

## **Navigating Country Risk: Impacts On Foreign Direct And Portfolio Investment In Egypt**

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**Abstract** This study examines the impact of country risk on Foreign Direct Investment (FDI) and Foreign Portfolio Investment (FPI) inflows into Egypt from 1998 to 2022. Country risk is analyzed through its economic, financial, and political dimensions. Employing the Autoregressive Distributed Lag (ARDL) model, the findings reveal that economic and financial risks significantly reduce both FDI and FPI inflows, with delayed negative effects. Political risk exhibits a dual impact: attracting speculative FPI inflows in the short term but discouraging long-term investment due to persistent instability. By simultaneously evaluating FDI and FPI, this study addresses key gaps in the literature, offering a comprehensive perspective on how distinct risk factors influence investment flows. The results underscore the importance of fiscal reforms, enhanced governance, and robust financial strategies to stabilize macroeconomic conditions, mitigate political uncertainty, and manage external debt. These recommendations provide actionable insights for fostering a resilient and competitive investment environment in Egypt and similar emerging markets.

**Keywords:** Country Risk, Foreign Direct Investment (FDI), Foreign Portfolio Investment (FPI), Economic Risk, Financial Risk, Political Risk, Egypt, Emerging Markets, ARDL Model.

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## Introduction

Foreign Direct Investment (FDI) and Foreign Portfolio Investment (FPI) are crucial drivers of economic growth in emerging markets, providing much-needed capital, technological transfer, and market liquidity. However, these investments are highly sensitive to country risks, including political instability, economic uncertainty, and financial volatility, which can undermine their stability and long-term contribution to economic development.

Existing research has primarily focused on FDI determinants, emphasizing economic risks while underexploring the role of political and financial risks in shaping investment flows (Salem & Younis, 2021). For instance, foreign firms are acutely sensitive to financial risks in the host country, such as currency fluctuations and fiscal imbalances, which can erode investor confidence and deter investment (Hayakawa *et al.*, 2012). More recent research, such as Hassan (2022), Nassour *et al.* (2020), and Rezk *et al.* (2022), highlights the importance of governance and political stability in mitigating risks, while still noting that financial vulnerabilities, such as high external debt and economic volatility, remain pivotal in shaping investor confidence. Additionally, existing studies have predominantly focused on FDI, leaving the dynamics of FPI underexplored, particularly in the context of emerging economies like Egypt. The 2016 currency devaluation, for instance, significantly impacted foreign investment flows, underscoring the need to assess the nuanced effects of country risks on both FDI and FPI. Similarly, external shocks, such as the COVID-19 pandemic and the 2022 Russia-Ukraine conflict, have highlighted the importance of understanding how domestic and global risks interact to influence investment behavior. For policymakers, managing these risks effectively through fiscal reforms, governance improvements, and economic stabilization is essential to attract and sustain FDI and FPI inflows.

This study addresses these gaps by examining the short- and long-term impacts of economic, financial, and political risks on FDI and FPI inflows into Egypt from 1998 to 2022. Using the Autoregressive Distributed Lag (ARDL) model, the analysis captures both immediate and lagged effects, providing a comprehensive perspective on how different risk dimensions shape investment flows over time. By integrating both FDI and FPI into the analysis, the study contributes to the existing literature by offering insights into the dual effects of political risk, the delayed impacts of financial instability, and the varying sensitivities of FDI and FPI to economic conditions. The findings aim to inform policymakers on effective strategies to mitigate country risks, stabilize investment environments, and foster sustainable economic growth.

The paper is structured as follows: Section 2 reviews the literature and develops the study's hypotheses, Section 3 describes the research methodology, Section 4 presents the findings, and Section 5 offers policy implications and concludes.

## **Literature Review and Hypothesis Development**

### **Country Risk and Foreign Direct Investment**

Country risk, encompassing political instability, economic uncertainty, and financial volatility, is widely recognized as a critical determinant of Foreign Direct Investment (FDI). FDI refers to an investment made by a firm or individual in one country into business interests located in another. The International Monetary Fund (IMF, 2015) defines FDI as an investment that grants the investor significant control or influence over the foreign enterprise. This control is typically achieved through mechanisms such as capital transfers, acquisition of tangible assets, or technological transfers (Rafat & Farahani, 2019). As a cornerstone of globalization, FDI enables international firms to establish a foothold in foreign markets by owning and managing productive assets, including plants, equipment, and technology (Cavusgil *et al.*, 2020). For emerging economies such as Egypt, FDI plays a vital role in promoting economic growth, addressing foreign currency shortages, promoting economic stability, creating jobs, and facilitating technology transfer (Salem & Younis, 2021; Gadallah & Alnagar, 2023).

Financial risk refers to a country's ability to manage external debts and maintain currency stability, directly influencing investor confidence (Hassan, 2022). Economic risk is often represented by metrics such as GDP growth, inflation rates, and the balance of payments, which collectively affect the overall health of an economy (Salem & Younis, 2021). Political risk includes factors such as political instability, corruption, terrorism, and governance inefficiencies (Cavusgil *et al.*, 2020).

Global analyses have further demonstrated the critical role of country risk. Vijayakumar *et al.* (2009) utilized data from the International Monetary Fund to examine over 100 countries, concluding that political risks, sovereign ratings, and economic performance significantly influence FDI inflows. Despite establishing a global perspective, the study's findings remain generalized and lack the contextual specificity needed for understanding FDI dynamics in individual economies like Egypt. Similarly, Mateev and Stoyanov (2014) analyzed Bulgaria and found that foreign investors heavily weigh economic and political risk factors, including market size and governance efficiency, when making FDI decisions.

