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DO GEOPOLITICAL RISKS AND POLITICAL STABILITY DRIVE FOREIGN DIRECT INVESTMENTS? NEW EVIDENCE FROM DYNAMIC PANEL CS-ARDL MODEL

Jeopolitik Riskler ve Siyasi İstikrar Yabancı Doğrudan Yatırımları Etkiler mi? Dinamik Panel CS-ARDL Modelinden Yeni Kanıtlar

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Keywords:
Foreign Direct Investment, Geopolitical Risks, Political Stability, CS-ARDL Model

JEL Codes:
F21, D81, D72, C51

Abstract

In this research, we aim to highlight the impact of geopolitical risks and political stability on investment flows directed towards 10 high-risky countries in the relevant database of Caldara and Icaivello (2018) for the period from 2000 to 2022 with yearly data. On that note, we employed the Durbin-Hausman panel cointegration test to check long run relationship. Then, we estimate co-integration parameters (coefficients) employing the CS-ARDL method to avoid estimation problems that arise from cross-section dependency and slope homogeneity. The results reveal that geopolitical risks have a negative effect on Foreign Direct Investment (FDI) for both the short and long term. The findings also prompt us to conclude that political stability in the host country has a significant impact on inward FDI in the long run. Cross-section dependency and delta tests indicate that geopolitical risk generates heterogeneous effects on host countries. In the last section, robustness checks with alternative estimators and Granger non-causality validate the main results at a conventional confidence level. To this end, policymakers may consider strengthening international institutions and organizations, giving importance to peaceful initiatives, multilateral agreements (commercial or economic), and diplomatic negotiations, as significant policy tools to increase investment inflows by enhancing stability, transparency, and predictability in governance.

Anahtar Kelimeler:
Doğrudan Yabancı Yatırımlar, Jeopolitik Riskler, Politik İstikrar, CS-ARDL Modeli

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Öz

Bu çalışmada, Caldara and Icaivello (2018) tarafından oluşturulan jeopolitik risk veri tabanındaki en yüksek puana sahip 10 ülke bazında, politik istikrar ve jeopolitik risklerin doğrudan yabancı yatırımlar üzerindeki etkisi 2000-2022 dönemi yıllık verileri ile analiz edilmiştir. Bu bağlamda, uzun dönemli eş bütünleşme ilişkisi Durbin-Hausman testi ile incelenmiştir. Daha sonra yatay kesit bağımlılığı ve homojenite altında bile sağlıklı sonuçlar veren CS-ARDL metodu ile eş bütünleşme katsayıları tahmin edilmiştir. Analiz sonuçlarına göre hem kısa hem de uzun dönemde jeopolitik risklerin doğrudan yabancı yatırımlar üzerinde negatif etkide bulunduğu görülmüştür. Ayrıca politik istikrar da doğrudan yabancı yatırım girişleri üzerinde önemli bir belirleyicidir. Yatay kesit bağımlılığı ve Delta testi, bu etkinin örneklem ülkeler bazında farklı şiddette olduğunu göstermektedir. Son olarak, diğer alternatif tahminciler ve Granger nedensellik testi sonuçları, bulunan sonuçların dirençli olduğunu güven aralıkları içinde teyit etmiştir. Bu bağlamda, politika yapıcılar, doğrudan yabancı yatırım akışlarını teşvik edebilmek için istikrarı, şeffaflığı ve yönetimde öngörülebilirliği artırmayı, uluslararası kurum ve kuruluşları güçlendirmeyi, barış girişimlerine, çok taraflı anlaşmalara (ticari veya ekonomik) ve diplomatik müzakerelere önem vermeyi birer politika aracı olarak değerlendirebilirler.

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1. Introduction

Since the globalization of capital markets, Foreign Direct Investment (FDI) has emerged as an important driver of economic growth and development over the past few decades. Attracting more FDI can lead to improvements across multiple macro-economic indicators such as unemployment, inflation, and balance of payment deficits, while contributing to progress toward long-term objectives like full employment, sustainable growth, and technological advancement. Ultimately, FDI helps us achieve higher levels of welfare and provides greater integration into global markets (Haksoon, 2010: 59). Especially among emerging markets, FDI has emerged as a sustainable source of the latest technology, skill transfer, competitive power, and capital accumulation (Zouhaier, 2019: 3-5).

The decision to invest in a foreign country depends on both economic and non-economic factors. Traditional FDI determinants such as rich natural resources, high trade openness, or low labor costs are becoming less significant compared to geopolitical risks (GPR). In today's global world, any disruptions occurring in a particular region can send shockwaves throughout the nations. These disturbances can affect foreign investments and the day-to-day operations of Multinational corporations (MNCs) (Wang, 2023: 141). Because multinational companies prefer stable and predictable environments to formulate long-term investment strategies, they build efficient supply chains and safeguard their workforce. As seen in Fig. 1, except for India, and Israel, countries are far from achieving the desired performance in attracting FDI. In fact, many of them are still nearly at the levels observed ten years ago as of 2022. For instance, according to World Banka data, FDI inflows to China shrank by 28% in 2016, 21% in 2019, and 48% in 2022 due to the Strategic Foreign Policy of the USA against the hegemonic position of China, the outbreak of trade disputes with the USA between 2015-2019, FED's policy tightening, and Covid-19 pandemics. As of 2023, FDI inflows have hit 30-year lows.

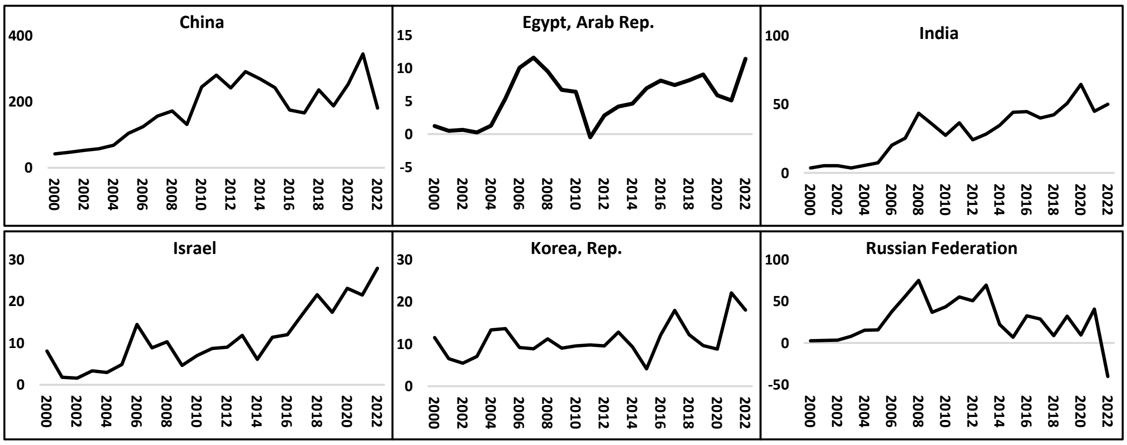

Figure 1. FDI Inflow of Sample Countries (BoP, Billion USD)
Source: World Bank Data https://data.worldbank.org/

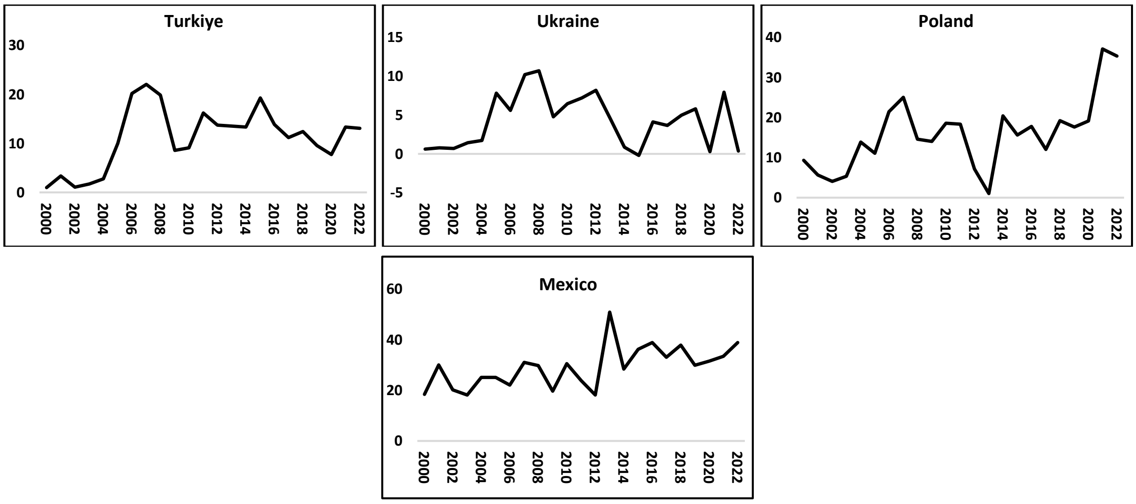

Figure 1. Continued

During the period of public unrest preceding the military coup in 2013, FDI inflows to Egypt experienced a continuous decline for four consecutive years. With the onset of the Russia-Ukraine war, FDI inflows to both countries turned negative. Due to regulatory unpredictability, a state-driven economic policy, a sovereign debt problem, illegal activities of criminal organizations, uncertainty about contract enforcement, informality, and corruption have contributed to ongoing uncertainties and led to a gradual increase (2001 and 2019 levels are nearly identical) in FDI inflow for Mexico (Garriga and Phillips, 2023: 1676). Following a swift rebound driven by structural reforms after the 2001 crisis, Turkey's FDI reached its highest point at USD 22 billion in 2007. However, by 2022, it had dropped to USD 10 billion due to socio-economic problems experienced in neighboring countries, and administrative and economic challenges. Especially increasing economic regulations in the financial sector have led to a decrease in predictability. Therefore, with the increasing occurrence and impact of geopolitical conflicts globally, investors are adjusting their perspectives and modifying their investment approaches. In such cases, they probably delay expansion plans to reduce risks (Witt, 2019: 1069).

We can define GPR as unexpected risks associated with events such as wars, acts of terrorism, political upheaval, tit-for-tat tariffs in commercial tensions, natural disasters, military conflict, civil commotion, or regulatory uncertainty that disrupt international relations. GPR is based on political, social, economic, and natural factors and it has the potential to significantly impact FDI flows negatively. Today, GPR has become an impactful factor for business in the eyes of global executives (Demiralay and Kılıçaslan, 2019: 460). Caldara and Iacoviello (2018) as well as Wang et al. (2019) propose that elevated geopolitical risk correlates with a reduction in business activity and FDI inflows. Numerous papers have proved that GPR have the potential to not only deteriorate the international relations framework but also trigger fluctuations and instability in macroeconomic indicators such as global oil prices, stock market returns, commodity prices, or policy uncertainties (Yu and Wang, 2023: 2). This is because of that international political, commercial, or economic conditions heavily influence investor sentiments and behaviors. The changing risk environment and perceptions about the investment climate may cause firms to postpone their decisions and show decreased motivation to expand into new markets, regardless of promising expected returns, even if risks are not realized (Antonakakis et al., 2017: 165). Thus, MNCs need to update their views on the likelihood of geopolitical conflicts occurring (geopolitical risk) and the effects of unpredictable geopolitical situations (geopolitical uncertainty) to make smart, long-term investment choices. Otherwise, waiting until conflicts arise to take action can be costly and too late to protect existing business interests, especially given the complexity of reversing most FDI. Instead, they should wait until the picture becomes clearer before proceeding with investments (Bussy and Zheng, 2023: 2). Particularly, sectors such as energy, defense, infrastructure, and extractive industries might encounter rising variations in FDI because GPR affect them more profoundly. For example, unforeseen shifts in governmental policies like the expropriation of oil companies elevate perceived risks, and deter foreign investors (Daştan et al., 2020: 718).

