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Political Instability and the Patterns of Foreign Direct Investment: Fresh Empirical Evidence from Developing Economies

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ABSTRACT

The major objective of this study is to empirically analyze the impact of political instability on the patterns of foreign direct investment (FDI) in developing nations. Leveraging data from 24 countries across ten regions over a 41-year period, we employ the first-difference generalized method of moments (GMM) and fixed-random effect models to analyze the data and robustness of our regression models. Our findings unveil a significant negative impact of political instability on FDI within the selected economies. Additionally, inflation, domestic savings, and exchange rates are revealed as factors diminishing FDI inflows, while GDP exerts a positive influence on FDI trends. To address these challenges and promote investment in developing countries, the study underscores the significance of implementing the MSJELT plan, which recommends managing the money supply (MS), the need for judicial reforms (J) to enhance the rule of law, improving the ease of doing business (E), and the necessity of a low-tax policy (LT) to attract corporate sector investment.

1 Introduction

Political instability greatly affects the economic development of nations, especially in developing economies. It includes issues like violence, corruption, regime changes, and uncertainty, all of which impact a country's investment climate (Aisen & Veiga, 2013). This research aims to explore the connection between political instability and investment in developing economies, providing new evidence to contribute to the ongoing discussion. Investment is crucial for economic growth and development as it promotes capital accumulation, technological progress, and job creation. However, investments are greatly influenced by the political situation. Political instability in developing economies can cause uncertainty, risk, and reduced investor confidence, which discourages both domestic and foreign investments. It is important for policymakers and investors to understand how political instability affects investment decisions. This understanding helps in developing strategies to reduce these negative effects and promote sustainable economic development.

In recent decades, foreign direct investment (FDI) has emerged as a critical driver of economic growth and development in both developed and developing economies. FDI not only injects vital capital but also brings valuable managerial expertise, job opportunities, and technological advancements (Talat & Zeshan, 2013; Wafure et al., 2010). This has led developing economies to actively compete for foreign investment by crafting and adapting policies to create an attractive investment climate. Notably, developing economies have witnessed a substantial increase in FDI inflows, driven by factors such as market potential, favorable policies, regulatory frameworks, and increased openness (Cheng et al., 2017). Statistics show a significant rise in FDI inflows, climbing from $34.66 billion in the 1990s to an impressive $764.67 billion by 2015 (Bano et al., 2019).

However, the ability to attract FDI varies across nations, prompting researchers to scrutinize the strategies and policies employed by developing economies to successfully court FDI inflows. FDI not only bridges critical gaps in domestic investment and savings but also fosters economic growth, technological advancement, mass production, job creation, and competition (Anwar & Afza, 2014). Using Pakistan as an example, it experienced a notable influx of FDI due to its strategic location and economic activities between 2005 and 2007, with World Bank statistics revealing a surge in FDI inflows from $23 million to $5.59 billion between 1990 and 2007. However, after 2007, there was a sharp decline in FDI inflows, indicating shifting investor sentiments toward other emerging economies. This pattern underscores the dynamic nature of global investment preferences and emphasizes the importance of continually adapting strategies to remain attractive to foreign investors. It is crucial for policymakers and economists to understand the factors influencing FDI inflows in developing economies.

Understanding the factors that affect foreign investment is important for economic growth. In Pakistan, the US-Afghan war, political instability, and macroeconomic conditions have had a significant impact. The war caused a lot of damage, including a decrease in investments and infrastructure. Political instability, characterized by corruption and interference, made investors lose confidence and discouraged both local and foreign investments. Research consistently shows that political instability is a major reason why FDI decreases worldwide. Additionally, macro-economic factors such as market size, exchange rates, trade openness, and tax policies also affect FDI. This study aims to examine the relationship between FDI and political instability, while also considering these macroeconomic variables.

Pakistan's strategic location in South Asia plays a crucial role in connecting the region's economies to landlocked Central Asian countries. While South Asia boasts a population of 1.2 billion and includes economies like Pakistan, Bangladesh, and India that outshine others in the region, Pakistan's exports to Asian economies, particularly Afghanistan, Bangladesh, India, and Sri Lanka, account for a significant portion of its total exports. Despite its competitive advantage in fruit exports like mangoes and dates, Pakistan's absence from regional trade agreements like SAFTA (South Asian Free Trade Area) and MFN (Most Favored Nations) hampers its growth potential. According to Pakistan Economic Survey (2022), with a growing GDP of $348.26 billion, a GDP per capita of $1505 USD, and a 6.5% annual GDP growth rate in 2021, Pakistan faces challenges such as a 6.3% unemployment rate and 9.5% inflation. While global FDI has surged significantly over the years, Pakistan's FDI inflow remained modest at 0.6% of GDP in 2021, calling for an investigation into the reasons behind this decline. Academic literature suggests that political, economic, and institutional factors, along with factors such as market size, capital returns, trade openness, and human capital, all contribute to the complex landscape of FDI inflows in developing nations.

Furthermore, Boateng et al. (2015) found that GDP, trade openness, and exchange rates positively affect FDI inflows, whereas interest rates, inflation, and unemployment act as deterrents. The relationship between political instability and FDI inflows has also been studied, consistently revealing a negative correlation (e.g., Hailu, 2010; Méon & Sekkat, 2012; Williams et al., 2017). Although these studies provide valuable insights into the interplay between political instability and overall investment, the results are occasionally inconclusive and mixed. Regarding Pakistan's economy, previous research has explored factors such as war, terrorism, economic growth, and political stability concerning FDI inflows. Nevertheless, there is a need to analyze the relationship between political instability and FDI inflows while considering macroeconomic variables. Therefore, this study investigates this relationship across 24 low-income economies, utilizing dynamic estimators proposed by Arellano and Bond (1991) and Arellano and Bover (1995).

This study aims to answer key questions regarding the impact of various macroeconomic factors on FDI inflows in developing economies. It specifically investigates the role of inflation rates, domestic savings, gross domestic production, exchange rates, and political instability in shaping FDI patterns.

While previous research has highlighted the importance of attracting FDI for economic growth, this study goes a step further by scrutinizing the effects of these macroeconomic variables, particularly political instability, which has been a recurring concern in academic discussions. Using GMM estimation and controlling for macroeconomic factors, the study explores the complex relationship between political instability and FDI in 24 low-income economies, employing the dynamic estimator. This research not only contributes to a deeper understanding of the adverse effects of political instability on aggregate investment but also offers practical insights for policymakers to formulate strategies aimed at attracting more FDI into countries like Pakistan, where the potential for economic growth is substantial but hindered by instability.

The rest of the paper is structured as follows: Section 2 presents a critical review of the existing literature on the topic in question, followed by Section 3, which provides the theoretical foundation, variables, data, and sources of the data. Section 4 provides an overview of the econometric methods applied to the data, and Sections 5 and 6 present all the findings from the econometric models, compare them, and discuss the results, respectively. The last section not only concludes this study but also provides important policy recommendations, highlights some limitations, and suggests future research directions.

2. Literature Review

The impact of political instability on aggregate investment behavior in developing economies remains a complex and multifaceted topic of study. Theoretical frameworks suggest that political instability, which encompasses factors such as civil unrest, regime changes, and corruption, can introduce uncertainty and risk for investors, potentially leading to reduced domestic and foreign investment. However, empirical evidence offers mixed findings, with some studies demonstrating a negative correlation between political instability and investment, while others find no significant relationship or even a positive one under certain conditions. Country-specific factors, the quality of institutions, and the time horizon can all influence the nature of this relationship. Understanding how political instability affects investment decisions is crucial for policymakers, as strategies for promoting investment often involve efforts to enhance political stability, strengthen institutions, and reduce corruption as mentioned in Table 1.

