp.81-89. https://doi.org/10.1016/j.irfa.2011.10.001.

Bussy, A. and Zheng, H., 2023. Responses of FDI to Geopolitical Risks: The Role of Governance, Information and Technology. *International Business Review,* 32, 1021136.

Caldara, D. and Iacoviello, M., 2021. Geopolitical Risk (GPR) Index. *American Economic Review*, 112(4), pp.1194-1225. DOI: 10.1257/aer.20191823.

Cassiolato, J.E. and Soares, M.C.C., 2014. Introduction: BRIC National Systems of Innovation. In: M.C.C. Soares *et al*., eds*. Inequality and Development Challenges*. India: Routledge, pp. xxv-Iiii.

Caves, R.E., 1971. International Corporations: The Industrial Economics of Foreign Investment. *Economica*, 38(149): pp. 1-27.

Çeviş, İ. and Çamduran, B., 2007. The Economic Determinants of Foreign Direct Investment in Developing Countries and Transition Economies. *The Pakistan Development Review*, 46(3), pp.285-299.

Choi, I., 2001. Unit root tests for panel data. *Journal of International Money and Finance*, 20(2), pp.249-272. https://doi.org/10.1016/S0261-5606(00)00048-6.

Dar, A.A., Muhammad, T. and Sıddıqı, M.W., 2020. Bureaucratic Quality and FDI Inflows Nexus: A South Asian Perspective. *Romanian Journal of Economic Forecasting,* 23(3), pp.149-168.

De Angelo, C.F., Eunni, R.V. and Fouto, N.M.M.D., 2010. Determinants of FDI in emerging markets: Evidence from Brazil. *International Journal of Commerce and Management*, 20(3), pp.203-216. https://doi.org/10.1108/10569211011076901.

Dimitrova, A., Rogmans, T. and Triki, D., 2019. Country-specific determinants of FDI inflows to the MENA region: A Systematic review and future research directions. *Multinational Business Review*, 28(1), pp.1-38. https://doi.org/10.1108/MBR-01-2019-0003.

Dunning, J.H., 1988. The Eclectic Paradigm of International Production: A Restatement and Some Possible Extensions. *Journal of International Business Studies,* 19(1), pp.1-31.

Economou, F., Hassapis, C., Philippas, N. and Tsionas, M., 2017. Foreign Direct Investment Determinants in OECD and Developing Countries. *Review of Development Economics*, 21(3), pp.527-542. https://doi.org/10.1111/rode.12269.

Ekholm, K., Forsild, R. and Markusen J. R., 2003. Export-Platform Foreign Direct Investment. NBER Working Paper Series No.9517. National Bureau of Economic Research.

Faeth, I., 2009. Determinants of Foreign Direct Investment – A Tale of Nine Theoretical Models. *Journal of Economic Surveys*, 23(1), pp.165-196.

Forte, R. and Moura, R., 2013. The Effects of Foreign Direct Investment on the Host Country's Economic Growth: Theory and Empirical Evidence. *The Singapore Economic Review*, 58(3), pp.1-28. https://doi.org/10.1142/S0217590813500173.

Geishecker, I., Nielsen, J.U-M. and Pawlik, K., 2008. How Important is Export-Platform FDI? : Evidence from Multinational Activities in Poland. *Working Papers 08-28*, Department of Economics: Aarhus School of Business.

Ghosh, N. and Sarkar, D., 2023. Beyond Poverty Alleviation: Envisioning Inclusive Growth in the BRICS Countries. Observer Research Foundation. India.

Gold, K.L., Rasiah, R., Kwek, K.T. and Muhammad, M., 2020. Export Determinants of China's FDI in Africa: Empirical Evidence from Oil/Minerals Exporting African Countries. *Romanian Journal of Economic Forecasting*, 23(3), pp.119-133.

Gujarati, D.N., 2004. *Basic Econometrics* (4th ed.). New York: The McGraw-Hill Companies.

Gupta, P. and Singh A., 2016. Causal nexus between foreign direct investment and economic growth: A study of BRICS nations using VECM and Granger causality test. *Journal of Advances in Management Research*, 13(2), pp.179-202. https://doi.org/10.1108/JAMR-04-2015-0028.