Political Stability (PS) stands as another influential factor in FDI. Butler and Joaquin (1998) define the PS as a risk that a sovereign host government will unexpectedly change the rules of the game under which businesses operate. It consists of corruption, terrorism, how strong the institutions are, and how well laws are followed. This definition signifies the state of a government or political structure characterized by regularity, organization, unbroken governance, stable policies, and leadership, devoid of frequent interruptions or significant alterations arising from internal or external factors (Radu, 2015: 751). Recent geopolitical events, such as Brexit, US-China trade tensions, the Russian invasion of Ukraine, North Korea's nuclear program, and various cybersecurity threats have dominated the headlines.

PS is primarily understood as a government's capacity to uphold a consistent and predictable political climate. Within this stable environment, the establishment of well-defined rules and expected behaviors is facilitated. Legal frameworks and regulations then become effective tools for enforcing order, and governments are empowered to construct efficient governance structures. This stability further enables them to navigate change across both institutional (formal rules) and non-institutional (informal norms) domains. (Çalışkan, 2019: 72). Otherwise, a higher level of political instability increases the likelihood of a government change within a given period. Such a country does not possess a smoothly operating legal system, and robust institutions (Uddin et al., 2023: 6).

The government is responsible for the rule setting of many fiscal decisions that encourage or discourage FDI. Nations, characterized by stable governance and lower political risks generally draw more investment, as they offer a secure business environment. Stable political regimes create and uphold precise laws and rules that safeguard property rights, guarantee the execution of contracts, and create a stable economic climate. Researchers such as Elish (2022), Buitrago and Barbosa (2020), and Ciesielska and Koltuniak (2021) indicate that PS fosters a favorable environment for FDI. Their findings support institutional and governance theories, suggesting that stable political regimes favor foreign investment. Such stable climates assure them that their investments will be protected without disruption. Additionally, a transparent and fair regulatory framework that promotes a level playing field for market participants is expected by investors (Le et al., 2023: 7). In contrast, politically unstable governments, institutional uncertainties, and unfavorable changes in foreign investment terms deter foreign investors. (Aisen and Veiga, 2011: 3-4).

On that note, examining the effect of PS and geopolitical risk on FDI is of considerable importance for various reasons. First, GPR are pivotal in investment dynamics. Countries with political instability exposure to high GPR tend to experience reduced FDI inflows. This lack of FDI can hinder progress in reducing poverty and inequality and weaken social cohesion and friendly cooperation among countries even further. Therefore, it is increasingly important to study GPR and PS from the perspective of emerging economics. Also subjected effects constitute a great theoretical and practical importance for countries to accurately identify risks and formulate corresponding policies to attract foreign capital to promote economic development. Accordingly, the primary motivation behind this research is the lack of empirical studies that have employed a robust cointegration approach that enables the handling of cross-sectional dependence (CD) and addresses the endogeneity to analyze the effect of PS and GPR.

This paper proceeds as follows. Section 2 contextualizes the theoretical basis of the subject. In section 3, we reviewed the related literature and presented the contributions. Section 4 recounts the empirical approach in which we describe the data and specify the models to be employed in the study along with the estimation techniques. Section 5 provides the findings from the econometric analysis. Section 6 provides a robustness check about the main findings. Section 7 concludes the paper with policy recommendations.

2. Theoretical Basis

Several theories have examined the determinants and consequences of FDI to grasp the global investment landscape and the motivations of MNCs. These theories highlight conditions that may offer advantages or disadvantages, as well as precipitating factors. Some theories assume perfect markets, while others consider imperfect markets. Moreover, FDI is a form of cross-border capital movement, captured in the balance of payments statement, leading certain theories to adopt a macroeconomic perspective. Additionally, understanding the reasons for cross-border investments from the investor's viewpoint, as well as MNCs' decisions regarding subsidiary locations and their interest in entering new markets, has become crucial. This has prompted certain theories to adopt a microeconomic perspective (Denisia, 2010: 105).

Early FDI theories, rooted in the ideas of Smith and Ricardo, focused on international production specialization. Smith emphasized efficient production as a basis for trade, while Ricardo's theory of comparative advantage further developed this concept, emphasizing the importance of trade barriers in promoting FDI. However, both theories had limitations in explaining FDI in complex cases. Mundell (1957) introduced a model with two countries, two goods, and two production factors, but it could not fully clarify international production through FDI, mainly involving portfolio or short-term investments (Makoni, 2015: 78).

After World War II, new theories emerged and they addressed the subject from a different perspective and reconsidered the role of new factors such as intra-industry trade, government intervention, externalities, marketing, economies of scale, product differentiation, and market structure (Zhang, 2008: 8–15). Accordingly, Vernon's Product Cycle Theory, assuming perfect markets, explains FDI by comparing rates of return. It suggests that FDI flows from low-rate-of-return countries to high-rate-of-return ones. Firms consider expected marginal returns and marginal cost of capital. If foreign returns exceed domestic ones, there's motivation for foreign investment. The theory has four production cycle stages: innovation, growth, maturity, and decline. In the innovation phase, firms create new products locally. As products mature and standardize, returns decrease domestically, leading to exports. This encourages foreign expansion, especially in countries that add value to production (Rasiah and Yap, 2019: 58).

The Industrial Organization Theory, based on imperfect market competition, emphasizes the importance of market structure and organizational characteristics in explaining FDI. Hymer (1960) first proposed that structural and transactional imperfections are fundamental to many MNCs, forming the basis of this theory. Factors such as economies of scale, knowledge advantages, distribution networks, product diversification, and credit benefits create structural imperfections that enhance MNCs' market influence (Acocella, 1992: 232-233).

The Internalization Hypothesis explains FDI as firms' shift from external to internal transactions to reduce transactional costs. MNCs face interconnected operations across production, marketing, research, development, and training, involving knowledge and expertise. Pricing these intermediate products is challenging due to market imperfections and technology protection concerns, leading to the development of intrafirm markets. This shift towards cross-border internalization of markets drives MNCs to replace external transactions with internal "markets," fostering international enterprise and driving FDI (Lizondo, 1991: 71).

Dunning's Eclectic Theory (Dunning, 1977; Dunning, 1979) focuses on O-L-I: **O**wnership Specific Advantage (e.g., technology), Location Specific Advantage (e.g., foreign political factors), and **I**nternalization Advantage (e.g., operating abroad). It sets three conditions for FDI: firms must have ownership advantages, using them internally should be more profitable than selling or leasing, and combining these advantages with foreign resources should yield higher profits than exclusive exports. This theory stresses the importance of ownership and internationalization advantages, with the foreign location offering benefits over the home country.

Capital Market Theory, shaped by Aliber's research in 1970, proposes that FDI is a consequence of imperfections in capital markets. It is driven by currency differences between source and host countries, with weaker currencies being more attractive due to their potential to leverage differences in market capitalization rates. He forwarded his theory in terms of the differences in the strength of the currencies in the host and source countries. He postulated that weaker currencies compared with stronger investing country currencies had a higher capacity to attract FDI in order to take advantage of differences in the market capitalization rate (Nayak and Choudhury, 2014: 11-12).

Expectations and predictability of risk are also important factors in decision making. Building on the literature that classifies different types of risk, such as Miller (1992), Oetzel and Oh (2014), the connection with FDI depends on the nature of the violence. Accordingly, the effect of geopolitical risk or political risk depends upon the extent to which violence poses a continuous risk. Continuous risk is predictable and ongoing, while discontinuous risk involves random events that are hard to foresee. On this scale, we can consider risks like corruption or expropriation as continuous risks; on the other hand, less predictable hazards such as terrorist attacks can be viewed as discontinuous risks for MNEs. Accordingly, a certain level of predictability is required for firms to adjust their location choice process and only the types of violence that pose a relatively continuous risk may affect a firm's location choice strategies. We can expect that these types of risks are negatively associated with the location choice decisions of MNEs. Second, the geography of political violence is also important. Risks concentrated in a specific geographical region of the country are likely to pose less risk to an MNE investing in this country than political conflicts spread across a broader geographic area (Witte et al., 2017: 867).

In summary, FDI theories have evolved with globalization and trade liberalization policies, and an examination of these theories is essential for selecting relevant variables and proxies, predicting the expected directions of explanatory factors, and strengthening the basis for empirical analysis and discussion.

3. Related Literature and the Contributions

Many researchers in finance and economics try to find the factors that affect the FDI and numerous studies have extensively examined influencing factors and their consequential impacts. Effects of GPR are frequently disregarded, largely due to the absence of a time-varying indicator. Most existing research focuses on the influence of risk events using a dummy variable or relies on an event study approach, which comes with its own set of weaknesses. Thus, the literature concerning the connection between GPR/PS and FDI is still relatively young. A majority of these papers indicate that an increase in geopolitical risk or political instability reduces capital inflows in emerging economies while increasing in advanced economies and triggering an investor tendency toward seeking safety.

Geopolitic risks are an important determinant of FDI. Accordingly, P´astor and Veronesi (2013), Friberg (2015), Rauf et al. (2016), Giambona et al. (2017), Cheng and Chiu (2018), Fania et al. (2020), Cuypers et al. (2021), Bussy and Zheng (2023) provide enough evidence for a negative relationship between GPR and FDI. In addition, Henisz and Zelner (2005), Busse and Hefeker (2007), Jensen (2008), Darendeli and Hill (2016), Filippaios et al. (2019) suggest that political risks are connected to adverse outcomes for FDI. An escalation in GPR raises the necessary return for an investment to be considered worthwhile while leading to delays in investment decisions.

Different aspects of political risks such as corruption (Cuervo-Cazurra, 2006), terrorism (Czinkota et al., 2010), political violence (Witte et al., 2017), and political party tenure (Cordero and Miller, 2019) have been found to negatively affect FDI. Studies by Sethi and Luther (1986), Phillips-Patrick (1989), and Click and Weiner (2010) have all explored the negative outcomes linked to political risks and policy uncertainty concerning different types of international investments, including FDI, portfolio investment, and loans. These studies explore these effects across different dimensions, ranging from the country-level to industry-level and firm-level analyses.

Political instability, corruption, and institutional factors are other sources of risk factors and they play a significant role in the direction of FDI. Numerous research findings indicate that PS and effective institutions can foster private investment while enhancing the overall efficiency of the economic system. In this respect, Loree and Guisinger (1995), Dunning (2000), Egger and Winner (2005), Freckleton et al. (2012), Eduardo de Arce and Escribano (2014), Jose and Ling (2015), Rashid et al. (2017), Abdella et al. (2018), Zouhaier (2019), Nizam (2022) demonstrated that nations exhibiting robust PS and institutional quality, along with minimal corruption tend to attract greater FDI inflows.

The situation is further aggravated when it comes to emerging economies. In such cases, nations face elevated risk premiums, as observed in the study by Cherian and Perotti (2001).