Table 1

An in-Depth Analysis of Recent Empirical Evidence on Political Instability and Investment Behavior in Developing Economies

Subsection	Research Findings/Arguments
Exploration of FDI	FDI is a desirable tool for both developing and developed countries, integrating world economies into the global market.
	There is a vast body of literature on the relationship between FDI and macroeconomic variables such as GDP, inflation, exchange rate, domestic savings, etc.
	This study focuses on political instability's impact on aggregate investment.
Theoretical Background	No consensus on the origin of FDI despite various theories.
	Competitive Advantage Theory discussed, highlighting the limitations of Ricardo's model.
	Theory of the Firm discussed, focusing on factors that influence investors' decisions to invest abroad.

	This study investigates the Theory of Industrial Organization.
Empirical Background	Various empirical studies on FDI and its relationship with different factors, including inflation, domestic savings, GDP, exchange rates, and political stability.
	Mixed results from different studies on the relationships between these factors and FDI
FDI and Inflation	Studies in UAE and Nigeria show mixed results on the relationship between inflation and FDI.
	Research in Malaysia suggests a positive relationship between inflation, economic growth, exchange rate, and FDI.
	Studies indicate a positive correlation between inflation and FDI.
FDI and Domestic Savings	Mixed opinions on the relationship between domestic savings and FDI, with some suggesting positive, negative, or no connection.
	Research in Bangladesh shows a bidirectional causal association between domestic savings and FDI.
FDI and Gross Domestic Product	Studies using various models indicate a long-term positive relationship between GDP and FDI in lower-middle-income economies.
	Research on BRICS nations suggests a positive association between FDI and economic growth but a negative impact of inflation and human capital on FDI.
FDI and Exchange Rates	Research in Bangladesh shows that an appreciation of the exchange rate decreases FDI inflow.
	Chinese currency appreciation negatively affects FDI outflow from China.
	Research in ASEAN countries suggests a positive relationship between exchange rates and FDI.
	Research in China shows a negative long-term relationship between exchange rates and FDI.
FDI and Political Stability	Research in G7 and GCC countries reveals that political instability negatively affects FDI in GCC countries, while no significant relationship is found in G7 countries.
	Studies on Central European, Baltic, and Balkan transition countries suggest that FDI flows increase with stabilization and reform.
	Studies show that political instability can have different effects on FDI and growth, depending on the level of unrest in a country
Research Gap	Previous studies have examined various determinants of FDI, but political instability's impact on aggregate investment remains less explored.

This study aims to analyze the impact of political instability on aggregate investment while including macroeconomic variables and controlling for country and time-specific effects.

There remains considerable ambiguity surrounding the origins and underlying principles of FDI, with multiple schools of thought offering diverse explanations for this phenomenon. Adam Smith's theory of absolute competitive advantage posits that trade between two nations occurs when one can produce and export goods more efficiently than its closest rival, but it fails to elucidate how trade can transpire when one nation isn't involved in manufacturing. David Ricardo, on the other hand, focused on international variable movements and assumed labor and capital were mobile only within national borders, yet his theory lacked the capacity to account for international capital flows within a framework of two nations, two goods, and perfect factor mobility. In contrast, Mundell's two-sector model proposed that capital flows could supplant global trade by equalizing factor prices across nations.

Mundell's model, however, was primarily centered on short-term foreign portfolio investments and didn't adequately address FDI's role in worldwide production. Kojima and Ozawa (1985) later adapted Mundell's framework to Japan, asserting that FDI occurs when a country faces a comparative disadvantage in producing a specific good, while global trade thrives on comparative advantage. In the macroeconomic perspective of FDI, it's viewed as an international capital flow between the country of origin and destination, impacting both nations' balance of payments. In contrast, the microeconomic approach delves into the motivations driving investors to allocate capital beyond their home borders. Shin's critique of existing FDI theories, supported by Salavrakos and Petrochilos (2003), categorizes macroeconomic FDI determinants such as host country market size (measured by GDP), market growth, factor prices, interest rates, profitability, inflation, and investor protection against tariffs.

Alshamsi et al. (2015) analyzed UAE data and found no significant link between inflation and FDI, but a positive impact of GDP on FDI. Tsaurai (2018) found mixed results in Southern Africa, with some models showing positive but insignificant effects of inflation on FDI, while others indicated a negative but insignificant relationship. In Malaysia, Ramlan et al. (2021) revealed positive associations between inflation, exchange rates, economic growth, and FDI. Fitri (2022) also supported a positive connection between inflation and FDI, in line with Shapiro (2022).

Research on the relationship between domestic savings and foreign investment has yielded varied results. Katircioglu and Naraliyeva (2006) found no significant connection between domestic savings and foreign investment. Chani et al. (2012) identified a bidirectional causal association between FDI and domestic savings (DS) in Bangladesh. In Kazakhstan, cointegration tests revealed a lasting connection between economic expansion, domestic savings, and FDI, with Granger causality results indicating one-way causality between DS and FDI and real GDP expansion. Bashier and Bataineh (2007) found that FDI in Jordan was more additive than subtractive to domestic savings. Taşpinar (2014) explored the equilibrium between income growth, FDI, and personal savings in Turkey, with FDI having a positive influence on real income. Khudari et al. (2023) examined the relationship between political instability, FDI, and various control variables in Turkey, revealing positive significant relations between domestic saving, domestic production, political stability, trade openness, and FDI, while Abu and Karim (2016) investigated domestic saving, economic growth, domestic investment, and FDI in 16 SSA countries, suggesting a positive significant relationship between domestic saving and FDI

Various studies have explored the relationship between economic factors and FDI. Dinh et al. (2019) found a long-term positive correlation between FDI and GDP, while Tsaurai (2022) highlighted the positive association of FDI inflows with economic growth. Tampakoudis et al. (2017) identified significant impacts of GDP, population, and trade openness on FDI in middle-income economies.

Abel et al. (2021) studied FDI determinants in Zimbabwe, including inflation and trade openness. Boğa (2019) analyzed FDI determinants in Sub-Saharan African economies, highlighting the importance of trade openness and GDP. Erfani and Berger (2020) found positive effects of GNP, GDP, and human capital on FDI in Asian countries. Sumanaratne (2020) explored the impact of various factors on FDI in Sri Lanka, noting negative effects of inflation and positive impacts of other variables. Barlevy (2004) discussed the potential negative impact of output volatility on investment. Shabbir and Muhammad (2019) analyzed the relationship between foreign portfolio investment and stock prices in Pakistan, finding significant results. Ćorić and Šimić (2021) explored the impact of economic downturns on aggregate investment. Given the mixed results from previous studies, further research aims to investigate the impact of GDP on FDI.

This research explores the impact of political instability on aggregate investment, filling a gap in existing literature that primarily focuses on the determinants of FDI. It delves into how political stability affects investment, taking into account macroeconomic variables. The study employs advanced econometric models, including GMM, with robust fixed and random effects models to control for country- and time-specific factors. Previous research has primarily focused on factors such as exchange rates and the impact of corruption on FDI, making this study's examination of the effect of political instability on aggregate investment a valuable addition to the literature.

3. Research Methodology

In contemporary research, the emphasis is on empirical methods to harness real-world data and advance business research. Qualitative and quantitative methods are the two fundamental approaches for collecting empirical data. Qualitative methods deal with non-numerical datasets, while quantitative methods involve numerical data and are used in this research due to the availability of economic indicators. In this study, a deductive approach is employed, aligning with the quantitative nature of the research and following a general-to-specific pattern.

3.1 Research Design

The research design encompasses the overall plan and procedures employed in the study. It is intricately linked to the specific challenges or research problems being addressed and draws from the researcher's own experience (Creswell, 2009). This research methodology offers insights into how the researcher selects appropriate methods and initiates the study, providing a comprehensive view of the research process, including the research approach and philosophy, data collection procedures, research techniques, and data analysis methods, all of which are crucial for ensuring consistency and reliability (Saunders et al., 2015). In this study, the research nature is quantitative, and its primary objective is to assess the impact of political instability on aggregate investment, while also considering various controlling variables.