Numerous studies highlight the adverse relationship between country risk and FDI inflows, with particular emphasis on political and economic risks. For instance, Al-Khouri (2015) found that economic risk and political instability significantly reduces FDI in the MENA region, while trade openness positively influences inflows, suggesting that governments should prioritize reducing economic risks through policy reforms. Similarly, Topal and Gül (2016) observed that reductions in political and economic risks foster FDI inflows in developing countries, including Egypt. Notably, they concluded that increased

FDI inflows contribute to reducing overall country risk, creating a virtuous cycle for emerging economies.

More recent studies have broadened the scope to emerging economies, emphasizing the importance of macroeconomic stability and governance in attracting FDI. For example, Al-Gasaymeh *et al.* (2022) found that economic performance and political stability significantly enhance FDI attractiveness in countries such as Algeria, Bahrain, and Egypt. However, their findings also highlighted that poor credit ratings reflecting financial risk deter FDI inflows. Similarly, Bouyahiaoui and Hammache (2018) observed a sharp decline in private investment in Egypt following the political uncertainty of the 2013 revolution, reaffirming the strong link between political risk and investment decisions.

However, inconsistencies remain in the literature. Farid and Adly (2016) and Salem and Younis (2021) focused solely on economic risk in Egypt, finding it highly influential, while financial and political risks were excluded due to data limitations. Farid and Adly highlighted the predominant role of economic risk, showing that factors such as inflation and interest rates significantly influence FDI inflows, while Salem and Younis argued that investors prioritize individual components of country risk, such as political and economic risks, rather than aggregated country risk scores. In contrast, Hassan (2022) reported mixed effects for financial risk, with significant impacts in some contexts but negligible influence in others, whereas Vijayakumar *et al.*, (2009) emphasized the significance of financial risk on FDI inflows. These contradictions underscore the need for comprehensive research that integrates all three dimensions of country risk—economic, financial, and political.

This study examines the specific impacts of economic, financial, and political risks on FDI in Egypt. By focusing on a single national context, the research aims to provide deeper insights into how each risk dimension shapes investment decisions, particularly in an emerging market undergoing rapid economic and political transitions. The following hypotheses are proposed:

H<sub>1</sub>: Economic risk has a significant impact on foreign direct investment.

H<sub>2</sub>: Financial risk has a significant impact on foreign direct investment.

H<sub>3</sub>: Political risk has a significant impact on foreign direct investment.

### **Country Risk and Foreign Portfolio Investment**

Foreign Portfolio Investment (FPI) differs from FDI in that it involves the acquisition of financial assets, such as stocks and bonds, rather than direct control of physical assets. Due to its short-term nature, FPI is typically more volatile than FDI, earning it the label of "hot money" (Waqas *et al.*, 2015). Investors engaging in FPI primarily seek returns on financial securities without the intention of exerting managerial control. FPI is also characterized by its liquidity, allowing investors to exit a market more quickly than they could with FDI (Humanicki *et al.*, 2013).

The determinants of FPI include macroeconomic factors such as exchange rate stability, inflation, economic growth, and government debt ratings, which are similar to those influencing FDI (Singhania & Saini, 2017). Al-Khoury (2015) lightly touched on this relationship in a study primarily focused on country risk and FDI. Using the GMM technique, the study found that FPI does not share the same determinants as FDI. Instead, key factors influencing FPI inflows into the MENA region included lag in FPI, degree of openness, stock market capitalization, and return on investment, rather than the traditional country risk factors that typically affect FDI.

Other studies have highlighted a significant relationship between economic growth and FPI, indicating that economic performance is a major pull factor in attracting FPI to a host country (Duasa & Kassim, 2009). Additionally, the relationship between inflation, economic growth, and government debt ratings in the host country and FPI has been extensively discussed. For example, Syarifuddin (2020) found that economic prosperity, government debt ratings, and interest rate differentials are crucial determinants of FPI inflows in ASEAN countries. However, when it comes to specifically measuring the impact of country risk on FPI, the literature remains sparse.

Compared to FDI, the literature on the relationship between country risk and FPI remains sparse. Studies such as Al-Samman and Gab Alla (2020) highlight that political risk significantly influences FPI in both the short and long term, while economic and financial risks exert primarily negative effects. However, their study narrowly focused on political dimensions, overlooking the nuanced impacts of economic and financial instability, particularly in periods of global uncertainty. Other research underscores the volatility of FPI due to its short-term nature. Abdel-Gawad *et al.* (2023) identified economic growth and exchange rate stability as major determinants of FPI, while Singhania and Saini (2017) emphasized the importance of government debt ratings.

Although these studies (Al-Samman & Gab Alla, 2020; Syarifuddin 2020; Abdel-Gawad *et al.*, 2023) discuss the relationship between country risk and FPI, a comprehensive examination of how economic, financial, and political risks collectively influence FPI remains underdeveloped. Moreover, existing studies often isolate individual components of country risk, leaving a gap in understanding their collective impact on FPI inflows and returns.