Additionally, factors like resource nationalism can impact the valuation of oil and gas reserves. These dynamics may amplify the adverse impact of geopolitical risk (GPR) on investment flows, potentially resulting in additional penalties. Moreover, Henisz (2000), Daude and Stein (2007), Oh and Oetzel (2011), Colino (2013), Julio and Yook (2016), Beazer and Blake (2018), Dedeoğlu et al. (2019) have documented that good governance (e.g. regulatory quality, efficient rule of law, accountability) attracts FDI inflow and mitigate the negative effect of political uncertainty.

We contribute to the literature from at least three perspectives and aim to fill some gaps in this manner. Most of the existing literature on GPR primarily approaches the subject from an international relations perspective. In this study, we examined the impacts of both geopolitical risk and PS on FDI simultaneously, providing a comprehensive view of relevant factors and their quantified influence. However, previous studies on geopolitical risk are limited by the difficulty of accurately quantifying geopolitical risk. A recent database developed by Caldara and Iacoviello (2022) addresses this issue by directly measuring GPR. Second, it fills the gap in quantitative research for economies with high-risk profiles, focusing on such economies. Thirdly, the study employs the CS-ARDL approach for cointegration (D-H Test) analysis, which accounts for residual factor error structures, cross-section dependence of idiosyncratic errors, and slope homogeneity, enhancing the accuracy of individual regressions by considering the influence of common factors. These tests provide further validation and strengthen the credibility of our results, which subsequently support the policy implications for attracting FDI inflows sustainably.

Our research aims to investigate the impact of geopolitical risk and PS on FDI flows, focusing on their response to volatility. We hypothesize that both geopolitical risk and political instability negatively affect FDI flows. Finally, our study addresses the following research questions: a) How geopolitics and PS interact with FDI both in the short and long term, b) Are geopolitical risk, political instability, and other control variables attractive to FDI in our sample countries? c) Is the sensitivity of investment tendencies to GPR different among these countries?

4. Empirical Approach

4.1. Data and the Model Specification

In this study, we referred to the basic theories of FDI and set a strongly balanced panel model with an annual dataset. We choose 10 countries (China, Egypt, India, Israel, South Korea, Mexico, Poland, Russia, Türkiye, and Ukraine) that have the “highest” Geopolitical Risk Index (GPR) score in the relevant database spanning from 2000 to 2022. The reason for selecting this period in the study is twofold: the constraints posed by data availability and the inclusion of significant global geopolitical events that occurred during this timeframe. All data were sourced from the World Development Indicators (WDI, 2024), IMF International Financial Statistics (IFS, 2024), Worldwide Governance Indicators (WGI, 2024), and UNDP data center (UNDP, 2024). Caldara and Iacovello (2022) calculated the latest GPR scores. All variables were transformed into natural logarithms to smooth the series and mitigate the influence of scale and skewness. In order to compare and contrast the influence of GPR and PS upon the FDI, the baseline model may be specified as below.

$$FDI_{it} = \beta_0 + \beta_1 GPR_{it} + \beta_2 PS_{it} + \varepsilon_t \quad (1)$$

Where dependent variable FDI (in billion US dollars) refers to yearly inflows to country i at year t. β_0 is the constant term of the model. We have two explanatory variables. The first one is the Geopolitical Political Risk (GPR) index for the host country "i" in the year "t." This index, developed by Caldara and Iacoviello (2018), quantifies adverse geopolitical events and associated risks. It is constructed based on the analysis of newspaper articles related to geopolitical risk, where the index represents the proportion of such articles out of the total number of news articles for each month. Hence, the GPR index captures perceptions of both risk and uncertainty (Antonakakis et al. 2017: 167). A high value GPR score indicates high-risk situations. The economic implication related to GPR arises from the fact that the host country's geopolitical risk hampers the inflow of FDI. So, the sign of the β_1 is expected to be negative (Bilgin et al., 2020: 554). The second variable LnPS is a component of the World Governance Indicators introduced by Kaufman et al. (2010), represents PS and is expressed as a percentile rank among the sample countries. It assesses perceptions regarding the probability of political instability and the presence of politically motivated violence, including terrorism. Its scale ranges from 0 (indicating the highest stability) to 100 (representing the lowest stability). We expect that the sign of β_2 will be positive.

4.2. Cross Section Dependence

Prior to conducting the primary analysis, it is crucial to carry out a diagnostic test for cross-sectional dependence (CSD). Cross-sectional dependence refers to whether cross-sectional units are related to each other, and whether units are equally affected by shocks that occur over time, and this is quite commonly observed in panel models. We consider that the countries in our sample are linked through trade and financial integration, leading to a shared correlation effect bias. Emerging economies exhibit strong interconnections in terms of policy alignment, cultural ties, and economic engagements, thus they depend on each other in many ways (Halwan et al., 2022: 6). This is especially relevant in scenarios involving investment flows. The increasing wave of globalization, regional policies, and technological advancements means that FDI inflows or PS in one developing country can also influence them in other developing countries. Neglecting cross-section dependence (CSD) can affect the first-order properties, such as unbiasedness and consistency, of standard panel estimators, leading to biased estimates and erroneous inferences. To determine the presence of CSD, we estimate the following panel data regression model.

$$\Delta y_{i,t} = d_i + \delta_i y_{i,t} + \sum_{j=1}^{p_i} \lambda_{i,j} \Delta y_{i,t} + u_{i,t} \quad (2)$$

where p is the lag length and d_i denote the deterministic part. Accordingly, the null hypothesis is H_0: Cov (u_{it}; u_{it}) = 0 for all t and i ≠ j against the alternative one H_1: Cov (u_{it}; u_{jt}) ≠ 0 for at least one pair of i ≠ j. In this frame, Lagrange Multiplier (LM) developed by Breusch and Pagan (1980) is performed as;

$$LM = T \sum_{i=1}^{N-1} \sum_{j=i+1}^{N} \hat{\rho}_{ij}^2 \quad (3)$$

where the number of cross-sections is N, time period is T, and the sample estimate of the pair-wise correlation coefficients of the residuals from OLS estimation of equation 3 is $\hat{\rho}_{ij}$ for each i.

4.3. Slope Homogeneity

The next step is determining the homogeneity of slope coefficients using the delta test. Swamy (1970) introduced a framework for determining whether the slope coefficients of the cointegration equation are homogeneous across different groups. Subsequently, Pesaran and Yamagata (2008) developed asymptotically normally distributed standardized Delta and Adjusted Delta tests. First, we estimate a model where the null hypothesis $H_0: \beta_i = \beta$, implying that the slope coefficients in the panel are homogeneous, and the alternative hypothesis $H_1: \beta_i \neq \beta$, indicating that the coefficients in the panel are statistically different (heterogeneous). In order to test slope homogeneity, we utilize the following equation.

$$\tilde{\Delta} = \sqrt{N}\left(\frac{N^{-1}\tilde{S}-k}{\sqrt{2k}}\right) \quad \tilde{\Delta}_{adj} = \sqrt{N}\left(\frac{N^{-1}\tilde{S}-E(\tilde{z}_{iT})}{\sqrt{\text{var}(\tilde{z}_{iT})}}\right) \tag{4}$$

In equation 4, the expected value of error term z is $E(\tilde{z}_{iT}) = k$ with ‘k’ number of explanatory variables and its variance is $Var(\tilde{z}_{iT}) = 2k(T-k-1)/T+1$ (Bersvendsen and Ditzen, 2020: 53-54).

4.4. Unit Root

Following the examination of cross-sectional and homogeneity conditions, it becomes crucial to evaluate the stationarity. The use of non-stationary time series violates the assumptions of the regression model, leading to unreliable parameter estimates and prediction results. Panel unit root tests fall into two categories. First-generation tests assume that the cross-sectional units within the panel are independent, implying that all cross-sectional units in the panel are equally affected by shocks (Kappler, 2006: 6-7). However, given the high level of interdependence among countries in the contemporary global economic system, it is more realistic to assume that units are influenced to varying degrees by external shocks. Recognizing this, second-generation unit root tests have been devised to address this limitation. To assess stationarity, we employ the cross-sectional augmented Dickey-Fuller (CADF) test proposed by Pesaran (2006).

$$y_{it} = (1-\phi_i)\mu_i + \phi_i y_{i,t-1} + u_{it} \tag{5}$$

To make a decision, we adopted a linear heterogeneous panel model in equation (5) and conducted a test on y_{it}. We can rewrite y_{it} and u_{it} as $\Delta y_{it} = \alpha_i + \beta_i y_{i,t-1} + \gamma_i f_t + \varepsilon_{it}$ in which α is constant and β is coefficient and equal to $\alpha_i = (1-\phi_i)\mu_i, \beta_i = -(1-\phi_i)$. Under this equation, If $\phi_i = 1$, series will contain a unit root. Thus, null hypothesis is $H_0: \beta_i = 0$ indicates no cross-sectional dependency against the alternative one $H_1: \beta_i < 0$ for some i.

4.5. Panel Cointegration Test of Durbin Hausman

At this step, we aim to determine the cointegration relationship between series using the Durbin Hausman (DH) test that considers cross-sectional dependence and homogeneity in slope coefficients. Also, it allows independent variables can have different degrees of stationarity, such as I(0) or I(1), but the dependent variable should follow the I(1) process. The Durbin-Hausman test provides two types of test statistics, one for groups and the other one for panels. If the assumption of *homogeneity* is accepted, panel statistics (DH_p) are considered given that panel statistics are calculated as if the entire panel were in a single cross-section. If heterogeneity is assumed as a result of the delta test, group statistics (DH_g) are examined. In the group test, the rejection of the H_0 implies that there is at least one cointegration vector for some cross-sections. In the panel test, it is assumed that the autoregressive parameter is the same for all cross-sections (Westerlund, 2008: 199-203). Under this assumption, when the H_0 hypothesis is rejected, it means there is a cointegration relationship for all cross-sections. In the prediction process, residuals are obtained initially. However, due to the common factor problem, these residuals are obtained using the principal component procedure instead of ordinary least squares (OLS). Subsequently, OLS predictions are made on the residuals using variance and bandwidth information, and test statistics are obtained as follows.

$$DH_g = \sum_{i=1}^{n} \hat{S}(\tilde{\phi}_i - \hat{\phi}_i)^2 \sum_{t=2}^{T} \hat{e}_{it-1}^2 \quad ; \quad DH_p = \hat{S}_n \hat{S}(\tilde{\phi}_i - \hat{\phi}_i)^2 \sum_{i=1}^{n} \sum_{t=2}^{T} \hat{e}_{it-1}^2 \tag{6}$$

where ϕ_i is the coefficient of residual $\hat{e}_{it-1}$ that is a consistent estimate from $\hat{e}_{it} = \phi_i \hat{e}_{it-1} + error$ and testing the null hypothesis of *no cointegration* is asymptotically equivalent to testing whether $\phi_i = 1$. Variances of panel and cross section units are $\hat{S}_i = \hat{\omega}_i^2 / \hat{\sigma}_i^2$ and $\hat{S}_i = \hat{\omega}_n^2 / \hat{\sigma}_n^2$ where $\hat{\omega}_n^2 = \frac{1}{n}\sum_{i=1}^{n} \hat{\omega}_i^2$; $\hat{\sigma}_n^2 = \frac{1}{n}\sum_{i=1}^{n} \hat{\sigma}_i^2$. In other words, long-term and contemporaneous variances ($\hat{\omega}_n^2$ and $\hat{\sigma}_n^2$) are equal to the means of their own predictions. For the panel test, the null and alternative hypotheses are formulated as $H_0 : \phi_i = 1$ for all i versus $H_1 : = \phi_i = 1$ and $\phi_i < 1$ for all i. Thus, a rejection of the null should be taken as evidence in favor of cointegration for the entire panel. In the group means, H_0 is tested against the alternative one that $H_1 : \phi_i < 1$ for at least some i, and rejection should be interpreted as providing evidence in favor of rejecting the null hypothesis for at least some of the cross-sections (Westerlund, 2006: 13).