Hanson, G. H., Mataloni, R.J. and Slaughter, M. J., 2001. Expansion Strategies of U.S. Multinational Firms. WP2001-01. U.S. Department of Commerce Bureau of Economic Analysis. Available at: https://www.bea.gov/system/files/papers/WP2001-1.pdf. [Accessed on October 2023]

Hayakawa, K. and Tanaka, K., 2011. Export Platform FDI and Firm Heterogeneity. *IDE Discussion Paper No. 310.* Chiba: Institute of Developing Economies.

Helpman, E., 1984. A Simple Theory of Trade with Multinational Corporations. *Journal of Political Economy,* 92, pp.451-471.

Helpman, E., 1985. Multinational Corporations and Trade Structure. *Review of Economic Studies,* 52, pp.443-458.

Hintosova, A. B., Bruothova, M., Kubikova, Z. and Rucinsky, R., 2018. Determinants of foreign direct investment inflows: A case of the Visegrad Countries. *Journal of International Studies*, 11(2), pp.222-235. doi:10.14254/2071- 8330.2018/11-2/15.

Hortsman, I.J. and Markusen, J. R., 1987. Strategic Investments and the Development of Multinationals. *International Economic Review,* 28(1), pp.109-121.

Hurlin, C. and Mignon, V., 2007. Second Generation Panel Unit Root Tests. *Working Papers halshs-00159842*, Lyon: HAL open science.

Hymer, S. H., 1960. *The International Operations of National Firms, A Study of Direct Foreign Investment.* MIT Press, Cambridge.

Im, K.S., Pesaran, M.H. and Shin, Y., 2003. Testing for unit roots in heterogeneous panels. *Journal of Econometrics*, 115(1), pp.53-74. https://doi.org/10.1016/S0304-4076(03)00092-7.

Ito, T., 2013. Export-Platform Foreign Direct Investment: Theory and Evidence. The *World Economy*, 36(5), pp.563-581.

Jadhav, P., 2012. Determinants of Foreign Direct Investment in BRICS economies: Analysis of economic, institutional and political factor. *Procedia-Social and Behavioral Sciences*, 37, pp.5-14. https://doi.org/10.1016/j.sbspro.2012.03.270.

Jadhav, P. and Katti, V., 2012. Institutional and Political Determinants of Foreign Direct Investment: Evidence From BRICS Economies. *Poverty and Public Policy*, 4(3), pp.49-57. https://doi.org/10.1002/pop4.5.

Janicki, H.P. and Wunnava, P.V., 2004. Determinants of foreign direct investment: Empirical evidence from EU accession candidates. *Applied Economics*, 36, pp.505-509. https://doi.org/10.1080/00036840410001682214.

Kappler, M., 2006. Panel Tests for Unit Roots in Hours Worked. *ZEW Discussion Papers (No. 06-022)*. Zentrum für Europäische Wirtschaftsforschung (ZEW). Mannheim.

Kapuria, C. and Singh, N., 2021. Determinants of Sustainable FDI: A Panel Data Investigation. *Management Decisions*, 59(4), pp.877-911.

Kearney, 2022. *FDI Confidence Index*, Available at: https://www.kearney.com/foreign-direct-investment-confidence-index/previous-indices. [Accessed on January 2022].

Kechagia, P. and Metaxas, T., 2022. FDI and Institutions in BRIC and CIVETS Countries: An Empirical Investigation. Economies, 10(4). https://doi.org/10.3390/economies10040077.

Khachoo, A. Q. and Khan, M. I., 2012. Determinants of FDI inflows to developing countries: a panel data analysis. *Munich Personal RePEC Archive*, Paper No. 37278.

Khan, K., Su, C.W. and Rizvi, S.K.A., 2020. Guns and Blood: A Review of Geopolitical Risk and Defence Expenditures. *Defence and Peace Economics*. 33(1), pp.42-58. https://doi.org/10.1080/10242694.2020.1802836.

Kim, Y. S., Park, K. J. and Kwon, O. B., 2019. Geopolitical Risk and Trading Patterns of Foreign and Domestic Investors: Evidence from Korea. *Asia-Pacific Journal of Financial Studies*, 48(2), pp.269-298. https://doi.org/10.1111/ajfs.12253.