Furthermore, recent research post-2020 has further emphasized the vulnerability of FPI to global shocks. For example, the COVID-19 pandemic and the 2022 Russia-Ukraine conflict triggered significant capital outflows from emerging markets, including an estimated \$20 billion from Egypt alone (Ahram Online, 2024). Such events demonstrate how global crises exacerbate country-specific risks, underscoring the critical need to understand how economic, financial, and political risks interact with external shocks to influence FPI flows.

In emerging markets like Egypt, FPI plays a crucial role in enhancing the liquidity of domestic capital markets. However, this inflow of capital also increases the country's vulnerability to external shocks, as evidenced by the significant outflows during the aforementioned conflicts. Carrieri *et al.* (2006) argue that real exchange rates, rather than nominal rates, should be employed to assess FPI determinants, as they account for inflationary effects.

To address these gaps, this study examines how economic, financial, and political risks influence FPI in Egypt, providing a nuanced perspective that accounts for both short-term volatility and long-term stability. By bridging this gap, the research contributes to a more holistic understanding of the dynamics underlying FPI decisions. The following hypotheses are proposed:

H<sub>4</sub>: Economic risk has a significant impact on foreign portfolio investment.

H<sub>5</sub>: Financial risk has a significant impact on foreign portfolio investment.

H<sub>6</sub>: Political risk has a significant impact on foreign portfolio investment.

The hypotheses aim to advance our understanding of the multifaceted relationship between country risk, FDI, and FPI, offering valuable insights that contribute to the broader discourse on international investment.

### **3.0 Research Methodology**

#### **3.1 Sample and Variable selection**

This study employs a time series analysis to examine the influence of economic, financial, and political risks on FDI and FPI in Egypt over the period from 1998 to 2022. The primary objective is to assess how these risks have affected FDI and FPI inflows, particularly in the context of dynamic economic shifts following Egypt's post-2016 economic reforms.

A trial study was conducted to test the appropriateness of the chosen variables, which yielded conflicting results with the existing literature and revealed multiple discrepancies due to extremely high multi-collinearity. Multi-collinearity arises when there is a high correlation between independent variables in a multiple regression model. This can negatively affect the overall model due to increased standard error, leading to a statistically insignificant model (Kim, 2019). Multi-collinearity diagnostics were performed by analyzing the Variance Inflation Factor (VIF) for each variable, where a VIF value above 10 indicates abnormal levels of multi-collinearity requiring remedies. The results indicated high multi-collinearity within variables such as gross domestic product, gross domestic product per capita, and external debt as a percentage of GDP. These variables were excluded to resolve the issue.

To address the challenge of accurately measuring economic risk while mitigating multi-collinearity, this study follows a similar approach to Salem and Younis (2021), adopting the ICRG methodology. This methodology combines the current account balance as a percentage of GDP (EcoRisk1) with GDP growth (EcoRisk2) to create a composite economic risk measure. This

refinement reduced multi-collinearity significantly and enhanced the robustness of the model.

The final model incorporates three independent variables to represent the dimensions of country risk. **Economic risk** is measured using a composite variable that combines GDP growth (EcoRisk2) and the current account balance as a percentage of GDP (EcoRisk1). **Financial risk** is captured by the absolute value of external debt, reflecting the stability of the financial system. **Political risk** is operationalized using the Political Stability Index from the World Governance Indicators dataset, which evaluates governance quality, policy uncertainty, and social unrest. The dependent variables in the model include **FDI**, expressed as a percentage of GDP, and **FPI**, represented by net equity inflows. These variables were selected based on their relevance in prior literature (e.g., Topal & Gül, 2016; Salem & Younis, 2021) and their availability for the study period.

Political risk, a key independent variable in this study, is operationalized using the Political Stability Index obtained from the World Governance Indicators dataset. This index measures governance quality, policy uncertainty, and social unrest, capturing the following dimensions:

1. **Political Stability and Absence of Violence:** Reflecting the likelihood of government changes, violent protests, or armed conflicts.
2. **Governance Effectiveness:** Assessing the credibility and functionality of public institutions, which influence investor confidence.
3. **Corruption Control:** Evaluating transparency and ethical standards in governance, which affect perceived investment risk.
- 4.

By integrating these dimensions, the study captures the multifaceted nature of political instability and its potential to impact investment decisions. This approach builds on previous research (e.g., Al-Khouri, 2015; Al-Samman & Gab Alla, 2020) while addressing the limitations of single-dimension measures. The dataset was sourced from established and credible institutions, including the World Bank, the International Monetary Fund (IMF), and the Central Bank of Egypt (CBE). The selection and verification of data sources align with prior academic studies, ensuring both credibility and consistency in the analysis. Table 1 provides a summary of the selected variables and the corresponding codes used in this research.

**Table 1: Variable Summary and Coding**

Variable	Description	Source	Type	Code
FDI % of GDP	Foreign direct investment as a % of GDP	World Bank Data	Dependent	FDI
Portfolio Equity Net Inflows	Net inflows from equity securities in the local Egyptian market		Dependent	FPI
Current Account % of GDP	Sum of net exports of goods and services as % of GDP		Independent	EcoRisk1
Gross Domestic Product Growth	Annual percentage growth rate of GDP		Independent	EcoRisk2
External Debt Value	Total External Debt in Egypt	Central Bank of Egypt (CBE)	Independent	FinRisk
Political Stability Rank	World governance score on the political stability and absence of violence in countries	World Governance Indicators World Bank	Independent	AvPolRisk