4.6. CS-ARDL Model

ARDL bound test method, introduced by Pesaran, Shin, and Smith (2001), offers several advantages such as better small sample properties, accommodation of series with different orders of integration, reparametrization into the Error Correction Model (ECM), and providing insights into both short-run dynamics and long-run relationships between variables (Nkoro and Uko, 2016: 78–79). However, the traditional ARDL method does not consider cross-sectional dependence (CSD), which affects its efficiency. In response to this challenge, Chudik and Pesaran (2015), along with Chudik, Mohaddes, Pesaran, and Raissi (2016), introduced the cross-section (CS) augmented ARDL method to overcome these issues. The CS-ARDL panel approach effectively addresses endogeneity while also managing cross-sectional dependence.

Furthermore, it provides a comprehensive analysis of both the enduring and immediate impacts of the variables. It enables the handling of cross-sectional dependence (CD) in both long and short-term error terms. This estimation technique effectively addresses dynamics, heterogeneity, and cross-sectional dependence. (Ameer et al., 2020: 4). A linear version of the unrestricted error correction form of the traditional ARDL (p;q) model for t = 1,2,…T periods and i = 1,2,….N number of countries can be specified by the following regression.

$$y_{it} = \sum_{k=1}^{p} \lambda_{ik} y_{i,t-k} + \sum_{k=0}^{q} \delta'_{ik} x_{i,t-k} + \omega_i + \varepsilon_{it} \quad (7)$$

Where $y_{i,t-k}$ denotes lagged of the dependent variable (the CS-ARDL method regards the 1-year lag of the regressed variable as a weakly exogenous regressor within the error correction process), X_{it} is the (kx1) vector of explanatory variables that are allowed to be purely I(0) or I(1) for group i, scalar λ_{ik} denotes coefficients of lagged dependent variable, δ_{ik} indicates slope coefficients of the explanatory variables, ω_i represents group specific fixed effect error term, ε_{it} is iid error term and p and q are optimal lag orders. To handle cross-sectional dependence and ensure slope homogeneity, Chudik and Pesaran (2015) recommend incorporating Pesaran's (2006) Common Correlated Effects (CCE) approach into panel Autoregressive Distributed Lag (ARDL) models. Under the assumption of uncorrelated coefficients and predictors, Pesaran (2006) illustrates that the cross-sectional averages of both dependent and independent variables can substitute for unobservable common factors. These averages can then be incorporated into the original regression model (equation 7). The expanded form of the traditional model can include extra lags (r) to the ARDL specification as follows.

$$y_{it} = \sum_{k=1}^{p} \lambda_{ik} y_{i,t-k} + \sum_{k=0}^{q} \delta'_{ik} x_{i,t-k} + \sum_{k=0}^{r} \beta_{ik} \phi \bar{M}_{t-1} + \omega_i + \varepsilon_{it} \quad (8)$$

where $\bar{M}_{t-1}$ = $(\bar{y}_{i,t-k}, \bar{x}_{i,t-k})$ is the cross section averages of regressed and regressor and it eliminates cross-section dependencies (Azam et al., 2022: 87752). We can transform Equation (8) to an ECM to decompose short and long run effects. At that, we come up with the following CS-ARDL specification.

$$\Delta y_{it} = \phi_i [y_{i,t-1} - \theta_i x_{i,t}] - \sum_{k=1}^{p-1} \lambda^{*}_{ik} \Delta y_{i,t-k} + \sum_{k=0}^{q-1} \delta^{*\prime}_{ik} \Delta x_{i,t-k} + \sum_{k=0}^{r} \beta_{ik} I\bar{M}_t + \omega_i + \varepsilon_{it} \quad (9)$$

Equation (9) indicates the ECM presentation of the Panel CS-ARDL model. Δ is the difference operator with an optimal lag order, $\lambda^{*}_{ik} = -\sum_{m=k+1}^{p} \lambda_{im}$ (k=1,2,…p-1) and $\delta^{*}_{ik} = -\sum_{m=k+1}^{q} \delta_{im}$ (k=1,2…q-1) are the short run coefficients, $\hat{\phi}_i = -(1 - \sum_{k=1}^{p_y} \lambda_{ik})$ is the error correction term. This term indicates the speed of adjustment toward long run equilibrium after a shock to the system. This term should be statistically significant and negative to support the long-run equilibrium. $\hat{\theta}_i = (\sum_{i=0}^{q} \beta_{1,i}) / \hat{\phi}_i$ is the long run coefficient. For the calculation of the variance/covariance matrix of the individual long run coefficients θ_i the delta method used the vector of the long run coefficient (Dahmani et al., 2022: 119).

In the case of panel data with small cross-sections, traditional estimation techniques such as fixed/random effects estimators are generally used. However, when the panel model is of high frequency with the number of cross-sections, the asymptotic properties will be quite different and non-stationarity becomes a problem. In this case, we can estimate the ARDL model using Mean Group (MG) methods. MG estimator that proposed by Pesaran and Smith (1995), derives the long run parameters from the ARDL models for individual groups by estimating N separate regressions for each group and then calculating the coefficient means to derive the estimator. Thus, it produces consistent estimates of the average of the parameters. The MG estimator for the panel model can be expressed as follows.

$$\hat{\hat{\theta}}_{MG} = 1/N\sum\nolimits_{i=1}^{N}\hat{\theta}_i \tag{10}$$

This estimator allows for heterogeneity for all parameters (they are freely independent across individuals) for both short and long run vary across groups. However, this method does not recognize the possibility that some parameters may be similar across groups and it is inefficient if slope homogeneity holds (Hussain et al., 2022: 7).

5. The Findings

We start our analysis by reviewing summary statistics before implementing the main model. The summary statistics in Table 1 reveal significant variation in all variables. Standard deviations indicate that LnFDI has the highest volatility and the LnPS has the lowest. Second, negative values of skewness for all variables indicate data that are skewed left except LnPS. In the case of kurtosis, values are near 3 suggesting that distributions have slightly heavier tails (leptokurtic). But to make sure about normality, we conducted the Jarque-Bera test. Accordingly, at least %5 significance level, we cannot reject the null of that the disturbance term is normally distributed.

Table 1. Summary Statistics

Variables	**LnFDI**	**LnGPR**	**LnPS**				
Mean	9.502	-1.608	3.160	**Correlation**			
Median	9.495	-1.519	3.140		LnFDI	LnGPR	LnPS
Maximum	12.749	1.300	4.457	LnFDI	1	-	-
Minimum	5.468	-4.200	1.560	LnGPR	-0.34	1	-
Std. Dev.	1.347	0.967	0.683	LnPS	0.29	0.24	1
Skewness	-0.126	-0.385	0.037				
Kurtosis	3.111	3.005	2.792	**Covariance**			
Jarque-Bera	3.091	4.657	3.287		LnFDI	LnGPR	LnPS
Probability	0.21	0.08	0.13	LnFDI	1	-	-
Sum	2167.72	-367.33	720.56	LnGPR	-0.41	1	-
Sum Sq. Dev.	411.76	212.42	106.38	LnPS	0.26	0.19	1

Secondly, the correlation analysis shows that independent variables are in weak correlation with dependent variables. Finally, the negative covariance coefficient between LnFDI and LnGPR reflects opposing behavior between these variables, while the positive coefficient between LnFDI and LnPS indicates a positive relationship. Nonetheless, descriptive statistics alone do not provide a sufficient basis for evaluating the direction of a potential cointegration relationship. Therefore, it is necessary to conduct appropriate tests to gain a clear understanding. However, before proceeding with the main model, it is essential to conduct a preliminary analysis. In this regard, the stationarity of the variables needs to be examined. Hence, before conducting the unit root test, an assessment of cross-sectional dependence and the homogeneity-heterogeneity characteristics of the series were carried out, and the findings are presented in Table 2.

Table 2. Cross Sectional Dependence (CSD) and Slope Homogeneity

	LnFDI		LnGPR		LnPS	
CSD;	**Test Stat.**	**Prob.**	**Test Stat.**	**Prob.**	**Test Stat.**	**Prob.**
CD_{LM1}	68.24**	0.01	59.71	0.07	33.87	0.88
CD_{LM2}	6.09***	0.00	5.42*	0.06	-1.17*	0.08
CD_{LM}	-2.61**	0.01	-3.17	0.00	-2.86**	0.00
Bias Adj. CD	40.66***	0.00	2.08**	0.01	12.23***	0.00
Slope Homogeneity						
Δ Test	9.41***	0.00	7.09***	0.00	12.87***	0.00
$\Delta_{adj.}$ Test	8.91***	0.00	6.78***	0.00	13.24***	0.00

Notes: *, ** and *** denote statistical significances at 1%, 5% and 10% levels, respectively.

As seen in the table, the null hypothesis of “no cross-sectional dependence” in the series has been rejected at least a 10% significance level for all types of tests. Therefore, second-generation unit root tests should be employed. At the bottom of the table, the homogeneity-heterogeneity properties of the coefficients have been examined. The null hypothesis stating that the *series are homogeneous* is rejected based on the probability values from the delta test. It means the model's coefficients are non-uniform and that the slope varies among countries. At that, possible external shocks will affect the coefficients of each cross-section differently.

After addressing cross-sectional dependence (CSD) and slope homogeneity, the subsequent step entails determining the order of integration for the time series under study. This is a critical step since the CS-ARDL cointegration method is suitable for modeling with a combination of I(0) and I(1) regressors. However, when dealing with variables integrated into order two (I(2)), the CS-ARDL approach may yield less robust results. To evaluate stationarity within the panel series, we employed the CADF unit root tests.

Table 3. CADF Unit Root Test

Cross-	**Level**			**First Difference**		
Section	**LnFDI**	**LnGPR**	**LnPS**	**LnFDI**	**LnGPR**	**LnPS**
China	-2.33	-2.76	-2.61	-3.62*	-3.78*	-3.76*
Egypt	-2.73	-4.03*	-2.52	-4.18**	-4.07**	-3.87*
India	-2.44	-3.52	-3.42	-3.57*	-3.94*	-3.56*
Israel	-1.33	-2.17	-3.37	-6.24***	-2.88	-3.63*
S. Korea	-5.91***	-3.01	-3.32	-6.76***	-3.55*	-4.17**
Mexico	-2.27	-3.47	-3.37	-6.49***	-3.73*	-4.44**
Poland	-3.17	-3.2	-4.55**	-4.13**	-3.91*	-5.41***
Russia	-1.86	-4.49**	-3.21	-4.27**	-5.58***	-4.94***
Türkiye	-2.07	-3.45	-3.48	-3.31	-3.76*	-6.09***
Ukraine	-1.63	-3.09	-3.07	-2.67	-4.54**	-4.23**
CIPS- Stat.	-2.58	-3.39	-3.53	-4.46**	-3.97*	-4.42**

Notes: *, ** and *** denote statistical significances at 1%, 5% and 10% levels respectively. CADF test indicates also CIPS statistics, which are computed as the simple, average of the individual-specific CADFi statistics to represent the panel as a whole. Critical values for the case of “intercept and trend” at 1%, 5% and 10% are – 4,97 / − 3,99 / – 3,55 respectively (Pesaran, 2007: 276, Table I.b).