Kimino, S., Saal, D.S. and Driffield, N., 2007. Macro determinants of FDI inflows to Japan: An analysis of source country characteristics. *The World Economy*, 30(3), pp.446-469. https://doi.org/10.1111/j.1467-9701.2007.01001.x.

Kindleberger, C.P., 1969. Measuring Equilibrium in the Balance of Payments. *Journal of Political Economy*, 77(6), pp.873-891.

Kishor, N. and Singh, R. P., 2015. Determinants of FDI and its Impact on BRICS Countries: A Panel Data Approach. *Transnational Corporations Review*, 7(3), pp.269-278. https://doi.org/10.5148/tncr.2015.7302.

Kok, R. and Ersoy, A.B., 2009. Analyses of FDI determinants in Developing Countries. *International Journal of Social Economics*, 36(1/2), pp.105-123. https://doi.org/10.1108/03068290910921226.

Kumari, R. and Sharma, A. K., 2017. Determinants of foreign direct investment in developing countries: a panel data study. *International Journal of Emerging Markets*, 12(4), pp.658-682. https://doi.org/10.1108/IJoEM-10-2014-0169.

Lee, K-D. and Lee, W., 2016. Exports versus Export-Platform FDI with Endogenous Wage Determination. *Economic Modelling*, 54, pp.479-489.

Maddala, G.S. and Wu, S., 1999. A Comparative Study of Unit Root Tests with Panel Data and a New Simple Test. *Oxford Bulletin of Economics and Statistics*, 62(S1), pp.631-652. https://doi.org/10.1111/1468-0084.0610s1631.

Markusen, J.R., Venables, A.J., Konan, D.E. and Zhang, K.H., 1996. A Unified Treatment of Horizontal Direct Investment, Vertical Direct Investment, and the Pattern of Trade in Goods and Services. *NBER Working Paper*, No. 5696. Cambridge.

Markusen, J.R. 1997. Trade versus Investment Liberalisation. *NBER Working Paper*, No. 6231. Cambridge.

Maryam, J. and Mittal, A., 2020. Foreign Direct Investments into BRICS: An Empirical Analysis. *Transnational Corporations Review*, 12(1), pp.1-9. https://doi.org/10.1080/19186444.2019.1709400.

Meyer, D. F. and Habanabakize, T., 2018. An Analysis of the Relationship between Foreign Direct Investment (FDI), Political Risk and Economic Growth in South Africa. *Business and Economic Horizons*, 15(4), pp.777-788. DOI: http://dx.doi.org/10.15208/beh.2018.54.

Mlachila, M. and Takebe, M., 2011. FDI from BRICs to LICs: Emerging Growth Driver?. *IMF Working Papers* (No. 2011/178), International Monetary Fund.

Mottaleb, K. A. and Kalirajan, K., 2010. Determinants of Foreign Direct Investment in Developing Countries. A Comparative Analysis. *Margin: The Journal of Applied Economic Research*, 4(4), pp.369-404. https://doi.org/10.1177/097380101000400401.

Mucuk, M. and Demirsel, M. T., 2013. The Effect of Foreign Direct Investments on Unemployment: Evidence from Panel Data for Seven Developing Countries. *Journal of Business. Economics & Finance*, 2(53), pp.53-66.

N. Jinji *et al*., eds. 2022. *Deep Integration, Global Firms and Technology Spillovers*. Singapore: Springer.

Naude, W.A. and Krugell, W.F., 2007. Investigating geography and institutions as determinants of foreign direct investment in Africa using panel data. *Applied Economics*, 39, pp.1223-1233. https://doi.org/10.1080/00036840600567686.

Nchindila, N., 2020. Bridging Gaps Between ICC and ROL Discourse with BRICS. *Amsterdam Law Forum*, 12(2), pp.65-77. DOI: 10.37974/ALF.359.

Neuwirth, R., 2019. BRICS Law: An Oxymoron, or From Cooperation, Via Consolidation, TO Codification?. *BRICS Law Journal,* 6(4), pp.6-33.

North, D. C. 1992. *Transaction Costs, Institutions, and Economic Performance*. San Francisco: An International Center for Economic Growth Publication.