### 3.2 Descriptive statistics and Correlation analysis

The analysis of economic, financial, and political risks, alongside investment flows in Egypt over a 25-year period, reveals varying degrees of volatility and impact. Table 2 presents the descriptive statistics for the variables analyzed in this study, focusing on Foreign Direct Investment (FDI), Foreign Portfolio Investment (FPI), economic risks (EcoRisk1 and EcoRisk2), financial risk (FinRisk), and average political risk (AvPolRisk). **FDI** has a mean annual growth of 2.66%, with a standard deviation of 2.42%, indicating moderate fluctuations around its mean, showing fluctuations within a notable range but remain within a relatively tight span, suggesting a stable inflow over the years despite minor declines. On the contrary, **FPI** reveals substantial volatility, with a mean value of -52.38%. The standard deviation of 869.45% is significantly high, underscoring extreme fluctuations ranging from a steep decline of -950.52% to a high of 923.55%. This vast range indicates periods of intense capital outflows contrasted with sharp inflows, reflecting the volatile nature of portfolio investments in Egypt.

**Economic Risk 1 (EcoRisk1)**, measuring economic stability, reported a slight negative average of -1.45%, with a low standard deviation of 2.77%. The values fluctuated between -6.20% and 5.00%, suggesting mild economic



instability throughout the period. On the other hand, **Economic Risk 2 (EcoRisk2)** showed a positive average change of 4.62% in economic indicators, with a standard deviation of 1.64%. The minimum and maximum readings of 1.77% and 7.16% depict relatively stable economic conditions with minor variations. **Financial Risk (FinRisk)** sustains an average of 8.50%, with a standard deviation of 1.62%, indicating a moderate level of financial uncertainty, ranging from 7.43% to 11.21%. This suggests a steady but occasionally fluctuating financial environment. **Average Political Risk (AvPolRisk)** measures at 31.45%, with a variability of 6.45%. The range from 22.88% to 41.33% indicates varying degrees of political stability, reflecting the shifts in governance and policy environments.

**Table 2: Summary Statistics**

Variable	Mean	Std. Dev.	Min	Max
FDI	0.027	0.024	-0.002	0.093
FPI	-0.524	8.695	-9.505	9.236
EcoRisk1	-0.014	0.028	-0.062	0.050
EcoRisk2	0.046	0.016	0.018	0.072
FinRisk	8.505	1.615	7.433	11.212
AvPolRisk	31.451	6.445	22.884	41.331

**Table 3: Correlation Matrix**

	FDI	FPI	EcoRisk1	EcoRisk2	FinRisk	AvPolRisk
FDI	1					
FPI	0.1649	1				
EcoRisk1	0.2601	0.2377	1			
EcoRisk2	0.6094	0.2106	0.0501	1		
FinRisk	-0.0908	-0.0865	-0.5224	0.0183	1	
AvPolRisk	0.0413	0.1818	0.4317	0.3737	-0.6065	1

A pairwise correlation analysis was conducted among the variables, including significance levels. As shown in Table 3, the moderate positive correlation between FDI and EcoRisk2 ( $r = 0.6094$ ) suggests that favorable economic conditions attract more foreign direct investment, with this relationship being statistically significant ( $p < 0.05$ ). In contrast, the weak correlations between FDI and financial risk ( $r = -0.0908$ ) and political risk ( $r = 0.0413$ ) indicate that these factors do not significantly influence FDI inflows, as indicated by non-significant p-values ( $p > 0.05$ ). Additionally, the strong negative correlation between financial risk and political risk ( $r = -0.6065$ ) suggests a significant inverse relationship, where financial instability is linked to political instability ( $p < 0.05$ ). FPI shows a weak positive correlation with political risk (AvPolRisk,  $r = 0.1818$ ) and a weak negative correlation with financial risk (FinRisk,  $r = -0.0865$ ). These results imply that political stability may have a

minor positive influence on portfolio investments, while financial instability could discourage them, though neither relationship is statistically significant. Overall, the correlation analysis underscores the differentiated impacts of economic, financial, and political factors on investment types in Egypt, providing valuable insights for researchers and policymakers to further explore these dynamics.

### Unit Root Test

The stationarity of the time series variables was tested using the **Augmented Dickey-Fuller (ADF)** (Granger, 1981; Granger & Newbold, 1974). test to determine whether the original and differenced variables were stationary. Stationarity is a critical assumption for time series analysis, as non-stationary data can lead to spurious regression results. The results of the ADF tests are summarized in Table 4.

**Table 4: Interpolated Dickey-Fuller Test Results**

		FDI	FPI	EcoRisk1	EcoRisk2	FinRisk	AvPolRisk
Z(t)		-1.723	-3.236	-1.526	-2.544	-0.295	-1.305
p-value		0.4195	0.0180	0.5206	0.1051	0.9262	0.6269
1% value	critica	-3.750					
5% value	critica	-3.000					
10% value	critica	-2.630					

The ADF results indicate that FDI does not reject the null hypothesis of a unit root, with a test statistic of -1.723 and a MacKinnon p-value of 0.4195, suggesting that FDI is non-stationary at conventional significance levels. However, the test for FPI shows a test statistic of -3.236 and a p-value of 0.0180, which is below the 5% significance level, indicating that FPI is stationary. Similarly, EcoRisk1 and EcoRisk2 exhibit non-stationarity, with test statistics of -1.526 (p-value = 0.5206) and -2.544 (p-value = 0.1051), respectively, failing to reject the null hypothesis of a unit root at the 5% significance level. Furthermore, FinRisk and AvPolRisk also display non-stationarity, as evidenced by their respective test statistics and p-values.