3.2 Conceptual Framework

We choice of an exploratory study and emerges a phenomenon which has received limited prior attention and lacks comprehensive exploration. Punch (2013) suggests that an inductive research approach is suitable, especially in areas lacking well-established theories, as it equips researchers with the means to grasp various concepts and identify emerging patterns (Collis & Hussey, 2009). This inductive method proves highly beneficial within the context of exploratory studies, enabling researchers to generate a variety of assumptions that form the basis for their research designs (Bond et al., 2023).

Furthermore, when the goal is to establish relationships between variables, researchers employ an explanatory research approach, which accommodates the utilization of both inductive and deductive paradigms as mentioned in **Figure 1**. In contemporary research, there is a noticeable trend toward incorporating both inductive and deductive approaches, reflecting their growing popularity and widespread acceptance.

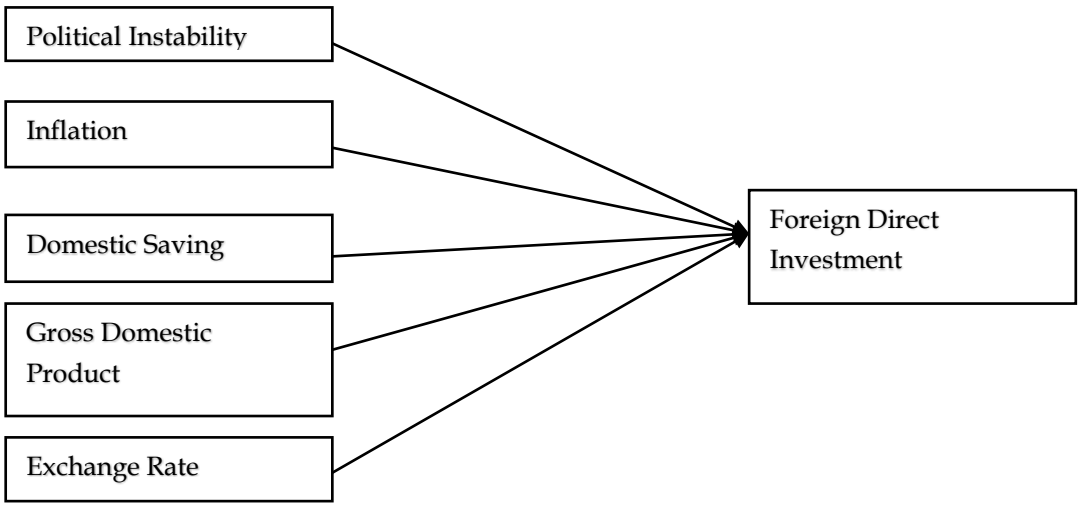

Figure 1

Proposed framework (Source: Adebayo et al. 2020)

3.3 Data Collection

The target population for the present study encompasses a geographically diverse scope, spanning across ten distinct regions and encompassing a total of 24 countries. Data for this extensive dataset has been meticulously collected from investing.com, covering a substantial time frame from the year 1980 through to 2021. It is noteworthy that the data for the year 2022 has been deliberately excluded from the study due to its unique circumstances associated with the impact of the Russian-Ukraine war. This decision to exclude the data for the year 2022 has been made by the researchers and is comprehensively documented in Table 2 for transparency and clarity within the study.

Table 2

Countries Included in Study

Regions	Countries name					Counts
South Eastern Asia	Philippines					1
Caribbean	Haiti					1
South America	Colombia					1
South Africa	South Africa					1
Western Asia	Israel	Turkey				2
Northern Africa	Egypt	Sudan				2
South-central Asia	Bangladesh	India	Pakistan			3
Middle Africa	Cameroon	C.A Republic	Chad	Guinea		4
Western Africa	Burkina Faso	Mali	Niger	Nigeria		4
Eastern Africa	Burundi	Ethiopia	Kenya	Mozambique	Zimbabwe	5
					Total	24

3.4 Data Collection

In our study, we primarily relied on secondary data for the purpose of empirical analysis. This secondary data was sourced from reputable platforms, namely investing.com and the World Bank, and covers the span from 1980 to 2021. To assess political instability across different countries, we developed an index that incorporates key dimensions including the rule of law, accountability, regulatory quality, absence of violence and terrorism, control of corruption, and government effectiveness. The relevant data for these dimensions was obtained from the World Bank, specifically the World Governance Indicators (WGI), for the time frame of 1980 through 2021, as detailed by Kaufmann and Kraay (2022). To analyze the collected dataset, we have adopted a deductive approach to assess the impact of political stability on aggregate investment, while also considering controlling variables such as inflation, GDP, exchange rate, and domestic savings. This approach aligns with our descriptive research purpose of characterizing variables and explaining various scenarios (Sekaran & Bougie, 2016).

3.5 Data Analysis Techniques

Panel data is described as a dataset which is utilized for observing behaviors of different entities over a time period. These entities or things could be individuals, companies, countries and states. Panel data permits researcher to manage those variables which cannot be observed or examined like cultural elements, differentiation in business policies and practices among various companies (Torres-Reyna, 2007). It is also for the variables which change across the time but it cannot change among different entities such as federal regulations, national policies and international contracts and agreements.

3.5.1 Pre-Estimation Tests

In our pre-estimation tests, we prioritize data normality, a fundamental assumption for regression analysis, by employing the CIPS (Cross-sectional Independence Panel Structure) and ADF (Augmented Dickey-Fuller) panel root tests to assess the stationarity and normality of our data. These tests help detect the presence of a unit-root in time-series data, indicating non-stationarity and a propensity for data to regress to a mean value over time, potentially obscuring trends and relationships. The CIPS test assesses the null hypothesis of normally distributed data versus stationary panel data, offering robustness in handling cross-sectional dependence. The ADF panel root test extends the ADF test to panel data and guides our decisions based on the tau value. We also consider the variance inflation factor (VIF) to evaluate multicollinearity among predictor variables, vital for stable coefficient estimates. When the VIF exceeds 5, it suggests problematic multicollinearity, prompting potential remedies like variable removal or transformation. We further assess multicollinearity through tolerance values, where values less than 0.10 and VIF values exceeding 10 indicate correlation between variables, while tolerance values over 0.10 and VIF values below 4 signify no significant multicollinearity concerns (Miles, 2014; O'Brien, 2007).

3.5.2 Regression Analysis Techniques

In our research, we employ the GMM methodology, originally introduced by Arellano and subsequently refined by Arellano and Bover in 1995, to analyze panel data characterized by a substantial number of individuals (N), a limited number of time periods (T), and potential endogeneity in explanatory variables. GMM involves differencing all explanatory variables, often referred to as difference GMM, with an underlying assumption that instrument variables are uncorrelated with fixed effects, enhancing the method's efficacy (Hansen, 2010). Our research places significant emphasis on addressing unobserved individual variation linked to explanatory factors and the potential endogeneity of variables. We rely on moment conditions within the GMM framework to estimate parameters, tackling various issues inherent to this category of data analysis (Hall, 2015). Notably, our study reflects the growing interest in exponential regression models and heeds the advice of Santos Silva and Tenreyro (2006) by directly estimating multiplicative models to

circumvent the limitations associated with log transformations. Additionally, in the context of panel data analysis, we explore the fixed-effect and random-effect models, acknowledging their utility for understanding and controlling for individual attributes and variations in effect sizes across different studies, respectively.