Nguyen, T. T. T., Pham, B. T. and Sala, H., 2022. Being and emerging economy: To what extent do geopolitical risks hamper technology and FDI inflows?. *Economic Analysis and Policy*, 74, pp.728-746. https://doi.org/10.1016/j.eap.2022.04.005.

Ozekhome. H.O., 2022. Do regulatory quality, government effectiveness and rule of law matter to foreign direct investment in Nigeria?. *Romanian Journal of Economic Forecasting*, 25(1), pp.160-175.

Paul, J. and Jadhav, P., 2019. Institutional determinants of foreign direct investment inflows: evidence from emerging markets. *International Journal of Emerging Markets*, 15(2), pp.245-261. https://doi.org/10.1108/IJOEM-11-2018-0590.

Pecaric, M., Kusanovic, T. and Jakovac, P., 2021. The determinants of FDI sectoral structure in the central and East European EU countries. *Economies*, 9(66). pp.1-16. https://doi.org/10.3390/ economies9020066.

Pemstein, Daniel, Marquardt, K.L., Tzelgov, E., Wang, Y., Medzihorsky, J., Krusell, J., Miri, F. and von Römer, J., 2022. The V-Dem Measurement Model: Latent Variable Analysis for

Cross-National and Cross-Temporal Expert-Coded Data (7th Ed.). *V-Dem Working Paper* (No. 21), University of Gothenburg: Varieties of Democracy Institute.

Pesaran, M.H. and Smith, R.P., 1995. Estimating long-run relationships from dynamic heterogeneous panels. *Journal of Econometrics*, 68, pp.79–113. https://doi.org/10.1016/0304-4076(94)01644-F.

Pesaran, M.H., Shin, Y. and Smith, R.P., 1999. Pooled Mean Group Estimation of Dynamic Heterogeneous Panels. *Journal of the American Statistical Association*. 94(446), pp.621-634. https://doi.org/10.1080/01621459.1999.10474156.

Pesaran, M.H., 2004. General Diagnostic Tests for Cross Section Dependence in Panels. CESifo Working Paper (No. 1229). *Center for Economic Studies and ifo Instititute*. https://www.econstor.eu/bitstream/10419/18868/1/cesifo1_wp1229.pdf

Pesaran, M.H., 2007. A simple panel unit root test in the presence of cross-section dependence. *Journal of Applied Econometrics*, 22(2), pp.265-312. https://doi.org/10.1002/jae.951.

Pesaran, M.H. and Yamagata, T., 2008. Testing slope homogeneity in large panels. *Journal of Econometrics*, 142(1), pp.50-93. https://doi.org/10.1016/j.jeconom.2007.05.010.

Phung, H. B., 2016. Determinants of FDI into Developing Countries. Mark A. Israel 91 Endowed Summer Research Fund in Economics. Available at: https://digitalcommons.iwu.edu/cgi/viewcontent.cgi?article=1004&context=israel_economics. [Accessed on April 2022].

Popovici, O.C., Calin, A.C., Ivana, D. and Dan, S., 2021. FDI Determinants Revisited: Extensive Evidence. *Romanian Journal of Economic Forecasting*, 24(4), pp.103-123.

Ramanujam, N., Verna, M., Betts, J., Charamba, K. and Moore, M., 2012. *Rule of Law and Economic Development: A Comparative Analysis of Approaches to Economic Development across the BRICS Countries*. McGill. Faculty of Law.

Ramanujam, N. and Caivano, N., 2016. The BRIC Nations and the Anatomy of Economic Development: the Core Tenets of Rule of Law. *Law and Development Review,* 9(2), pp.269-320.

Ranjan, V. and Agrawal, G., 2011. FDI Inflow Determinants in BRICS countries: A Panel Data Analysis. *International Business Research*, 4(4), pp.255-263. doi:10.5539/ibr.v4n4p255.

Resmini, L., 2000. The determinants of foreign direct investment in the CEECs. *Economic of Transition*, 8(3), pp.665-689. https://doi.org/10.1111/1468-0351.00060.

Rugman, A. M., 1977. Risk, Direct Investment and International Diversification. *Review of World Economics*, 113, pp.487-500.