Overall, the ADF test results suggest that most of the risk variables, as well as FDI, are non-stationary, while FPI is stationary at the 5% significance level. Given the presence of a mix of stationary (I(0)) and non-stationary (I(1)) variables, the **Autoregressive Distributed Lag (ARDL) model**, suggested by Pesaran *et al.* (2001), is the most appropriate econometric tool for analyzing the impact of the independent variables on the dependent variables. The ARDL model is ideal for datasets that include a combination of I(0) and I(1) variables, as it allows for the modeling of both short-run and long-run relationships

between variables without requiring that all variables be integrated of the same order. In this study, the ARDL model will be used to assess the dynamic interactions between FDI and FPI (dependent variables) and the set of risk indicators (independent variables). The ARDL approach enables us to explore both the short-term effects of economic, financial, and political risks on investment flows and the long-term equilibrium relationships that may exist between these variables (Pesaran *et al.*, 2001). However, several structural breaks, including the 2008 global financial crisis, the 2011 revolution, and the 2016 currency devaluation, have likely disrupted the long-term relationships between economic, financial, and political risk factors and investment flows in Egypt. As a result, this study focuses on short-term dynamics, which provide more relevant insights given the volatility and frequent shifts in the underlying economic environment (Leybourne *et al.*, 2003; Perron, 1989, 1997).

### Model Specification

This study employs the ARDL model to analyze the impact of economic, financial, and political risks on FDI and FPI inflows into Egypt. The ARDL model is particularly well-suited for datasets that exhibit a combination of stationary (I(0)) and non-stationary (I(1)) variables, as confirmed by the Augmented Dickey-Fuller (ADF) tests conducted in this study. Unlike Vector Autoregressive (VAR) or Vector Error Correction Models (VECM), which require all variables to be of the same order of integration, ARDL offers the flexibility to analyze short- and long-run relationships simultaneously without the need for pre-testing the variables for stationarity at the same level (Pesaran & Shin, 1999; Pesaran *et al.*, 2001).

Additionally, ARDL is particularly robust for small sample sizes, making it ideal for the annual time-series data spanning 1998 to 2022 in this study. This approach allows us to capture the short-term effects of country risk on foreign investment while also estimating the long-term equilibrium relationships, even in the presence of structural breaks caused by events such as the 2008 global financial crisis, the 2011 revolution, and the 2016 currency devaluation.

The general ARDL (p, q) model is specified as follows:

$$Y_t = \alpha_0 + \sum_{i=1}^p \alpha_i Y_{t-i} + \sum_{j=0}^q \beta_j X_{t-j} + \epsilon_t$$

where  $Y_t$  represents the dependent variable (FDI, FPI) and independent variables (economic, financial, and political risks) are denoted as  $X_{t-j}$ ,  $\alpha_i$  and  $\beta_j$  are the short-run coefficients,  $\epsilon_t$  is the error term, and  $p$  and  $q$  denote the lag lengths for the dependent and independent variables, respectively. The valid asymptotic inferences on short- and long-run parameters are made under the least squares estimates of an ARDL model (Narayan & Smyth, 2004;

Pesaran and Shin, 1999). We allow for maximum lag order of 2, since the data is annual.

To determine the order of integration of each variable, the ADF unit root test was performed. The test results indicate that FPI is stationary at the 5% significance level, while FDI, EcoRisk1, EcoRisk2, FinRisk, and AvPolRisk are non-stationary. These results suggest that the variables exhibit a combination of I(0) and I(1) characteristics, further justifying the use of the ARDL model. Since none of the variables are integrated of order two (I(2)), the ARDL model is confirmed (Pesaran *et al.*, 2001). Moreover, the **Error Correction Model (ECM)** is estimated to capture the short-run dynamics and the speed of adjustment to the long-run equilibrium. It takes the following form:

$$\Delta Y_t = \alpha_0 + \sum_{i=1}^p \alpha_i \Delta Y_{t-i} + \sum_{j=0}^q \beta_j \Delta X_{t-j} + \lambda EC_{t-1} + \epsilon_t$$

Where:

- $\Delta$  Represents the first difference,
- $EC_{t-1}$  is the error correction term, capturing the long-run equilibrium, and
- $\lambda$  is the speed of adjustment coefficient, which indicates how quickly the system returns to equilibrium after a short-run shock.

The model accounts for lags (p, q) to capture dynamic adjustments. The Error Correction Model (ECM) derived from ARDL estimates the speed at which the system returns to equilibrium after short-term shocks.

### Diagnostic Tests for Model Robustness

To ensure the robustness of the ARDL models for both **FDI** and **FPI**, diagnostic tests were conducted to check for serial correlation and heteroskedasticity in the residuals. These tests are essential to confirm that the assumptions of the models are valid and that the results are reliable.

To assess whether the residuals of the ARDL models for FDI and FPI exhibit **autocorrelation**, the **Breusch-Godfrey LM** (Perron, 1997) test was conducted. The null hypothesis for this test is that there is no serial correlation in the residuals. For the FDI model, the Chi-squared statistic was 1.993 with a p-value of 0.1581. Since the p-value is greater than 0.05, we fail to reject the null hypothesis, indicating that there is no significant evidence of autocorrelation in the residuals at the 1-lag level. This absence of serial correlation suggests that the FDI model is robust, as autocorrelation in residuals can lead to inefficient estimates and incorrect inference.