Table 3 illustrates that, based on both CADF (individuals) and CIPS (entire panel) statistics, almost all variables in the model exhibit stationarity in the first difference at a significance level of at least 10%. The null hypothesis (unit root) has not been rejected at the conventional test size, leading to the conclusion that these series follow an I(1) process. Additionally, we can confirm that none of our variables are integrated in the second order, I(2).

After confirming the order of integration, the next step in the analysis involves examining the evidence of a long-term cointegration relationship among variables using the Durbin-Hausman tests. One advantage of this test is its applicability when the series are either I(0) or I(1). Additionally, the test accounts for cross-sectional dependence and the homogeneity-heterogeneity characteristics of the series. The test comprises two models: Model 1, including an equation with a constant term; and Model 2, representing a model with both a constant and a trend.

Table 4. Durbin Hausman Panel Cointegration Test

Model	Panel and Group Statistics	Value	Probability	Decision
Model 1; LnFDI = f (LnGPR ; LnPS)	Durbin-H Group Statistic	-0.383	0.35	No Cointegration
	Durbin-H Panel Statistic	-1.436*	0.07	Cointegration
Model 2; LnFDI = f (LnGPR ; LnPS)	Durbin-H Group Statistic	-1.482**	0.04	Cointegration
	Durbin-H Panel Statistic	-0.792	0.21	No Cointegration

Notes: The values in parentheses represent probability values. ***, **, and * respectively indicate the percentages at which the null hypothesis is rejected at the significance levels of 1%, 5%, and 10%.

The test yields cointegration estimation results for both the cross-section within the panel and the overall panel. However, considering the heterogeneity identified in the Delta test results, decisions must be made by analyzing *"group"* statistics in the Durbin-H test. As depicted in Table 4, the null hypothesis of "no cointegration" remains unrejected in both Model 0 and Model 1. However, in Model 2 (which includes a constant and trend), the null hypothesis is rejected as the probability value falls below 5%, signifying the presence of a cointegration relationship.

Upon confirming the presence of a long-term cointegration relationship among the considered variables, the subsequent phase of this study involves examining the long-term impact of LnGPR and LnPS on LnFDI using the Cross-Sectionally Autoregressive Distributed Lag (CS-ARDL) model. The results of the panel CS-ARDL analysis are presented in Table 5.

Table 5. CS-ARDL Regression (dependent variable: LnFDI)

	Coefficients	Standart Errors	Z-Statistics	Probability Values
Error Correction (ECT_{-1})	-0.775	0.1367	-4.54	0.00
Short Run Results				
$L.\Delta LnFDI_{i.t-1}$	0.224**	0.0979	2.31	0.02
$\Delta LnGPR_{i.t}$	-0.271**	0.1196	-2.28	0.02
$\Delta LnPS_{i.t}$	0.219	0.1709	1.28	0.21
Constant	1.128	0.8568	1.31	0.19
Long Run Results				
$lr\_LnGPR_{i.t}$	-0.164*	0.0917	-1.78	0.07
$lr\_LnPS_{i.t}$	0.406***	0.1059	3.83	0.00
Number of Observations	690			
Number of Group	10			
R^2 (MG)	0.75			
Prob. > F	0.00			
Root MSE	0.56			

Notes: *, ** and *** denote statistical significances at 1%, 5% and 10% levels respectively. Drawing from insights in previous studies, Eberhardt and Presbitero (2015) recommended a lag length of 2, while Chudik and Pesaran (2015) emphasized that the lag length should not exceed 3. As a result, we chose to utilize 2 lags.

Based on the estimations, the presence of a negative and statistically significant error correction coefficient (ECT_{-1}) indicates the existence of a long-term relationship among the variables of interest. Given our yearly data, the ECT_{-1} coefficient suggests that external shocks in the short run converge to the long-run equilibrium at a rate of approximately 77% per annum. This observation signifies a stable long-term cointegration relationship among the variables. Moving forward, we present both the short-term and long-term effects of LnGPR and LnPS on LnFDI. In the short run, the results indicate that a one-lag of the FDI variable exhibits a positive effect at a significance level of at least 5%. The current-year value of the dependent variable is influenced by its one-year lagged value by %0.224 unit implying that FDI investors consider the realizations of the previous year before reaching a decision on investment. Second, LnGPR is negative and significantly related to LnFDI. The negative coefficient indicates that a %1 unit increase in geopolitical risk leads to a %0.271 unit decrease in investment flows at a 5% significance level. Third, LnPS is positively related to LnFDI. The coefficient of LnPS points out %1 unit increase in LnPS stimulates by %0.219 units in LnFDI. The coefficient keeps its positive sign, but it fails to reach statistical significance. Thus, PS has no explanatory power on investment flows in the short run. It may stem from lags in legislative and policy adjustments. In many countries, bureaucracy and administrative processes can be slow and cumbersome. This can lead to delays in obtaining permits, licenses, and approvals necessary for foreign businesses to operate. These administrative delays can be seen as adjustment lags, as they can hinder the quick implementation of FDI projects in the short run. Lastly, we determined that the constant of the short run model is insignificant according to probability value.

In the long run, the GPR has a negative impact on FDI, similar to short-term observations. For example, during periods of rising geopolitical tensions such as war, trade disputes, or political instability in regions like the Middle East, or Caucasians, investors may be hesitant to invest in those areas. According to Table 5, the estimated coefficient shows that a 1% increase in geopolitical risk reduces investment flow by 0.164%. However, the long-term impact is about half of the short-term effect, indicating a decreasing negative influence of geopolitical developments on investment flows over time. This reduction could be due to factors such as decreasing tensions, resolution of geopolitical conflicts, or establishment of stable governance structures in previously volatile regions. Additionally, measures taken to stabilize markets by governments or international organizations may alleviate investor concerns. For instance, policy reforms aimed at improving transparency and reducing corruption can boost investor confidence and attract capital. On the other hand, PS has a positive and significant impact on investment flows. In countries with high PS, such as those with established democratic systems and respect for the rule of law, investors may perceive lower risks and be more willing to invest. Thus, developed economies tend to attract more FDI. The estimated coefficient suggests that a 1% improvement in PS within the host country increases investment flow by 0.406%. For example, countries that have successfully transitioned from authoritarian regimes to stable democracies, like Chile, have seen significant increases in foreign investment as PS improves. Venezuela is another country with promising potential but faces difficulties in drawing FDI due to its political instability. This instability has led to widespread social unrest, corruption, poverty, violence, and inflation. Similarly, India, Egypt, and Türkiye have not performed well on indicators of PS, such as corruption, low competitiveness, weak institutions, bureaucratic hurdles, and troubled relations with neighboring countries. Consequently, they have failed to attract sufficient FDI to stimulate long-term economic growth.

6. Robustness Check

In this section, next to the main analysis of the cointegration relationship, we assessed the robustness of the results obtained from the CS-ARDL model. On that note, we employed various techniques, namely the CCEMG estimator (Common Correlated Mean Group), AMG estimator (Augmented Mean Group), Cup-FM (Continuously Updated Fully Modified), and Cup-BC estimator (Bias Corrected).

Table 6. Alternative Estimators for Cointegration Coefficient (Dependent variable: LnFDI)

Estimator	β_{LnGPR}	β_{LnPS}	St. Err$_{LnGPR}$	St. Err$_{LnPS}$	t-Stat$_{LnGPR}$	t-Stat$_{LnPS}$
CCE	0.385	0.457	0.249	0.564	1.546	0.810
Cup-FM	-0.396	0.403*	0.302	0.236	-1.311	1.708
Cup-BC	-0.552***	-1.133*	0.204	0.609	-2.706	-1.860
AMG	-0.482***	-0.436	0.221	0.312	-2.181	-1.397

Notes: *, ** and *** denote statistical significances at 1%, 5%, and 10% levels respectively indicating the percentages at which the null hypothesis is rejected at the significance levels of 1%, 5%, and 10%.

Table 6 carries out additional empirical exercises for robustness check. We assessed the behavior of the coefficients of main interest according to alternative estimators and displayed the outcomes. As seen in the table, the estimated coefficients of CCE indicate that none of the independent variables are statistically significant at all conventional levels. Thus, GPR and PS have no explanatory power in this manner. In the Cup-FM estimator, only the coefficient of LnPS is still positively signed $(\beta_{LnPS}^{CupFM})_{\%10} = 0.403$ and it is greater in terms of statistical significance and magnitude than their short-term counterpart. However, the other variables are statistically insignificant and exhibit no effect on investment flows. The cup-BC estimator yields a significant negative relationship between LnGPR and LnFDI at conventional size. As such, $(\beta_{LnGPR}^{CupBC})_{\%1}$ = -0.552 indicates a negative effect of geopolitical risk on investment flows. But unlike the CS-ARDL model, LnPS has a negative and significant relation with the dependent variable with a negative slope coefficient of $(\beta_{LnPS}^{CupBC})_{\%10}$ = -1.133 level. The last estimator is AMG. Similarly, using the AMG estimation technique, LnGPR and LnFDI show a significant and negative relationship, i.e. $(\beta_{LnGPR}^{AMG})_{\%1}$ = -0.482. However, the LnPS variable has no significant effect on investment flows according to their significance level. At the last stage of the robustness check, we investigated the causality between the variables under consideration. The CS-ARDL estimate does not provide any information on the causal links between variables. For this purpose, we utilize the Bootstrap Panel Causality test, as proposed by Konya (2006), which is based on Seemingly Unrelated Regressions (SUR) and employs the Wald test with bootstrap critical values.

Table 7. Results For Bootstrap Panel Granger Causality Test

	H_0: LnFDI does not cause LnGPR					**H_0: LnGPR does not cause LnFDI**				
			Bootstrap Crictical					**Bootstrap Crictical Values**		
Countries	Wald Stat.	Bootstrap P-value	99th. Obs. for 1%	95th. Obs. for 5%	90th. Obs. for 10%	Wald Stat.	Bootstrap P-Value	99th. Obs. for 1%	95th. Obs. for 5%	90th. Obs. for 10%
China	0.21	0.78	14.28	9.32	6.44	22.51*	0.05	41.30	24.07	14.22
Egypt	2.38	0.30	23.25	10.48	6.42	4.21	0.16	18.28	8.02	5.47
India	2.35	0.51	25.56	15.61	10.42	5.79	0.13	19.25	10.53	7.19
Israel	2.18	0.57	23.71	13.96	10.45	2.35	0.35	21.50	10.86	8.23
S. Korea	10.52**	0.06	27.69	13.72	7.04	0.78	0.63	23.78	13.33	9.44
Mexico	4.95	0.37	37.18	16.32	9.54	1.28	0.65	46.70	20.14	13.74
Poland	4.75	0.25	29.67	15.01	10.97	8.62*	0.05	14.51	7.47	3.81
Russia	3.99	0.28	27.67	15.14	12.61	9.776*	0.07	18.37	11.45	7.89
Türkiye	3.68	0.45	32.02	22.68	14.38	4.18	0.25	34.51	13.74	9.18
Ukraine	0.64	0.69	38.21	16.97	11.13	16.83**	0.03	20.51	9.63	6.09

Notes: *, ** and *** denote statistical significance of rejection at 10, 5 and 1%, respectively indicate the percentages at which the null hypothesis is rejected at the significance levels of 1%, 5%, and 10%. Critical values are based on 10,000 bootstrap replications. Optimal lag length represent the lag for which Schwarz Bayesian Criterion has minimal levels.