3.6.3 Post Estimation Test

In our research, we recognize the critical importance of model selection, and to address this, we rely on the Hausman test (Hausman & Taylor, 1981), which helps us decide whether to employ a fixed-effect or random-effect model. This pivotal test involves evaluating the null hypothesis that the ideal model is a random-effect model, as opposed to the alternative hypothesis, which suggests the use of a fixed-effect model (Baltagi & Bresson, 2012). Essentially, the Hausman test assesses whether the unique errors (u_i) in our study are correlated with the regressors, with the null hypothesis implying no such correlation. Additionally, in our analysis, we make extensive use of dynamic estimators developed by Arellano and Bond (1991) and Arellano and Bover (1995), which are commonly applied in situations involving large N, small T panels with limited time periods and a substantial number of individuals. These estimators are particularly suitable when dealing with explanatory variables that exhibit non-exact exogeneity, leading to correlations between current and past values, as well as in cases characterized by linear relationships, individual fixed effects, and autocorrelation and heteroskedasticity within the data. The Arellano-Bond approach, which transforms all explanatory variables through differencing and employs the GMM, is commonly referred to as "difference GMM" (Hansen, 1982).

4 Econometric Models

In our study, we employed a comprehensive approach by utilizing three distinct statistical models to investigate the intricate relationship between FDI and political instability, while also considering the influence of several key control variables. These models included the Ordinary Least Squares (OLS) regression, which is a fundamental method for estimating linear relationships; the Fixed-Random Effect model, an essential tool for panel data analysis that accommodates both fixed and random effects, allowing us to account for individual-level variations; and the GMM, a sophisticated technique that handles endogeneity and autocorrelation issues in the data.

Our analysis was not limited solely to the FDI-Political Instability relationship; we also factored in the potential impact of control variables, namely, Inflation (INF), Domestic Savings (DS), Gross Domestic Product (GDP), and Exchange Rate (ER). By incorporating these variables into our models, we aimed to gain a more comprehensive understanding of how various economic and political factors interplay and influence FDI. This multifaceted approach allowed us to delve deeper into the dynamics of FDI and its associations with Political Instability, providing valuable insights for both academic research and practical policymaking.

4.1 OLS Regression Model

In our research, we employed an OLS Regression Model to explore the intricate relationships between various economic and political factors. The model is expressed as:

$$LNFDI = \beta 0 + \beta 1 * LNINFi,j + \beta 2 * LNDSi,j + \beta 3 * LNGDPi,j + \beta 4 * LNERi,j + \beta 5 * LNPSi,j + \varepsilon i,j$$

In this model, LNFDI represents the natural logarithm of FDI, while LNINF, LNDS, LNGDP, LNER, and LNPS denote the natural logarithms of Inflation (INF), Domestic Savings (DS), Gross Domestic Product (GDP), Exchange Rate (ER), and Political Instability (PS), respectively. The coefficients β_0 through β_5 capture the relationships between these variables, and ε_i,j represents the error term accounting for unexplained variation in the model. This OLS Regression Model allows us to statistically analyze and quantify the impact of these factors on FDI, providing valuable insights into the determinants of FDI within our research context.

4.2 Fixed-Effect Regression Model

In our analysis, we extended our investigation by estimating a Fixed Effect Model, building upon the framework proposed by Koenker (2004). This model allows us to delve deeper into the determinants of FDI by considering a broader array of factors. The model is expressed as:

$$\mathrm{LNFDIij} = \beta 0 + \beta 1 * \mathrm{LNINFij} + \beta 2 * \mathrm{LNDSij} + \beta 3 * \mathrm{LNGDPij} + \beta 4 * \mathrm{LNERij} + \beta 5 * \mathrm{LNPSij} + \gamma 2 * \mathrm{D2i} + \cdots + \gamma 42 * \mathrm{D42i} + \varepsilon \mathrm{it}$$

In this extended model, LNFDI represents the natural logarithm of FDI, while LNINF, LNDS, LNGDP, LNER, and LNPS denote the natural logarithms of Inflation (INF), Domestic Savings (DS), Gross Domestic Product (GDP), Exchange Rate (ER), and Political Instability (PS), respectively. Here, ε i, j continues to represent the error term. However, we have introduced year dummies represented as γ_2 * D2_i through γ_42 * D42_i, capturing the influence of specific years on the FDI equation. These year dummies help account for any time-specific variations that may impact FDI levels. By incorporating these additional elements into our Fixed Effect Model, we aim to provide a more nuanced understanding of the determinants of Foreign Direct Investment, accounting for both individual country characteristics and time-specific effects over a range of years. This comprehensive approach allows us to draw more robust conclusions regarding the factors influencing FDI within our research context.

4.3 Random-Effect Regression Model

In our research, we have conducted an extensive examination of the Random Effect Model, building upon the framework proposed by Manski (1987), in order to gain deeper insights into the determinants of FDI within our research context. The model we have employed is articulated as follows:

$$LNFDIij = \beta 0 + \beta 1 * LNINFij + \beta 2 * LNDSij + \beta 3 * LNGDPij + \beta 4 * LNERij + \beta 5 * LNPSij + \gamma 2 * D2i + \cdots + \gamma 42 * D42i + \delta it + \varepsilon it$$

Within this extended model, LNFDI represents the natural logarithm of FDI, while LNINF, LNDS, LNGDP, LNER, and LNPS represent the natural logarithms of Inflation (INF), Domestic Savings (DS), Gross Domestic Product (GDP), Exchange Rate (ER), and Political Instability (PS), respectively. The error term ε_i,j continues to account for unexplained variation. Furthermore, we have introduced year dummies, represented as γ_2 * D2_i through γ_42 * D42_i, to capture the potential impact of specific years on FDI levels. Additionally, we incorporate δ_it to account for the variation between countries, acknowledging that each nation may exhibit unique characteristics affecting FDI. This comprehensive Random Effect Model enables us to explore the intricate interplay of both time-specific and country-specific factors influencing Foreign Direct Investment, ultimately offering a more thorough understanding of the dynamics shaping our research context.

4.4 Generalized Method of Moments (GMM) Model

In our research, we have adopted the GMM model as advocated by Arellano & Bond (1991), Arellano & Bover (1995), and Blundell & Bond (1998) to comprehensively investigate the determinants of FDI. The GMM model we employed is articulated as follows:

$$LNFDIij = \beta 1 * LNINFij + \beta 2 * LNDSij + \beta 3 * LNGDPij + \beta 4 * LNERij + \beta 5 * LNPSij + \gamma 2 * D2i + \cdots + \gamma 42 * D42i + \mu it + \varepsilon it$$

Within this robust model, LNFDI represents the natural logarithm of FDI, while LNINF, LNDS, LNGDP, LNER, and LNPS represent the natural logarithms of Inflation (INF), Domestic Savings (DS), Gross Domestic Product (GDP), Exchange Rate (ER), and Political Instability (PS), respectively. The error term ε_i,j continues to account for unexplained variation. Furthermore, we have incorporated year dummies, represented as γ_2 * D2_i through γ_42 * D42_i, to consider the potential impact of specific years on FDI levels. Additionally, we introduce μ_it to account for country-specific risk

factors, recognizing that each nation may exhibit unique characteristics influencing FDI. This comprehensive GMM model enables us to explore the intricate interplay of a wide array of factors, providing a deeper understanding of the determinants of FDI within our research context.

5 Results

We present the empirical findings of our analysis, accompanied by prerequisite tests of unit-root, multicollinearity, serial correlation, heteroskedasticity, and homoskedasticity to ensure compliance with the fundamental assumptions of data normality, as proposed by Gujarati (2009). Furthermore, we have employed four regression models, namely OLS, Fixed-Random, and GMM, to examine the impact of political stability on aggregate investment. Our analysis incorporates four essential control variables, including inflation (INF), domestic saving (DS), gross domestic product (GDP), and exchange rates (ER). To account for country-specific effects, we have introduced country dummies, and our study sample encompasses 24 countries across seven regions.

5.1 Descriptive Statistics

In the Descriptive Statistics, we offer a concise overview of key statistical measures for the variables in our analysis. This includes measures such as mean, median, standard deviation, and range, providing a snapshot of the central tendencies and variations within our dataset. These statistics serve as a foundational understanding of the data before delving into regression analysis, helping us identify trends and characteristics that influence our research findings.