Similarly, for the FPI model, the Chi-squared statistic was 1.822 with a p-value of 0.1771, again greater than 0.05. As a result, we fail to reject the null hypothesis, indicating no significant autocorrelation in the residuals at the 1-lag level. This confirms that the residuals are independent over time, further

supporting the reliability of the estimated ARDL models. The absence of serial correlation supports the robustness of the model, as autocorrelation in the residuals could lead to inefficient estimates and incorrect inference.

To evaluate the presence of **heteroskedasticity** in the ARDL model, the **Breusch-Pagan/Cook-Weisberg test** was performed (Pesaran *et al.*, 2001). The null hypothesis of this test is that the residuals exhibit constant variance, or homoscedasticity. The test produced a Chi-squared statistic of 0.38 and a p-value of 0.5365. Since the p-value is greater than 0.05, we fail to reject the null hypothesis, indicating no significant evidence of heteroskedasticity. This suggests that the residuals' variance remains constant across different levels of fitted values, meaning no adjustments for heteroskedasticity are necessary. The assumption of homoscedasticity holds, reinforcing the reliability of the model.

Similarly, the Breusch-Pagan/Cook-Weisberg test was also conducted for the ARDL model of FPI to evaluate whether the residuals show signs of heteroskedasticity. The test yielded a Chi-squared statistic of 0.26 with a p-value of 0.6107. Again, the p-value exceeds the 0.05 threshold, leading us to fail to reject the null hypothesis of constant variance. Therefore, there is no evidence of heteroskedasticity in the residuals of the FPI model, confirming that the variance remains consistent across different levels of the fitted values and supporting the robustness of the model.

The results from the diagnostic tests indicate that both the **FDI** and **FPI** models do not suffer from serial correlation or heteroskedasticity in the residuals. These findings confirm that the models are well-specified, and the results are robust, providing confidence in the validity of the conclusions drawn from the analysis.

## **Results and Discussion**

### **FDI Model Results**

The results from the ARDL model, as shown in Table 5, provide a strong indication of the significant role played by the independent variables and their lags in determining FDI flows in Egypt. The model exhibits a high level of overall fit, with an F-statistic of 15.93 and a p-value of 0.0000, confirming that the independent variables collectively influence FDI at a 1% significance level. The R-squared value of 0.9409 suggests that the model accounts for 94.09% of the variation in FDI, which is impressive. Even after adjusting for the number of predictors, the adjusted R-squared remains high at 88.19%, confirming that the model explains a substantial portion of the variation in FDI. These metrics indicate that the model provides a reliable representation of how economic, financial, and political risks, along with their lags, impact FDI.

**Table 5: FDI Model ARDL Regression Results**

Dependent Variable is FDI						
Error correction representation for selected ARDL model ARDL(1,0,1,0,2)						
FDI	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
L1. FDI	1.009657***	0.2661968	3.79	0.003	0.423762	1.595552
L2. FDI	-0.4798021**	0.1707735	-2.81	0.017	-0.855672	-0.103932
EcoRisk1	-0.3196723*	0.1698679	-1.88	0.087	-0.693549	0.0542043
L1. EcoRisk1	0.1869373	0.1906925	0.98	0.348	-0.232774	0.6066487
L2. EcoRisk1	0.4096375**	0.1579736	2.59	0.025	0.06194	0.757335
EcoRisk2	0.2751624	0.1905014	1.44	0.176	-0.144128	0.6944532
L1. EcoRisk2	-0.6330492*	0.3004861	-2.11	0.059	-1.294415	0.0283163
FinRisk	0.0016017	0.0036693	0.44	0.671	-0.006474	0.0096778
L1. FinRisk	0.0088914*	0.0044928	1.98	0.073	-0.000997	0.0187801
L2. FinRisk	-0.0062216*	0.0033705	-1.85	0.092	-0.01364	0.0011968
AvPolRisk	0.0013837	0.0010294	1.34	0.206	-0.000882	0.0036494
_cons	-0.0467971	0.0340586	-1.37	0.197	-0.12176	0.0281654

\*, \*\* and \*\*\* signifies statistically significant at 10%, 5% and 1% level respectively

The dynamics of FDI, as revealed by its lagged values, show strong short-run adjustments. FDI from the previous period has a statistically significant and positive effect on current FDI, with a coefficient of 1.0097, suggesting a degree of inertia or momentum in investment flows. However, FDI lagged by two periods exerts a negative effect, as indicated by the coefficient of -0.4798, suggesting that there is a cyclical correction process where periods of high FDI growth are followed by adjustments that slow down inflows. This cyclical nature highlights the need for further analysis to explore whether such adjustments are linked to external shocks or internal policy changes. The negative lag also implies that FDI may tend to "self-correct," meaning that excessively high inflows in one period could be followed by declines in subsequent periods as market equilibrium is restored. Moreover, the ARDL model results reveal that economic, financial, and political risks significantly influence Foreign Direct Investment (FDI) inflows into Egypt, with varying short-term and lagged effects.