Saini, N. and Singhania, M., 2018. Determinants of FDI in developed and developing countries: a quantitative analysis using GMM. Journal of Economic Studies, 45(2), pp.348-382.

Shahbaz, M., Mateev, M., Abosedra, S., Nasir, M. A. and Jiao, Z., 2021. Determinants of FDI in France: Role of transport infrastructure, education, financial development and energy consumption. *International Journal of Finance and Economics*, 26(1), pp.1351-1374. https://doi.org/10.1002/ijfe.1853.

Shamsuddin, A.F.M., 1994. Economic determinants of Foreign Direct Investment in Less Developed Countries. *The Pakistan Development Review*, 33(1), pp.41-51.

Shaidullina, V. and Semenovskiy, I., 2022. BRICS Countries' Economic and Legal Cooperation Through the Prism of Strategic Planning Documents. *BRICS Law Journal,* IX(1): pp.4-34.

Siegel, J. I., Licht, A. N. and Schwartz, S. H., 2012. Egalitarianism, Cultural Distance and Foreign Direct Investment: A New Approach. *Organization Science*, 24(4), pp.1174-1194. https://doi.org/10.1287/orsc.1120.0776.

Sigman, R. and Lindberg, S. I., 2015. The Index of Egalitarian Democracy and Its Components: V-Dem's Conceptualization and Measurement. *V-Dem Working Paper* (No. 2015/22). The Varieties of Democracy Institute.

Singh, H. and Jun, K. W., 1995. Some new evidence on determinants of foreign direct investment in developing countries. *World Bank International Economics Department International Finance Division Policy Research Working Paper* (No 1531), Washington: USA.

Singhania, M. and Gupta, A., 2011. Determinants of foreign direct investment in India. *Journal of International Trade Law and Policy*, 10(1), pp.64-82. https://doi.org/10.1108/14770021111116142.

Sova, R., Albu, L.L., Stancu, I. and Sova, A., 2009. Patterns of Foreign Direct Investment in the New EU Countries. *Romanian Journal of Economic Forecasting*, 6(2), pp.42-51.

Streltsov, E.S., Rozhin, A.A, Vosiev, Sh.S. and Kosnikov, S.N., 2021. The Economic Potential of the BRICS Countries as a Challenge to Modern World Realities. *Propositos y Representaciones*, 9(SPE3), pp.1-9. https://doi.org/10.20511/pyr2021.v9nSPE3.1143.

Taşdemir, F., 2022. Endogenous thresholds for the determinants of FDI inflows: evidence from the MENA countries. *International Journal of Emerging Markets*, 17(3), pp.683-704. https://doi.org/10.1108/IJOEM-07-2019-0509.

Tocar, S., 2018. Determinants of direct investment: A review. *Review of Economic & Business Studies,* 11(1), pp.165-196.

Tsai, P-L., 1994. Determinants of Foreign Direct Investment and Its Impact on Economic Growth. *Journal of Economic Development*, 19(1), pp.137-163.

UNCTAD, 2015. *World Investment Report 2015: Reforming International Investment Governance*. United Nations Publication: Geneva.

World Bank, 2022. Foreign Direct Investment, Net Inflows (BoP, Current US$). Available at: https://data.worldbank.org/indicator/BX.KLT.DINV.CD.WD. (accessed on May 2022).

World Bank, 2023. Poverty. Available at: https://data.worldbank.org/topic/11. [Accessed on September 2023].

World Justice Project, 2023. WJP Rule of Law Index. Available at: https://worldjusticeproject.org/rule-of-law-index/global/2022/historical. [Accessed on September 2023].

World Economic Forum, 2022. The Global Risk Report 2022. 17th Edition. Available at: https://www.weforum.org/reports/global-risks-report-2022/. [Accessed on May 2022].

Vijayakumar, N., Sridharan, P. and Rao, K.C.S., 2010. Determinants of FDI in BRICS countries. A panel analysis. *International Journal of Business Science & Applied Management*, 5(3), pp.1-13.

Yang, J. Y. Y., Groenewold, N. and Tcha, M., 2000. The determinants of Foreign Direct Investment in Australia. *The Economic Record*, 76(232), pp.45-54.