Table 3

Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
LNFDI	1008	1.74E+09	4.39E+09	0	5.32E+10
LNINF	1008	2.110386	1.112969	-3.2068	6.322927
LNDS	1008	2.762438	0.633383	-0.48026	4.52E+00
LNGDP	1008	23.83562	1.922935	20.27357	2.88E+01
LNER	1008	4.270776	2.396559	-5.9332	9.186355
LNPS	1008	-0.635329	1.177515	-6.20932	0.412878

In Table 3, we present the results of descriptive statistics, including mean, standard deviation, minimum, and maximum values. These statistics allow us to analyze trends, volatility, and the range of the variables of interest. To ensure unbiased trends, we have transformed the data by taking the natural log of the series, following the approach suggested by Evans (1939). Our study aims to investigate the impact of political stability on a country's foreign direct investment, with inflation, domestic savings, gross domestic product, and exchange rates as control variables. Our dataset spans forty-one years, from 1980 to 2021, with a total of 1008 observations. Notably, the table reflects a high value for FDI, supporting the perfect market hypothesis proposed by Malkiel (1989), as investment behavior is influenced by country-specific political stability (Alshubiri, 2022). Inflation, GDP, and exchange rates exhibit low volatility, while domestic savings and the index of political stability demonstrate relatively stable behavior.

5.2 Econometrics Tests

In this study, we conducted regression analysis employing four distinct models: Ordinary Least Squares (OLS), Fixed and Random Effects, and the GMM. To meet the essential prerequisites of data normality, we conducted various assumption tests. Firstly, in line with the assumption of data

normality, we subjected the panel data to a Unit Root Test using the Augmented Dickey-Fuller (ADF) test, which confirmed the stationarity of the data. Secondly, we assessed the presence of multicollinearity among the independent variables, ensuring their independence for accurate model estimation. Thirdly, the Durbin-Watson test was employed to investigate potential autocorrelation trends within the data, verifying the assumption of independence among observations. Lastly, we conducted tests for both heteroskedasticity and homoskedasticity to evaluate the variability of error terms and their compatibility with the assumptions inherent in our regression models. These rigorous assessments of assumptions underpinned the robustness and validity of our subsequent regression analyses, enabling meaningful conclusions regarding the impact of political stability on foreign direct investment.

In Table 4, we present the results of IPS, Fisher type, and CIPS tests conducted to assess data stationarity, particularly addressing the unit root problem in panel data. The null hypothesis for these tests posits the existence of a unit root in the panel data, but we reject this null hypothesis in all three cases, affirming that our panel data does not exhibit unit root issues. This conclusion is supported by the probability values, all of which are less than 0.05, allowing us to accept the alternate hypothesis indicating that at least one panel is stationary. Furthermore, we find that all variables are stationary at the level, enabling us to proceed with GMM, GLS, and OLS models for our regression analysis.

Table 4

Unit Root Test

Variables	**Im-Pesaran-Shin**	**Fisher-type**	**CIPS**
	I (0)	I (0)	I (0)
FDI	-2.5695*	190.2940*	-4.975*
INF	-12.0083*	280.1448*	-5.290*
DS	-10.5490*	244.4070*	-4.450*
GDP	-4.7173*	107.7387*	-4.530*
ER	-9.7295*	229.6378*	-4.884*
PS	-8.0736*	184.9336*	-4.859*

"* Represent 99% CI"

Our applied econometric tests IPS, play a vital role in determining whether data is stationary or non-stationary. IPS, an ADF-based unit root test, is employed to address cross-sectional dependence in panel data and minimize result bias. The normality of residuals generated after employing fixed and random effect regression models is also evaluated through the IPS test. If the residuals exhibit non-stationarity or non-normality in their frequency distribution, we reject the null hypothesis, signifying the presence of unit roots in the panels. As per Gujarati (2009), a negative tau value in the t-test and the time series lying within the critical region support the acceptance of the alternate hypothesis, indicating that at least one panel is stationary. Our comprehensive assessment of data stationarity through IPS, ADF, CIPS, and CADF tests strengthens the robustness of our results while confirming the absence of both residuals and cross-sectional collinearity among the study variables. Moreover, the selection of regression models, whether GLS, FE, or RE, is contingent upon the presence of heteroskedasticity and the distribution of data, with GLS, GMM, and simple OLS models being suitable for normally distributed data.

4.2.2 Variance Inflation Factor and Autocorrelation

In our multicollinearity test, we aimed to assess the correlation between independent variables within the regression model. As a common rule of thumb, multicollinearity is identified through tolerance

values lower than 0.10 and VIF values higher than 10, indicating potential correlation among independent variables. Conversely, tolerance values greater than 0.10 and VIF values below 10 suggest the absence of such correlation. The VIF reveals the increase in the variance of the regression model while keeping the R2 at zero. Following O'Brien's guideline (2007) that a VIF value below four indicates no multicollinearity issue among variables, our findings, presented in Table 5**,** confirm the absence of multicollinearity problems within the independent variables.

Table 5

Multi-collinearity and Serial Correlation

Multicollinearity		
Variable	**VIF**	**1/VIF**
LNGDP	3.35	0.298177
LNDS	2.14	0.466682
LNER	2.96	0.337611
LNPS	1.13	0.887665
LNINF	1.15	0.87041
Mean VIF	2,15	-
Autocorrelation		
F (1, 23)	= 3.391	
Prob > F	= 0.0385	

5.3 Correlation Analysis

we conducted a serial correlation test to examine time persistence within our dataset, spanning from 1980 to 2021 for each variable. The term "serial correlation" was introduced by Yule in 1926, emphasizing the significance of studying time series data for time persistence. Our results indicate no serial correlation issue, supported by the significant F-statistics at a 95% confidence level (Dalla, Giraitis, & Phillips, 2022). This comprehensive assessment of multicollinearity and serial correlation ensures the robustness and validity of our regression analyses, enhancing the credibility of our findings regarding the impact of political stability on foreign direct investment.

Our analysis reveals a negative correlation of -0.2755, significant at the 99% confidence level, between FDI and political instability, implying that political instability tends to hinder foreign investment. This aligns with the theoretical perspective on investment behavior, where domestic savings and production also exhibit negative relationships with foreign investment. Jorgenson (1967) highlights the link between investment behavior and the interest rate, as higher rates offered by financial institutions lead investors to favor national institutions. Furthermore, our results indicate negative, albeit insignificant, relationships between inflation, domestic savings, and GDP with foreign investment. Exchange rates also exhibit a negative association with political stability, suggesting that countries experiencing instability tend to have higher exchange rates, resulting in increased costs for imports.

Table 6

Correlation Analysis

Variables	LNFDI	LNINF	LNDS	LNGDP	LNER	LNPS
LNFDI	1.0000					
LNINF	0.0692	1.0000				
	0.0360					
LNDS	-0.1683	-0.0230	1.0000			
	0.0000	0.4896				
LNGDP	-0.4999	-0.0045	0.5519	1.0000		
	0.0000	0.8925	0.0000			
LNER	0.0846	-0.2427	-0.3429	-0.4326	1.0000	
	0.0077	0.0000	0.0000	0.0000		
LNPS	-0.2752	0.1067	0.0971	0.4441	-0.1630	1.0000
	0.0000	0.0012	0.0022	0.0000	0.0000	

Our findings reveal no autocorrelation, as all independent variables exhibit values below 0.50, indicating the appropriate inclusion of these variables in the economic model. Moreover, the correlation results indicate no autocorrelation in the explanatory variables, as both the dependent variable (DV) and independent variables (IVs) have values less than 0.05. This fulfills the second assumption of regression analysis, as proposed by Gujarati (2009), which suggests that explanatory variables should not correlate with previous or other current values of variables. Additionally, the Pearson correlation highlights both positive and negative associations among independent variables, such as inflation, domestic savings, GDP, exchange rates, and political instability.