Economic risk (EcoRisk1) has a statistically significant negative impact on FDI in the short term, with a coefficient of -0.320 ( $p < 0.10$ ). This result indicates that a 1% increase in economic instability is associated with a 0.32% reduction in FDI inflows. However, the lagged effect of EcoRisk1 is positive and significant, with a coefficient of 0.410 ( $p < 0.05$ ). This suggests that while economic instability initially deters investment, it may create opportunities for recovery or adaptive responses in subsequent periods. For instance, an initial

economic shock might prompt corrective policy measures that enhance long-term investment appeal. Conversely, EcoRisk2 shows no significant current effect on FDI, but the negative effect from its lagged value points to the potential delayed impact of economic instability. This delayed response may reflect the time it takes for macroeconomic risks, such as growth fluctuations or inflation, to influence the long-term decisions of foreign investors.

Financial risk (FinRisk), represented by external debt, exhibits no significant immediate impact on FDI inflows, with a coefficient of 0.002 ( $p > 0.10$ ), suggesting that investors may not react immediately to changes in financial stability, possibly due to factors like regulatory buffers or the availability of credit. However, its lagged effects reveal a complex dynamic. The first lag is positive (coefficient: 0.009,  $p < 0.10$ ), suggesting delayed investor confidence following financial adjustments. Conversely, the second lag is negative ( $-0.006$ ,  $p < 0.10$ ), implying that prolonged financial instability eventually erodes investor confidence. These results underscore the importance of fiscal stability and prudent debt management in maintaining a favorable investment climate. The weak lagged effects—both positive from one period ago and negative from two periods ago—indicate that financial risk has a delayed influence on FDI. This could point to investors initially perceiving financial instability as an opportunity before reassessing their position after seeing continued risk. The results align with the majority of previous research that considered financial risk, such as the work of Vijayakumar *et al.* (2009), Al-Khoury (2015), and Al-Gasaymeh *et al.* (2022). On the other hand, it contrasts with the findings of other studies, including Farid and Adly (2016), Topal and Gül (2016), Salem and Younis (2021), and Hassan (2022). These differences highlight the variability in outcomes when examining financial risk and its impact on FDI, suggesting that specific contextual factors may play a significant role in shaping the results across different studies.

Political risk (AvPolRisk) does not show a statistically significant short-term effect on FDI inflows (coefficient: 0.001,  $p > 0.10$ ). This finding implies that foreign investors may either disregard political volatility in the short term or that long-term investors may factor in political volatility as part of their risk assessments and strategies. Nevertheless, the lack of immediate impact does not negate the importance of political stability, as prolonged political uncertainty could have indirect effects on investor sentiment and market conditions. The results are consistent with those of Farid and Adly (2016) and Salem and Younis (2021), but contrast with the results of other studies, including Mateev and Stoyanov (2014), Al-Khoury (2015), Topal and Gül (2016), Al Samman and Mouselli (2018), Bouyahiaoui and Hammache (2018), Al-Gasaymeh *et al.* (2022), and Hassan (2022). The divergence in findings indicate that the effect of political risk on FDI may be more context-dependent, varying across different regions, time frames, or investor perspectives.

The concluded FDI insights from the ARDL results reveal that **economic risks** significantly influence FDI inflows, with GDP growth exhibiting a delayed negative effect ( $\beta=-0.63, p<0.05$ ). Similarly, the current account balance exerts a marginally negative influence, highlighting the importance of stabilizing macroeconomic conditions. These findings emphasize the cyclical nature of FDI, where investors respond to sustained economic instability with reduced inflows over time. **Financial risks**, measured through external debt, have weaker immediate effects but show a slightly negative lagged relationship ( $\beta=-0.006, p<0.10$ ). While financial vulnerabilities are not immediately impactful, their cumulative effects underscore the importance of managing external debt effectively. **Political risk** does not exhibit significant short-term effects on FDI, consistent with the long-term nature of such investments. However, the broader political environment indirectly affects investor confidence, aligning with previous studies (Al-Khouri, 2015).

Hence, the findings highlight the cyclical nature of FDI and the time-lagged impacts of country risks. Prolonged economic instability, even if initially overlooked, ultimately deters FDI inflows, emphasizing the need for macroeconomic stability through sustained fiscal reforms and export diversification. While financial risks show limited immediate effects, managing external debt remains critical to preventing future investor hesitancy. Political stability, although not immediately impactful, indirectly supports a conducive environment for long-term FDI growth. Policymakers must take a proactive approach to stabilize economic conditions and enhance governance frameworks to sustain foreign investment.

These findings suggest that macroeconomic stabilization through fiscal reforms and export diversification is essential for sustaining FDI inflows. Additionally, proactive management of external debt and improved governance can enhance Egypt's attractiveness as an FDI destination.

### **FPI Model Results**

The ARDL model highlights that FPI inflows are particularly sensitive to political and economic risks, with notable differences compared to FDI dynamics. The model demonstrates a moderate overall fit, with an F-statistic of 2.78 and a p-value of 0.0451, indicating that the independent variables (EcoRisk1, EcoRisk2, FinRisk, AvPolRisk) and their lags collectively explain a significant portion of the variation in FPI at the 5% significance level. The model's R-squared value of 0.6140 suggests that 61.40% of the variation in FPI is explained by the independent variables, while the adjusted R-squared value of 0.3934, after accounting for the number of predictors, indicates that 39.34% of the variation in FPI is explained by the model. Although the model has moderate explanatory power, there remains a significant portion of unexplained variation.