As seen in table 7, there is no Granger causality (Wald statistics are lower than the bootstrap critical values) except in the case of South Korea where the null hypothesis that *LnFDI does not cause LnGPR* is rejected at a %5 significance level. When we consider the opposite direction, there is sufficient evidence against the null hypothesis at a conventional level in the case of China, Poland, Russia, and Ukraine. GPR surrounding China are complex and encompass a wide range of factors, including tensions with neighboring countries (Japan, India, and Taiwan), trade disputes, and territorial disputes in the South China Sea, human rights concerns, and competition with other global powers like the United States. The conflict between Russia and Ukraine, which began in 2014 with Russia's annexation of Crimea and ongoing unrest in Eastern Ukraine, represents a significant geopolitical risk. These developments are an important source of instability and uncertainty because of both regional and global scale. Therefore, these countries have become more sensitive to GPR regarding FDIs. But for the remaining cases, the results provide weak evidence in favour of the alternative hypothesis.

Table 8. Results For Bootstrap Panel Granger Causality Test

	H_0: LnFDI does not cause LnPS					**H_0: LnPS does not cause LnFDI**				
			Bootstrap Crictical					**Bootstrap Crictical Values**		
Countries	Wald Stat.	Bootstrap P-value	99th. Obs. for 1%	95th. Obs. for 5%	90th. Obs. for 10%	Wald Stat.	Bootstrap P-Value	99th. Obs. for 1%	95th. Obs. for 5%	90th. Obs. for 10%
China	0.75	0.66	24.43	12.05	9.77	0.19	0.71	11.22	7.33	4.75
Egypt	0.11	0.76	10.63	5.56	4.04	5.58**	0.06	10.37	4.46	2.91
India	12.41**	0.05	23.56	11.96	8.49	4.55	0.14	16.94	9.01	5.17
Israel	0.387	0.74	20.63	12.44	9.01	7.05*	0.09	22.09	9.86	6.26
S. Korea	838	0.13	26.31	10.78	9.24	5.59	0.18	20.86	12.33	8.49
Mexico	0.95	0.71	19.71	13.41	9.94	11.38*	0.08	25.82	14.31	10.17
Poland	1.64	0.37	26.98	13.10	8.03	2.93	0.22	15.7	6.79	4.54
Russia	2.38	0.26	15.13	6.65	4.48	3.27	0.25	18.11	9.46	6.26
Türkiye	3.01	0.11	8.39	4.12	3.24	2.23	0.20	15.06	6.39	4.28
Ukraine	1.33	0.58	12.49	8.57	6.14	1.08	0.53	25.75	12.53	8.17

Notes: *, ** and *** denote statistical significance of rejection at 10, 5 and 1%, respectively. Indicate the percentages at which the null hypothesis is rejected at the significance levels of 1%, 5%, and 10%. Critical values are based on 10,000 bootstrap replications. Optimal lag length represents the lag for which Schwarz Bayesian Criterion has minimal levels.

Table 8 reports the results for granger non-causality between PS and investment flows. It is clear that the null of *LnFDI does not cause LnPS* cannot be rejected only for India at a %5 significance level. However, it is possible to draw a conclusion for the inverse direction that an increase in the LnPS leads to an increase in LnFDI in 3 out of 10 cases namely Egypt, Israel, and Mexico. Although these countries have a moderate score in the geopolitical risk database, they have experienced negative developments during the last years including coup d'état, controversial government policies, political upheaval, civil unrest, social protests, border disputes, regulatory unpredictability, and lack of a robust fiscal response to the COVID-19 crisis. Thus, political turmoil could steer investors away, damage the confidence of potential investors, and jeopardize existing investments. Regarding these countries, Thomas and Grosse (2001), Kim (2010), Detta (2013), Samford and Gomez (2014), and Kurecic and Kokotovic (2017) proved that countries exhibiting robust PS have strong potential to attract more FDI inflows. In addition, Colino (2013), Julio and Yook (2016), Beazer and Blake (2018), and Dedeoğlu et al. (2019) have documented that good governance (e.g. regulatory quality, efficient rule of law, accountability) can mitigate the negative effect of political instability.

7. Conclusion

In this paper, in addition to the cointegration relationship and coefficient estimation, we investigated the direction of causality between FDI, GPR, and PS for the period 2000-2022 with yearly data in dynamic panel models for high-risk countries in the relevant database. The econometric findings indicate robust evidence that GPR and PS have statistically significant effects on investment flows in the context of sample countries. This suggests that GPR have negative effects on FDI volume. However, PS has a positive impact on FDI inflow implying that good governance, and a stable social, economic, or political environment mitigates the negative effect of GPR on FDI by ensuring consistent, independent, and effective policymaking. In this manner, our findings have important implications for policymakers.

GPR and FDI have a complex relationship that significantly impacts investment decisions. They encompass various factors such as political conflicts, territorial disputes, and international tensions. Thus, they can directly impact FDI by potentially leading to losses through expropriation or political upheaval and they have a negative impact on FDI, as investors prefer stable, predictable, and safe environments. Additionally, it can have indirect effects by disrupting supply chains and markets, thereby affecting investment profitability. High geopolitical risk can also increase borrowing costs and limit financing access, making it more challenging for businesses to operate and expand. Second, PS is a vital aspect of an attractive investment climate. Stable governments instill confidence in investors by reducing the risk of sudden policy changes, expropriation, or political turmoil. They also uphold the rule of law, protect property rights, and enforce contracts, which are crucial for business operations. Moreover, PS enables long-term planning and signals a lower risk of capital loss due to political upheaval. While many democratic countries offer these advantages, non-democratic countries like China can also attract significant FDI due to their predictability and support for a free market economy. To attract more investment, a country should maintain economic policy clarity, minimize administrative chaos, avoid frequent changes in market rules, and reduce market interventions.

For example, in the case of Egypt, youth unemployment, high inflation rate, effects of Arab springs, Coup D’état in 2013, currency depreciation, and geopolitical tensions, pose a risk to PS. With its political instability marred by geopolitical unrest in the Middle East, the country reinforces this negative trend in the long term and experiences challenges attracting FDI. Also, the decline in the Suez Canal and tourism revenues due to regional conflicts has added to existing challenges. When we consider Mexico, regulatory unpredictability, uncertainty about contract enforcement and informality, public policy priorities in the energy sector, widespread corruption and bribery (ranks 126th out of 180 countries), highly skewed income distribution, organized crime, and terrorism from gangs (ranks 137 out of 163 countries) are important sources of risk and instability. In fact, the rule of law and control of corruption are below Latin America’s average. Lastly debates over geopolitics (e.g. South China see) and trade disputes (trade war in the Trump era) between China and the USA have resulted in increased Chinese investments flowing into Mexico, especially concerning its effects on US national security. This has prompted calls for Mexico to enhance its foreign investment screening, showing increasing pressure from the US to limit the flow of Chinese goods entering the US via Mexico.

In the case of Russia, the conflict in Ukraine is important because of the region's strategic value. Ukraine acts as a vital transit route for energy resources, connecting Russia to Europe. Any disruptions to this critical energy infrastructure can have severe consequences for energy markets and prices worldwide. Additionally, the conflict has led to economic sanctions imposed by several countries, which restrict trade and make business operations more complicated. These sanctions have made it harder for Russia to access global financial markets and have discouraged foreign investments. As a result of the war and economic restrictions, many multinational companies have had to reduce or stop their operations in the region. Individual investors have also tried to spread out their investments, decreasing their involvement in the area and redirecting their portfolios into more stable regions. Lastly, Türkiye lies within one of the world's most volatile regions. The Middle East has been a center for wars, internal conflicts, terrorist incidents, and popular uprisings for many years due to the struggle for control over energy resources like oil and natural gas. The conflict-prone nature of the region negatively affects both itself and the countries surrounding it. Moreover, ongoing issues such as the Syrian civil war and the refugee crisis, the longstanding tension between Azerbaijan and Armenia, and the Georgia-Russia dispute over Abkhazia and South Ossetia, which sometimes escalate into active conflicts, are adverse developments that place Turkey in a challenging position, both economically and in terms of attracting investments. Lastly, applied economic programs (e.g. New Economic Program started on 20 December 2021) that mark an abrupt break from the unorthodox policies (e.g. arbitrary decrease in interest rate) and increased frequency of economic regulations have reduced predictability in the economy, complicated the ability of economic actors to foresee long-term outcomes and weakened confidence in economic management among investors.

As a result, regions characterized by stability, positive diplomatic relations, and predictable geopolitics tend to attract more FDI. Conversely, even politically stable countries may experience reduced FDI inflows in regions marked by geopolitical tensions or diplomatic conflicts. Geopolitical risk acts as a counterbalance to PS, significantly influencing investment decisions by shaping perceptions of safety and predictability in investment environments. To this end, policymakers must prioritize measures aimed at bolstering PS, ensuring administrative predictability, enhancing the regulatory framework, and fostering regional cooperation to attract higher levels of foreign investment. Additionally, open and constructive diplomatic initiatives, conflict resolution mechanisms, the establishment of a stable and transparent business environment, the enforcement of the rule of law, the implementation of transparent regulatory frameworks, as well as forging trade agreements and partnerships, all play a pivotal role in creating a conducive environment for attracting investment.

Declaration of Research and Publication Ethics
This study which does not require ethics committee approval and/or legal/specific permission complies with the research and publication ethics.

Researcher's Contribution Rate Statement
I am a single author of this paper. My contribution is 100%.

Declaration of Researcher's Conflict of Interest
There are no potential conflicts of interest in this study.

References

Abdella, A.B., Naghavi, N. and Fah, B.C.Y. (2018). The effect of corruption, trade openness and political stability on foreign direct investment: Empirical evidence from BRIC countries. *International Journal of Advanced and Applied Sciences*, 5(3), 32-38. https://doi.org/10.21833/ijaas.2018.03.005

Acocella, N. (1992). The multinational firm and the theory of industrial organization. In A. Del Monte (Ed.), *Recent developments in the theory of industrial organization* (pp. 232-251). London: Palgrave Macmillan.

Aisen, A. Veiga, F.J. (2013). How does political instability affect economic growth? *European Journal of Political Economy*, 29, 151-167. https://doi.org/10.1016/j.ejpoleco.2012.11.001

Aliber, R. (1970). A theory of foreign direct investment. In C.P. Kindleberger (Ed.), *The international corporation* (pp.17-34). Cambridge: The MIT Press.