5.4 Regression Analysis

The regression analysis presented in Table 7 demonstrates the statistical significance of the model, with a p-value of the F-statistics below 0.05. In this study, we have leveraged a dataset comprising a total of 1008 observations to assess the impact of political instability on aggregate investment. The sums of squares for the model and residuals both exhibit positive values, indicating the fitness of the model. Furthermore, all variables are significant at the 99% confidence level.

The results of the regression reveal several key findings. Firstly, inflation exhibits a negative and significant impact on FDI, suggesting that heightened demand for goods prompts increased business investment. Additionally, as demand for commodities rises, commodity prices increase, as supported by Shapiro (2022). Secondly, domestic savings have a negative and insignificant impact on FDI, implying that individuals tend to invest their surplus funds in domestic production to generate returns, aligning with the liquidity preference (speculative motive) theory of interest (Tsujimura & Tsujimura, 2022). Thirdly, political instability negatively influences foreign direct investment, with the coefficient indicating that a one-point increase in stability results in a 5.3-fold decrease in FDI. Conversely, FDI and GDP exhibit a positive relationship, supported by Dinh et al. (2019). These findings corroborate our study's hypotheses, as evidenced by previous research (e.g., Alshubiri, 2022; Shapiro, 2022; Soomro, Kumar, & Kumari, 2022; Dinh et al., 2019).

Table 7

OLS Regression

Number of Observations =		**1008**		**R-Squared =**	**0.2866**
F (5.873)= 70.13		Prob >F 0.0000		Adj R Squared =	0.2825
Source	SS	Df	MS	Root MSE =	4.0e+09
Model	5.5358e+21	5	1.1072e+2		
Residual	1.3782e+22	873	2.2002e+19		
LNFDI	Coefficient	Std. Error	T	[95% Conf. Interval]	
LNINF	-4.53E+08	2.79E+08	-1.62*	-1.01E+09	9.98E+07
LNDS	-6.14E+08	4.78E+08	-1.28	-1.56E+09	3.33E+08
LNGDP	1.35E+09	2.27E+08	5.93***	8.97E+08	1.79E+09
LNER	5.75E+08	1.97E+08	2.92***	1.85E+08	9.65E+08
LNPS	-5.30E+08	2.13E+08	-2.49***	-9.51E+08	-1.09E+08
_cons	-3.08E+10	5.81E+09	-5.3***	-4.23E+10	-1.93E+10

Coefficients marked with *, **and ***are significant at the10%, 5%, and 1% level, respectively.

5.4.1 Generalized Method of Moments

In our study, we followed the methodology advocated by Blundell and Bond (1998) and employed the GMM to estimate our panel regression model. We treated all the explanatory variables—INF, DS, GDP, and ER—as endogenous. To enhance the rigor of our analysis, we introduced year and country dummies, enabling us to effectively manage a dataset spanning 40 years and encompassing 24 different countries. These time dummies played a crucial role in controlling for cross-country correlation. Drawing from Roodman's guidance (2009), we strategically collapsed instruments to reduce their number relative to the number of panels (countries). Additionally, we adjusted standard errors to account for Heteroskedasticity and changing patterns of autocorrelation. This comprehensive approach, which we employed, not only controlled for endogeneity but also ensured the robustness of our estimations.

In Table 8, we observe significant findings. First, there's a negative link between inflation and FDI, suggesting that lower inflation leads to reduced demand and, consequently, less FDI. Domestic savings don't appear to significantly affect FDI. Exchange rates have a negative impact on FDI, while GDP growth has a positive one, indicating that countries with growing economies tend to attract more foreign investment. These results support our study's hypotheses. Notably, the political stability index shows a negative and statistically significant relationship, highlighting that developed, politically stable countries tend to attract more FDI.

Our analysis reveals notable distinctions between advanced and developing nations regarding FDI and political stability. Advanced countries tend to benefit more from political stability in attracting FDI, largely due to lower information and transaction costs, which attract international investors and fuel economic growth. Democracy in these nations further encourages capital investment. Institutional factors like government effectiveness, regulatory quality, and rule of law exhibit significant positive associations with FDI. Notably, political instability is more pronounced in developing nations. In developed countries, anti-corruption legislation and the effectiveness of government play substantial roles in shaping investor sentiments and investment decisions. These findings underscore the significance of political stability and institutional quality in FDI inflows,

especially in developed economies where they exert a more pronounced influence, fostering an environment of trust and investment. Developed countries' market-friendly laws and strong protection of individual rights and property create an attractive landscape for both domestic and international investors, ultimately contributing to long-term, sustainable investments. Moreover, democracy, citizen rights, freedom of speech, and independent media play pivotal roles in attracting FDI in affluent nations, whereas their impact is less significant in poorer countries.

Table 8

GMM Regression

Group Variable	**ID**		**Number of observations**	**880**	
Time Variable	Year		Number of groups	24	
Number of Instruments	19		Min	23	
Wald Chi (4)	19.40		Average	36.63	
Prob Chi2	0.002		Max	42	
LNFDI	Coefficient	Std. Error	T	[95% Conf. Intervel]	
LNINF	-2.87E+08	1.63E+08	-1.76*	-6.07E+08	3.27E+07
LNDS	-7.51E+08	4.22E+08	-1.78*	-1.58E+09	7.68E+07
LNGDP	1.55E+09	5.61E+08	2.77***	4.54E+08	2.65E+09
LNER	-1.80E+08	1.95E+08	-0.93*	-2.02E+08	5.62E+08
LNPS	-1.55E+08	3.48E+08	-0.45**	-5.27E+08	8.38E+08
_cons	-3.34E+10	1.29E+10	-2.59***	-5.87E+10	-8.12E+09

Coefficients marked with *, **and ***are significant at the1%, 5%, and 10% level, respectively.

5.4.2 Fixed-Effect Model

We delve into an investigation conducted by Shapiro (2022), which explored the intriguing interplay between supply, demand, and inflation during the COVID-19 pandemic. Shapiro posited that prior to the pandemic, inflation exhibited a downward trajectory in response to dwindling demand, thereby establishing a negative relationship between inflation and FDI. This assertion aligns with the findings of Fitri (2022), who similarly advocated for a negative association between inflation and FDI rooted in the dynamics of demand.

Our study, employing controls for both time and country-specific coefficients, substantiates these claims. The results, as presented in Table 9, underscore the statistical significance of our model, with an F-statistics p-value less than 0.05. Furthermore, our analysis reveals that domestic savings yield a negative, albeit statistically insignificant, impact on FDI. This suggests that individuals tend to channel surplus funds into investments, aiming to secure returns, in line with the Loanable Funds Theory of Interest (Tsujimura & Tsujimura, 2022). Notably, our investigation highlights a negative correlation between political stability and foreign direct investment, indicating that a one-unit increase in stability corresponds to a 7.53-point increase in FDI. This result substantiates our fourth hypothesis, emphasizing the adverse impact of political instability on FDI, in harmony with the research of Kharabsheh and Gharaibeh (2022).

Table 9

Fixed-Effect Regression

Fixed-Effect within Regression		**Number of Observations**			**879**
Group Variable	ID	Number of Groups			24
R. Sq within	0.2032				
Between	0.4841				
Overall	0.2512				
		F (4.851)			Prob>F 0.0000
LNFDI	Coefficient	Std. Error	T	[95% Conf. Intervel]	
LNINF	-5.39E+08	3.12E+08	-1.73*	-1.16E+09	7.88E+07
LNDS	-1.47E+08	4.44E+08	-0.33	-1.03E+09	7.33E+08
LNGDP	1.88E+09	4.56E+08	4.13***	9.81E+08	2.79E+09
LNER	-4.12E+08	3.75E+08	-1.1**	-1.15E+09	3.32E+08
LNPS	-7.53E+07	4.06E+08	-0.19**	-8.78E+08	7.28E+08
_cons	-4.17E+10	1.07E+10	-3.89***	-6.29E+10	-2.05E+10
Year dummies	Yes				

Coefficients marked with *, **and ***are significant at the10%, 5%, and 1% level, respectively.

5.4.3 Random-Effect Model

Random affect model analyzes the effect of IV on DV by taking random values from the data set as mentioned in Table 10. In this study we analyzed the impact of political stability on the aggregate investment and except inflation all variables are statistically significant at 90, 95 and 99% confidence level. In this study we have utilized 1008 total observations to analyze the impact of political instability on aggregate investment. R2 is 0.42 between the values which show model is explaining 42% effect of IV on the DV while the remaining linked to the residual and error term of econometric model.

Results indicate that inflation has negative significant impact on the FDI meaning that if demands of goods are high then business needs more investment and as demand of commodities increase price of commodities are ultimately increases as supported by (Shapiro, 2022). Further, domestic savings have negative insignificant impact on the FDI while GDP has positive impact on FDI meaning that high production is linked with the high demand and ultimately attract more foreign investment. Moreover, exchange rates are negatively linked with the FDI meaning that devaluation of money will hit FDI or appreciation of exchange rates of a country decreases the FDI inflow and it is advocacy hypothesis 2 as supported by Qamruzzaman et al. (2019). Moreover, political instability has negative impact on the FDI as coefficient show on point increase in instability then there will be a decrease of 7.7 units in FDI. Our results are in line with the study hypothesis of the study.

Table 10

Random-Effect Regression

Random effect GLS Regression		**Number of Observations**		**1008**	
Group Variable	ID	Number of Groups		24	
R. Sq within	02023				
Between	0.4755	Wald chi		231.04	
Overall	0.2700	Prob chi2		0.0000	
		F (23.851)		Prob>F 0.0000	
LNFDI	Coefficient	Std. Error	T	[95% Conf. Intervel)	
LNINF	-5.14E+08	3.00E+08	-1.71*	-1.10E+09	7.40E+07
LNDS	-1.61E+08	4.41E+08	-0.37	-1.03E+09	7.03E+08
LNGDP	1.91E+09	4.05E+08	4.71***	1.11E+09	2.70E+09
LNER	-3.44E+08	3.40E+08	-1.01**	-1.01E+09	3.22E+08
LNPS	-7.71E+07	3.79E+08	-0.2*	-8.20E+08	6.66E+08
_cons	-4.01E+10	9.66E+09	-4.15***	-5.91E+10	-2.12E+1

Coefficients marked with *, **and ***are significant at the10%, 5%, and 1% level, respectively.

5.5 Post Estimation Tests

5.5.1 Hausman-Taylor Test: Determining the Optimal Model

Selecting the appropriate model is a critical step in any econometric analysis. To address this crucial decision of choosing between a fixed-effect or random-effect model, we employ the Hausman-Taylor test. The null hypothesis posits that the ideal model is the random-effect model, while the alternative hypothesis suggests using the fixed-effect model (Baltagi & Bresson, 2012). In our study, our findings reveal a p-value of less than 0.50. This outcome leads us to conclude that the fixed-effect model is the more suitable choice for our regression analysis. This selection ensures that we account for individual-specific effects, making our analysis more robust and accurate.

Table 11

Hausman-Taylor Test: Determining the Optimal Model

Ver#	**- Coefficients -**			
	(b)	(B)	(b-B)	Sqrt (diag(V_b-V_B))
	Fixed	Random	Difference	S.E
LNINF	-5.39E+08	-5.14E+08	-2.44E+07	8.48E+07
LNDS	-1.47E+08	-1.61E+08	1.43E+07	5.55E+07
LNGDP	1.88E+09	1.91E+09	-2.39E+07	2.10E+08
LNER	-4.12E+08	-3.44E+08	-6.78E+07	1.60E+08
LNPS	-7.53E+07	-7.71E+07	1777084	1.44E+08

b = consistent under Ho and Ha; obtained from xtreg

B = inconsistent under Ha, efficient under Ho; obtained from xtreg	
Test: Ho:	difference in coefficients not systematic
chi2 (3)	= (b-B)'[(V_b-V_B) ^(-1)](b-B)
rob>ch2	= 9.56 = 0.0586

5.5.2 Arellano-Bond and Sargan Tests

In our analysis, we leverage the widely recognized Arellano and Bond (1991) and Arellano and Bover (1995) dynamic estimators, which have found extensive application in academic research. These estimators are particularly well-suited for scenarios characterized by several key attributes: i) large N and small T panels, featuring limited time periods and numerous individuals; ii) explanatory variables that are not entirely exogenous, displaying correlations between current and past values; iii) relationships that are linear in nature; iv) the presence of individual fixed effects; and v) the existence of autocorrelation and heteroskedasticity within the data (Hansen, 1982). The Arellano-Bond method transforms all explanatory variables through differencing and employs the GMM framework. Consequently, it is commonly referred to as the difference GMM. To validate the suitability of our model, we conduct Arellano-Bond tests and Sargan tests, the results of which are presented in Table 12.

Table 12

Arellano-Bond test and Sargan Tests

Arellano-Bond Test	**Values**	**Prob value**
Arellano-Bond test for AR (1) in first differences: z = -1.26	Pr > z	0.019
Arellano-Bond test for AR (2) in first differences: z = -2.04	Pr > z	0.192
Sargan		
Sargan test of overid. restrictions: chi2(42) =1260.25	Pr>chi2	0.000
Hansen test of overid. restrictions: chi2(42) = 1.5e+05	Pr>chi2	0.999

Moreover, it is important to note that Arellano-Bond estimators operate under an additional assumption of first differences, positing that instrumental variables are effectively uncorrelated with fixed effects, thereby enhancing their efficacy. According to the existing literature, the Arellano-Bond Autoregressive (AR) component should demonstrate significance at either the first or second order of difference. Our findings reveal significance at the first difference level, underscoring the robustness and significance of our economic model. Additionally, the results of the Sargan test exhibit significance at the first level, further affirming the importance of the imposed restrictions.

In Table 13, we compare the results of various dynamic regression models, including OLS, fixed-effect, random-effect, and GMM. Our findings consistently show that both inflation and political instability are negatively associated with FDI. This suggests that political uncertainty within a country can significantly affect investor sentiments, discouraging them from making investments in such regions. Additionally, hyperinflation in a country can lead to a decrease in the purchasing power of its citizens, causing a downward shift in the demand curve, reduced production, and ultimately a decrease in FDI.

Table 13

Comparison of Models 1-4

Ver#	OLS	Fixed	Random	GMM	Hypothesis
LNINF	-4.53E+08	-5.39E+08	-5.14E+08	-2.87E+08	Accepted
LNDS	-6.14E+08	-1.47E+08	-1.61E+08	-7.51E+08	Rejected
LNGDP	1.35E+09	1.88E+09	1.91E+09	1.55E+09	Accepted
LNER	5.75E+08	-4.12E+08	-3.44E+08	-1.80E+08	Accepted
LNPS	-5.30E+08	-7.53E+07	-7.71E+07	-1.55E+08	Accepted

Furthermore, we must reject the hypothesis related to domestic savings, as our study results indicate an insignificant impact of domestic savings on FDI. This lack of impact could be attributed to either domestic investment or political instability. Importantly, these findings align with existing literature, as exemplified by studies conducted by Qamruzzaman et al. (2019), Ramlan et al. (2021), and Sumanaratne (2020).