Ameer, W., Sohag, K., Xu, H. and Halwan, M.M. (2020). The impact of OFDI and institutional quality on domestic capital formation at the disaggregated level: Evidence for developed and emerging countries. *Sustainability*, 12(9), 3661. doi:10.3390/su12093661

Antonakakis, N., Gupta, R., Kollias, C. and Papadomou, S. (2017). Geopolitical risks and the oil stock nexus over 1899–2016. *Finance Research Letters*, 23(2017), 165–173. http://dx.doi.org/10.1016/j.frl.2017.07.017

Azam, M, Uddin, I, Khan S. and Tariq, M. (2022). Are globalization, urbanization, and energy consumption cause carbon emissions in SAARC region? New evidence from CS-ARDL approach. *Environmental Science Pollution Research*, 29(58), 87746–87763. https://doi.org/10.1007/s11356-022-21835-1

Beazer, Q. H. and Blake, D.J. (2018). The conditional nature of political risk: How home institutions influence the location of foreign direct investment. *American Journal of Political Science*, 62(2), 470–485. https://doi.org/10.1111/ajps.12344

Bersvendsen T. and Ditzen, J. (2021). Testing for slope heterogeneity in Stata. *The Stata Journal*, 21(1), 51-80. https://doi.org/10.1177/1536867X211000004

Bilgin, M.H., Gozgor, G. and Karabulut, G. (2020). How do geopolitical risks affect government investment? An empirical investigation. *Defence and Peace Economics*, 31(5), 550-564. doi:10.1080/10242694.2018.1513620

Breusch, T.S. and Pagan, A.R. (1980). The Lagrange multiplier test and its applications to model specification tests in econometrics. *Review of Economic Studies*, 47(1), 239-253. https://doi.org/10.2307/2297111

Buitrago, R.R.E. and Barbosa, C.M.I. (2020). Home country institutions and outward FDI: An exploratory analysis in emerging economies. *Sustainability*, 12(23), 10010. https://doi.org/10.3390/su122310010

Busse, M. and Hefeker, C. (2007). Political risk, institutions and foreign direct investment. *European Journal of Political Economy*, 23(2), 397-415. https://doi.org/10.1016/j.ejpoleco.2006.02.003

Bussy, A. and Zheng, H. (2023). Responses of FDI to geopolitical risks: The role of governance, information, and technology. *International Business Review*, 32, 102136. https://doi.org/10.1016/j.ibusrev.2023.102136

Butler, K.C. and Joaquin, D.C. (1998). A note on political risk and the required return on foreign direct investment. *Journal of International Business Studies*, 29(3), 599-607. https://doi.org/10.1057/palgrave.jibs.8490009

Caldara D. and Iacoviello, M. (2018). *Measuring geopolitical risk* (FRB International Finance Discussion Paper No.1222). Retrieved from https://www.federalreserve.gov/econres/ifdp/measuring-geopolitical-risk.htm

Caldara, D. and Iacoviello, M. (2022). Measuring geopolitical risk. *American Economic Review*, 112(4), 1194-1225. doi:10.1257/aer.20191823

Cheng, C.H.J. and Chiu, C.W. (2018). How important are global risks to emerging economies? *International Economics*, 156, 305-325. doi:10.1016/j.inteco.2018.05.002

Cherian, J.A. and Perotti, E. (2001). Option pricing and foreign investment under political risk. *Journal of International Economics*, 55(2), 359-377. https://doi.org/10.1016/S0022-1996(01)00083-6

Chudik, A., Mohaddes, K., Pesaran, M. and Raissi, M. (2016). Long-run effects in large heterogeneous panel data models with cross-sectionally correlated errors, advances in econometrics. In G.G. Rivera, R.C. Hill, and T.H. Lee (Eds.), *Essay in honour of Aman Ullah* (pp. 85-135). UK: Emerald Group Publishing Limited.

Chudik, A. and Peseran, H. (2015). Common correlated effects estimation of heterogeneous dynamic panel data models with weakly exogenous regressors. *Journal of Econometrics*, 188(2), 393-420. doi:10.1016/j.jeconom.2015.03.007

Ciesielska-Maciagowska D. and Koltuniak, M. (2021). Foreign direct investments and home country's institutions: The case of CEE countries. *Eurasian Research Studies Journal*, 24(1), 335-353. doi:10.35808/ersj/1965

Click, R.W. and Weiner, R.J. (2010). Resource nationalism meets the market: political risk and the value of petroleum reserves. *Journal of International Business Studies*, 41(5). https://doi.org/10.1057/jibs.2009.90

Colino, A. (2013). Conflict resolution processes, uncertainty and investment dynamics: Evidence for the Basque country. *Defence and Peace Economics*, 24(3), 229-245. https://doi.org/10.1080/10242694.2012.673840

Cordero, A.M. and Miller, S.R. (2019). Political party tenure and MNE location choices. *Journal of International Business Studies*, 50, 973–997. https://doi.org/10.1057/s41267-019-00220-0

Cuervo, C.A. (2006). Who cares about corruption? *Journal of International Business Studies*, 37(6), 807-822. Retrieved from https://www.jstor.org/

Cuypers, I.R.P., Hennart, J.F., Siverman, B. and Ertug, G. (2021). Transaction cost theory: Past progress, current challenges, and suggestions for the future. *The Academy of Management Annals*, 15(1), 111-150. doi:10.5465/annals.2019.0051

Czinkota, M.R., Knight, G., Liesch, P. and Sten, J. (2010). Terrorism and international business: A research agenda. *Journal of International Business Studies*, 41(5), 826-843. https://doi.org/10.1057/jibs.2010.12

Çalışkan, Z.D. (2019). Political stability and financial development: Evidence from Turkey. *Fiscaoeconomia*, 3(3), 72-79. doi:10.25295/fsecon.2019.03.005

Dahmani, M., Mabrouki M. and Youssef, A. (2023). The ICT, financial development, energy consumption and economic growth nexus in MENA countries: Dynamic panel CS-ARDL evidence. *Applied Economics*, 55(1), 1114-1128. https://doi.org/10.1080/00036846.2022.2096861

Darendeli, I.S. and Hill, T.L. (2016). Uncovering the complex relationships between political risk and MNE firm legitimacy: Insights from Libya. *Journal of International Business Studies*, 47(1), 68-92. https://doi.org/10.1057/jibs.2015.27

Daştan, M., Karabulut, K. and Yalçınkaya, Ö. (2022). The nexus between uncertainty and foreign direct investment flows to G-20 member countries. *Ekonomski Pregled*, 73(5), 717-739. https://doi.org/10.32910/ep.73.5.3

Daude, C. and Stein, E. (2007). The quality of institutions and foreign direct investment. *Economics and Politics*, 19(3), 317-344. https://doi.org/10.1111/j.1468-0343.2007.00318.x

Dedeoğlu, D., Öğüt, K. and Pişkin, A. (2019). Yönetişim kalitesi, jeopolitik risk ve doğrudan yabancı yatırım ilişkisi: Gelişmekte olan ülkeler örneği. *Finans Politik and Ekonomik Yorumlar*, 56(650), 51-69. Retrieved from https://openurl.ebsco.com/

Demiralay, S. and Kılıçarslan, E. (2019). The impact of geopolitical risks on travel and leisure stocks. *Tourism Management*, 75, 460–476. doi:10.1016/j.tourman.2019.06.013

Denisia, V. (2010). Foreign direct investment theories: An overview of the main FDI theories. *European Journal of Interdisciplinary Studies*, 2(2), 104-110. Retrieved from https://www.ejist.ro/

Detta, J.A.V. (2013). Politics and legal regulation in the international business environment: An FDI case study of Alstom, SA, in Israel. *The University of Miami Inter-American Law Review*, 21(3), 1-106. Retrieved from https://repository.law.miami.edu/

Di Iorio, F. and Fachin, S. (2008). *A note on the estimation of long-run relationships in dependent cointegrated panels* (MPRA Paper No. 12053). Retrieved from https://mpra.ub.uni-muenchen.de/12053/

Dunning, J.H. (1977). Trade, location of economic activity and the MNE: A search for an eclectic approach. In B. Ohlin, P.O. Hesselborn, and P.J. Wijkman (Eds.), *The international allocation of economic activity* (pp. 395-418). London: Palgrave Mac Millan.

Dunning, J.H. (1979). Explaining changing patterns of international production: In defence of the eclectic theory. *Oxford Bulletin of Economics and Statistics*, 41(4), 269-295. http://dx.doi.org/10.1111/j.1468-0084.1979.mp41004003.x

Dunning, J.H. (2000). The eclectic (OLI) paradigm of international production: Past, present and future. *Journal of the Economics of Business*, 8(2), 173-190. doi:10.1080/13571510110051441

Eberhart, M. and Presbitero, A. (2015). Public debt and growth: Heterogeneity and non-linearity. *Journal of International Economics*, 97(1), 45-58. https://doi.org/10.1016/j.jinteco.2015.04.005

Eduardo, M., de Arce, R. and Escribano, G. (2014). Do changes in the rules of the games affect FDI flows in Latin America? A look at the macroeconomic, institutional and regional integration determinants of FDI. *European Journal of Political Economy*, 34, 279-299. https://doi.org/10.1016/j.ejpoleco.2014.02.001

Egger, P. and Winner, H. (2005). Evidence on corruption as an incentive for foreign direct investment. *European Journal of Political Economy*, 21(4), 932-952. https://doi.org/10.1016/j.ejpoleco.2005.01.002

Elish, E. (2022). Political and productive capacity characteristics as outward foreign direct investment push factors from BRICS countries. *Humanities and Social Sciences Communications*, 9(1), 432. https://doi.org/10.1057/s41599-022-01460-6

Fania, N., Yan, C., Kuyon, J.B. and Djeri, S. (2020). Geopolitical risks (GPRs) and foreign direct investments: A business risk approach. *Global Journal of Management and Business Research*, 20(1), 1-8. Retrieved from https://journalofbusiness.org/

Filippaios, F., Diab, F.A., Hermidas, A. and Theodorakis, C. (2019). Political governance, civil liberties, and human capital: Evaluating their effect on foreign direct investment in emerging and developing economies. *Journal of International Business Studies*, 50, 1103–1129. https://doi.org/10.1057/s41267-019-00239-3

Freckleton, M., Wright, A. and Craigwell, R. (2012). Foreign direct investment, economic growth and corruption in developed and developing economies. *Journal of Economic Studies*, 39(6), 639-652. https://doi.org/10.1108/01443581211274593

Friberg, R. (2015). *Managing risk and uncertainty: A strategic approach*. Cambridge: The MIT Press.