6 Discussion

FDI has been discussed in literature as an oxygen to the economic development of any country as it fills the gap of domestic savings and investment, boost managerial skills, reconfigure the method of job creation and technology (Talat & Zeshan, 2013; Wafure et al., 2010). Therefore, both developed and developing economies contest to attract foreign investment for regulating and fostering corporate sectors. Countries formulate, amend and implement several policies and provide signals to the overseas investors. Recent years have witnessed increase in FDI inflows to host countries due to their market, policies, rules and regulations, openness etc (Cheng et al., 2017). Specifically, share of FDI inflow increased from $34.66 billion to $764.67 billion in the world during 1990-2015 (Bano et al., 2019).

Pakistan due to its geostrategic location has attracted overseas investors in early 2000's but the trends of FDI inflows turns declining after 2007 as World Bank statistics revealed that Pakistan attracts foreign investors as the graph of FDI inflow increased from 23 million dollars to 5.59 billion dollars in 1990-2007. The negative trends of FDI inflows are disturbing and without having appropriate knowledge of decline, Pakistan is unable to formulate policies and strategies for fostering FDI inflows (Talat & Zeshan, 2013). Therefore, this study has investigated the relationship between political instability and investment of 24 low-income economies with the help of GMM estimations with Arellano and Bond (1991), as well as Arellano and Bover (1995) dynamic estimator.

Deductive approach is utilized in order to measure the political instability impact on the aggregate investment with the controlling variables of inflation, GDP, exchange rate, and domestic savings. Target population of the current study includes ten regions and 24 countries, and quantitative data is conducted from investing.com for the 24 countries from 1980–2021-year 2022 excluded from the study as Russian-Ukraine war affect confined by the researchers. Further, author utilized three models i.e., ordinary least square regression, Fixed-Random effect model, and Generalize model of momentum to investigate the relationship between FDI and Political instability with controlling macro-economic variables such as inflation, domestic savings, Gross Domestic Product, Exchange Rate, and Political Instability. According to Gujarati (2009), several assumptions should be met before analyzing regression equation i.e., data normality, auto correlation, multi co-linearity, serial correlation and hetro-homoskedasticity. To analyze normality, we employ augmented Dickey Fuller test while variance inflation factor test used to measure multicollinearity etc. Finally, OLS, Fixed-Random effect and GMM tests apply to analyze relationship between political instability and FDI inflow. Further, Hausman Test employed to choose fixed or random model whereas Arellano and Bond (1991) as well

as Arellano and Bover (1995) dynamic estimator test utilized to examine the significance of GMM model.

Descriptive statistics such as mean, standard deviation, minimum and maximum values are evaluated to examine trends, volatility and range of the variable of interests. Natural log has been taken to overcome the repetition of the number e (exponent) as proposed by the (see for instance, Evans, 1939). This natural log converts time-series and cross-sectional data into unbiased trend. Descriptive statistics show that the FDI is high, supporting the perfect market hypothesis. Investors' investment behavior is influenced by their limited information about the market and the political stability of the country (Alshubiri, 2022). Inflation, GDP and exchange rates have low volatility and domestic savings and index of political stability show least volatile behavior. It is observed that all variables are stationary at level and 1st difference. Particularly, log values of FDI indicate -1.8239 tau values and it is significant at 95% confidence level. Similarly, political instability measure is significant at 95% confidence level while macro-economic variables are significant at 99% confidence level. Moreover, mean values of independent variables in VIF test are less than 4, while tolerance factor is more than 0.10 therefore our results show no multicollinearity issue.

OLS regression results revealed that inflation has negative significant impact on the FDI meaning that if demands of goods are high then business needs more investment and as demand of commodities increase price of commodities are ultimately increases as supported by (Shapiro, 2022). Further, domestic savings have negative insignificant impact on the FDI indicating if people have spare money than they will invest in domestic production to gain return on their investment as proposed by the liquidity preference (speculative motive) theory of interest (Tsujimura & Tsujimura, 2022). Moreover, political instability has negative impact on the FDI as coefficient show on point increase in stability will lead to decrease FDI by 5.3 times. Meanwhile, FDI and GDP have positive relationship the rationale is endorsed by the (Dinh, et al., 2019). Hausman test indicates that random effect model is more appropriate in the given situation as value of chi^2 test is greater than 0.05. Particularly, RE results indicate that inflation and domestic savings have negative significant impact on the FDI while GDP has positive relation with the FDI inflows. Finally, political instability has a negative impact on FDI, as the coefficient shows that a one-point increase in instability results in a decrease of 7.7 units in FDI.

As Roodman (2009) indicates, we collapsed instruments to reduce the number of instruments compared to the number of panels (i.e., countries). Furthermore, standard errors were adjusted to account for heteroskedasticity and fluctuating trends of autocorrelation in the GMM model. The GMM estimation results are quite similar to the previous models, i.e., inflation has a significant negative impact on FDI, meaning that if inflation falls, there will be a decrease in demand, resulting in a negative relationship between inflation and foreign direct investment. Additionally, domestic saving has an insignificant impact on FDI. The exchange rate has a negative impact, while GDP has a positive impact on FDI, meaning that the growth of GDP attracts more investors. Moreover, political instability has a negative impact on FDI, as the coefficient shows that a one-point increase in instability will lead to a decrease of 1.55 points in FDI.

7 Conclusions

The study examined the relationship between political instability and investment in 24 low-income economies using GMM estimations. The findings indicate that factors such as inflation, GDP, and exchange rates exhibit low volatility, while domestic savings and the index of political instability demonstrate relatively stable behavior. Furthermore, all variables are statistically significant, and the data reveals no issues of autocorrelation or multicollinearity. Based on the regression results, it can be concluded that political instability, inflation, domestic savings, and exchange rates have a negative and significant impact on FDI, whereas GDP has a positive effect on FDI inflows. Additionally, the study's findings align with the literature on the Arellano-Bond test, emphasizing the significance of the GMM model. Moreover, the results of the Sargan test underscore the importance of the imposed

restrictions in the analysis. These findings contribute to our understanding of the complex relationship between political stability and investment in low-income economies, shedding light on the factors that influence FDI trends in these regions.

7.1 Policy Implications

Developing countries like Bangladesh, Pakistan, Turkey, and India have substantial potential to close the gap between domestic savings and investment through FDI inflows. However, they are currently grappling with a decline in overseas investments due to misinterpretations of factors such as ease of doing business, globalization, and foreign investment policies. Political interventions, corruption, weak rule of law, and accountability issues further deter investor sentiment. To address these challenges, these nations should consider implementing a comprehensive MSJELT policy framework. MS stands for managing the money supply, J signifies the need for judicial reforms to enhance the Rule of Law, E emphasizes the importance of improving the Ease of Doing Business, and LT underscores the necessity of a low-tax policy to attract corporate sector investment. Central banks can manage the money supply by adjusting interest rates, focusing on controlling inflation. Moreover, fostering an environment of ease of doing business through favorable policies can attract foreign investments, much like what China and India have achieved. Simultaneously, implementing judicial reforms can help address issues like corruption and weak governance, improving investor confidence. Finally, adopting a low-tax policy can stimulate economic growth and attract foreign investments, as seen in countries like Malaysia and Dubai.

7.2 Limitations

While this study employed GMM estimation to investigate the relationship between the dependent variable (DV) and independent variables (IVs), it is important to acknowledge that alternative models could provide more specific insights into these variables. Additionally, the study's sample period spans from 1980 to 2021, encompassing significant global events such as the 2007-08 financial crisis and the COVID-19 pandemic in 2019. These crises had uncontrollable and profound effects on countries, which may have influenced the study's findings and limited the ability to isolate crisis effects.

7.3 Future Research Directions

Future research in this area could explore Granger Causality and employ other models to investigate the impact of political instability on FDI inflows more comprehensively. Moreover, there is a compelling need to investigate the impact of political instability on FDI inflows within different sub-samples of the world economy, taking into account the unique dynamics of crises like the 2007-08 financial crisis and the COVID-19 pandemic that occurred within the study's timeframe: 1980-2021. This would help us better understand how political instability affects foreign direct investment in different economic situations.

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