Garriga, A.C. and Phillips, B. (2023). Organized crime and foreign direct investment: Evidence from criminal groups in Mexico. *Journal of Conflict Resolution*, 67(9), 1675–1703. https://doi.org/10.1177/00220027221145870

Giambona, E., Graham, J.R. and Harvey, C.R. (2017). The management of political risk. *Journal of International Business Studies*, 48(4), 523–533. doi:10.1057/s41267-016-0058-4

Haksoon, K. (2010). Political stability and foreign direct investment. *International Journal of Economics and Finance*, 2(3), 59-71. http://dx.doi.org/10.5539/ijef.v2n3p59

Halwan, M., Bin, Z., Ameer, W., Mumtaz, N., Mumtaz, A. and Amin, A. (2022). Research methods in a multinational business environment and implications for capital formation: Application of CS-ARDL methods. *Frontiers in Psychology*, 13, 867891. https://doi.org/10.3389/fpsyg.2022.867891

Henisz, W.J. (2000). The institutional environment for multinational investment. *The Journal of Law, Economics and Organization*, 16(2), 334–364. https://doi.org/10.1093/jleo/16.2.334

Henisz, W.J. and Zelner, B.A. (2005). Legitimacy, interest group pressures, and change in emergent institutions: The case of foreign investors and host country governments. *Academy of Management Review*, 30(2), 361–382. Retrieved from https://www.jstor.org/

Hussain, Z., Mehmood, B., Khan, M.K. and Tsimisaraka, R.S. (2022). Green growth, green technology, and environmental health: Evidence from high-GDP countries. *Frontiers in Public Health*, 9, 816697. doi:10.3389/fpubh.2021.816697

Hymer, S.H. (1960). *The international operations of national firms: A study of direct foreign investment* (Unpublished doctoral dissertation). Massuchusetts Institute of Technology, Cambridge, USA.

International Financial Statistics. (2024). *IMF Statistics on macroeconomic and financial data* [Dataset]. Retrieved from https://data.imf.org/

Jensen, N. (2008). Political risk, democratic institutions, and foreign direct investment. *The Journal of Politics*, 70(4), 1040–1052. https://doi.org/10.1017/s0022381608081048

Jose R.G. and Ling, L. (2015). Corruption distance and FDI flows into Latin America. *International Business Review*, 24(1), 33-42. https://doi.org/10.1016/j.ibusrev.2014.05.006

Julio, B. and Yook, Y. (2016). Policy uncertainty, irreversibility, and cross-border flows of capital. *Journal of International Economics*, 103, 13–26. https://doi.org/10.1016/j.jinteco.2016.08.004

Kappler, M. (2006). *Panel tests for unit roots in hours worked* (ZEW Discussion Papers No. 06-022). Retrieved from https://www.econstor.eu/bitstream/10419/24214/1/dp06022.pdf

Kaufmann, D., Kraay, A. and Mastruzzi, M. (2010). *The worldwide governance indicators: Methodology and analytical issues* (World Bank Policy Research Working Paper No. 5430). Retrieved from https://link.springer.com/content/pdf/10.1017/S1876404511200046.pdf

Kim, H. (2010). Political stability and foreign direct investment. *International Journal of Economics and Finance*, 2(3), 59-71. doi:10.5539/ijef.v2n3p59

Konya, L. (2006). Exports and growth: Granger causality analysis on OECD countries with a panel data approach. *Econometric Modelling*, 23(6), 978–992. https://doi.org/10.1016/j.econmod.2006.04.008

Kurecic, P. and Kokotovic, F. (2017). The relevance of political stability on FDI: A VAR analysis and ARDL models for selected small, developed, and instability threatened economies. *Economies*, 5(3), 22. https://doi.org/10.3390/economies5030022

Le, A.N.N., Pham, H., Pham, D.T.N. and Duong, K.D. (2023). Political stability and foreign direct investment inflows in 25 Asia-Pacific countries: The moderating role of trade openness. *Humanities and Social Sciences*, 10, 606. https://doi.org/10.1057/s41599-023-02075-1

Lizondo, J.S. (1991). Foreign direct investment. determinants and systemic consequences of international capital flows. *International Monetary Fund Occasional Paper*, 77, 68-80. https://doi.org/10.5089/9781557752055.084

Loree, D.W. and Guisinger, S. (1995). Policy and non-policy determinants of U.S. equity foreign direct investment. *Journal of Business Studies*, 26(2), 281-299. https://doi.org/10.1057/palgrave.jibs.8490174

Makoni, P.I. (2015). An extensive exploration of theories of foreign direct investment risk governance and control. *Financial Markets and Institutions*, 5(2), 77-83. doi:10.22495/rgcv5i2c1art1

Miller, K.D. (1992). A framework for integrated risk management in international business. *Journal of International Business Studies*, 23(2), 311-331. https://doi.org/10.1057/palgrave.jibs.8490270

Mundell, R.A. (1957). International trade and factor mobility. *The American Economic Review*, 47(3), 321-335. Retrieved from https://www.jstor.org/

Nayak, D. and Choudhury, R.N. (2014). *A selective review of foreign direct investment theories* (ARTNeT Working Paper Series No.143). Retrieved from https://www.econstor.eu/bitstream/10419/103862/1/782793517.pdf

Nizam, K. (2022). The influence of corruption, political stability, foreign direct investment, and domestic investment on economic growth in BRICS countries front. *Frontiers in Environmental Science*, 10, 1036105. doi:10.3389/fenvs.2022.1036105

Nkoro, E. and Uko, A.K. (2016). Autoregressive distributed lag (ARDL) cointegration technique: Application and interpretation. *Journal of Statistical and Econometric Methods*, 5(4), 63-91. Retrieved from http://www.scienpress.com/

Oetzel, J.M. and Oh, C.H. (2014). Learning to carry the cat by the tail: firm experience, disasters, and multinational subsidiary entry and expansion. *Organization Science*, 25(3), 732-756. https://doi.org/10.1287/orsc.2013.0860

Oh, C.H. and Oetzel, J. (2011). Multinationals’ response to major disasters: How does subsidiary investment vary in response to the type of disaster and the quality of country governance? *Strategic Management Journal*, 32(6), 658–681. https://doi.org/10.1002/smj.904

P´astor, L. and Veronesi, P. (2013). Political uncertainty and risk premia. *Journal of Financial Economics*, 110(3), 520-545. https://doi.org/10.1016/j.jfineco.2013.08.007

Pesaran, M.H. (2006). Estimation and inference in large heterogeneous panels with a multifactor error. *Econometrica*, 74(4), 967-1012. https://doi.org/10.1111/j.1468-0262.2006.00692.x

Pesaran, M.H., Shin, Y. and Smith, R.J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16, 289–326. Retrieved from https://www.jstor.org/

Pesaran, H. and Smith, R. (1995). Estimating long-run relationships from dynamic heterogeneous panels. *Journal of Econometrics*, 68(1), 79-113. https://doi.org/10.1016/0304-4076(94)01644

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

Phillips-Patrick, F.J. (1989). The effect of asset and ownership structure on political risk: Some evidence from Mitterrand's election in France. *Journal of Banking and Finance*, 13(4-5), 651-671. Retrieved from https://www.jstor.org/

Radu, M. (2015). Political Stability - A condition for sustainable growth in Romania? *Procedia Economics and Finance*, 30, 751 – 757. doi:10.1016/S2212-5671(15)01324-6

Rashid, M., Looi, X.H. and Wong, S. (2017). Political stability and FDI in the most competitive Asia Pacific countries. *Journal of Financial Economic Policy*, 9(2), 140-155. https://doi.org/10.1108/JFEP-03-2016-0022

Rasiah, R. and Yap, X.S. (2019). How much of Raymond Vernon’s product cycle thesis is still relevant today: Evidence from the integrated circuits industry. *International Journal of Technological Learning, Innovation and Development*, 11(1), 56-77. doi:10.1504/IJTLID.2019.10018598

Rauf, S., Mehmood, R., Rauf, A. and Mehmood, S. (2016). Integrated model to measure the impact of terrorism and political stability on FDI inflows: Empirical study of Pakistan. *International Journal of Economics and Finance*, 8(4), 1-7. doi:10.5539/ijef.v8n4p1

Ricardo, D. (1821). *On the principle of political economy and taxation* (Third Edition). Canada: Batoche Books.

Samford, S. and Gomez, P.O. (2014). Subnational politics and foreign direct investment in Mexico. *Review of International Political Economy*, 21(2), 467-496. http://dx.doi.org/10.1080/09692290.2012.7333

Sethi, P.S. and Luther, K.A.N. (1986). Political risk analysis and direct foreign investment: Some problems of definition and measurement. *California Management Review*, 28(2), 57-68. https://doi.org/10.2307/41165184

Smith, A. (1776). *An inquiry into the nature and causes of the wealth of nations* (1st. digital ed.). Library of Economics and Liberty.

Swamy, P.A.V.B. (1970). Efficient inference in a random coefficient regression model. *Econometrica*, 38(2), 311-323. https://doi.org/10.2307/1913012

Thomas, D. and Grosse, R. (2001). Country-of-origin determinants of foreign direct investment in an emerging market: The case of Mexico. *Journal of International Management*, 7(1), 59-79. https://doi.org/10.1016/S1075-4253(00)00040-5

Uddin, I., Usman, M., Saqip, N. and Makhdum, M.S. (2023). The impact of geopolitical risk, governance, technological innovations, energy use, and foreign direct investment on CO2 emissions in the BRICS region. *Environmental Science and Pollution Research*, 30(73714–73729). https://doi.org/10.1007/s11356-023-27466-4

UNDP. (2024). *Human development reports* [Dataset]. Retrieved from https://hdr.undp.org/data-center/human-development-index#/indicies/HDI

Wang, H. (2023). The impact of geopolitical stability on foreign investment and transnational corporations: A case study of the Russia-Ukraine conflict. *Advances in Economics Management and Political Sciences*, 63(1), 141-147, doi:10.54254/2754-1169/63/20231395

Wang, H., Liu, Y., Xiong, W. and Song, J. (2019). The moderating role of governance environment on the relationship between risk allocation and private investment in PPP markets: Evidence from developing countries. *International Journal of Project Management*, 37(1), 117–130. https://doi.org/10.1016/j.ijpro man.2018.10.008

Westerlund, J. (2006). *Panel cointegration tests of the fisher effect* (Maastricht University School of Business and Economics Research Paper No. 054). https://doi.org/10.26481/umamet.2006054

Westerlund, J. (2008). Panel cointegration tests of the fisher effect. *Journal of Applied Econometrics*, 23(2), 193-223. https://doi.org/10.1002/jae.967

Witt, M.A. (2019). De-globalization: Theories, predictions, and opportunities for international business research. *Journal of International Business Studies*, 50(7), 1053–1077. https://doi.org/10.1057/s41267-019-00219-7

Witte, C.T., Burger, M., Ianchovichina, E. and Pennings, E. (2017). Dodging bullets: The heterogeneous effect of political violence on greenfield FDI. *Journal of International Business Studies*, 48(7), 862–892. https://doi.org/10.1057/s41267-017-0079-7

World Development Indicator. (2024). *World Bank statistics* [Dataset]. Retrieved from https://databank.worldbank.org/source/

Worldwide Governance Indicators. (2024). *World Bank data on worldwide governance* [Dataset]. Retrieved from https://www.worldbank.org/en/publication/

Yu, M. and Wang, N. (2023). The influence of geopolitical risk on international direct investment and its countermeasures. *Sustainability*, 15, 2522. https://doi.org/10.3390/su15032522

Zhang, W.B. (2008). International trade theory, capital, knowledge, economic structure, money, and prices over time. Berlin: Springer.

Zouhaier, A. (2019). *The role of political instability and corruption on foreign direct investment in the MENA region* (MPRA Paper No. 95732). Retrieved from https://mpra.ub.uni-muenchen.de/95732/1/MPRA_paper_95732.pdf