### **Table 6: FPI Model ARDL Regression Results**



Dependent Variable is FPI						
Error correction representation for selected ARDL model ARDL(2,2,1,2,0)						
FPI	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
L1.FPI	0.509465**	0.190916	2.67	0.018	0.09999	0.918939
EcoRisk1	-40.6992	83.7295	-0.49	0.634	-220.2811	138.8827
EcoRisk2	-7.364099	123.8365	-0.06	0.953	-272.967	258.2388
L1. EcoRisk2	-412.7931**	145.4949	-2.84	0.013	-724.8487	-100.738
FinRisk	-1.517838	1.433559	-1.06	0.308	-4.592517	1.55684
AvPolRisk	2.301191***	0.748279	3.08	0.008	0.696291	3.906091
L1. AvPolRisk	0.417961	0.78796	0.53	0.604	-1.272044	2.107967
L2. AvPolRisk	-2.001305**	0.820847	-2.44	0.029	-3.761846	-0.24076
_cons	11.73896	24.6443	0.48	0.641	-41.11781	64.59573

\*, \*\* and \*\*\* signifies statistically significant at 10%, 5% and 1% level respectively

In terms of short-run dynamics, lagged FPI (L1.FPI) has a positive and statistically significant effect on current FPI, with a coefficient of 0.5095 and a p-value of 0.018. This suggests that FPI exhibits persistence over time, where higher FPI inflows in the previous period lead to higher current inflows. However, the effects of economic risks are mixed. EcoRisk1 and current EcoRisk2 do not have statistically significant short-run impacts on FPI, implying that these measures of economic instability do not immediately deter portfolio investment.

Economic risk (EcoRisk2), measured by GDP growth, shows no statistically significant short-term effect on FPI (coefficient:  $-7.364$ ,  $p > 0.10$ ). However, its lagged effect is substantial and negative, with a coefficient of  $-412.793$  ( $p < 0.05$ ). This result indicates that investors react to economic risks with a delay, withdrawing capital as signs of prolonged instability become apparent. For example, periods of declining economic growth or policy inconsistency may lead to heightened investor skepticism over time, resulting in significant capital outflows. This suggests that investors tend to react to economic risks with a delay, significantly reducing portfolio investments in response to risks perceived in earlier periods. This behavior aligns with prior research by Al-Khouri (2015) and Al-Samman & Gab Alla (2020), both of which demonstrated the substantial impact of economic risk on foreign portfolio investment (FPI) in the host country. These results reinforce the notion that economic uncertainties are a key determinant in shaping investors' decisions, especially in the context of portfolio flows.

Financial risk (FinRisk) does not exhibit a statistically significant effect on FPI inflows in the short term (coefficient:  $-1.518$ ,  $p > 0.10$ ). This suggests that FPI investors may be less sensitive to immediate financial instability, potentially due to their short-term investment horizons and ability to quickly

adjust positions in response to changing conditions. Consequently, financial risk does not appear to be a decisive factor in determining portfolio investment flows into Egypt. This finding contrasts with earlier studies by Al-Khoury (2015) and Al-Samman & Gab Alla (2020), which asserted that financial risks significantly influence FPI.

Political risk (AvPolRisk) has a dual impact on FPI. In the short term, it exerts a positive and significant influence, with a coefficient of 2.301 ( $p < 0.01$ ). This finding suggests that periods of political volatility may attract speculative investments, as investors seek to capitalize on high returns driven by market fluctuations or anticipated policy reforms. However, the significant negative effect of the second lag of political risk ( $-2.001$ ,  $p < 0.05$ ) indicates that prolonged political instability ultimately deters FPI inflows. This dual effect reflects the complex nature of political risk, where short-term opportunities may turn into long-term liabilities if stability is not restored. Moreover, the results suggest that investors might initially tolerate higher political risk, but this tolerance diminishes over time, leading to a delayed negative impact on FPI inflows. This pattern is consistent with the findings of Al-Khoury (2015) and Al-Samman & Gab Alla (2020), who also emphasized the significant influence of a host country's political risk on FPI flows over time. The dual effect underscores the complex relationship between political risk and investment, where it can serve as both an opportunity and a subsequent deterrent, depending on the time horizon.

The concluded FPI Insights from the ARDL results underscore the pronounced sensitivity of FPI to country risks, particularly political risk. In the short term, **political risk** demonstrates a significant positive effect ( $\beta=2.30$ ,  $p<0.01$ ), indicating that speculative investors are attracted to volatile conditions in pursuit of higher returns. However, this effect reverses in the long term, with a significant negative impact ( $\beta=-2.00$ ,  $p<0.05$ ) as prolonged instability erodes investor confidence. **Economic risk** also plays a critical role in influencing FPI. GDP growth exhibits a substantial lagged negative effect ( $\beta=-412.79$ ,  $p<0.05$ ), suggesting that persistent macroeconomic instability significantly deters portfolio inflows. These findings highlight the importance of addressing structural economic vulnerabilities to maintain consistent FPI flows. **Financial risk**, while not immediately impactful, shows potential long-term consequences. The lack of significant short-term effects may reflect investors' initial tolerance for financial instability, but unmanaged debt levels could pose risks to FPI over time.

The dual effects of political risk on FPI reflect its unique vulnerability to speculative inflows and prolonged instability. Short-term political volatility attracts investors seeking high returns, but sustained instability leads to long-term capital outflows. These findings suggest that policymakers must strike a balance between leveraging short-term speculative inflows and mitigating

long-term deterrents caused by sustained instability. This requires strengthening governance, increasing transparency, and addressing corruption to reduce political uncertainty. Economic risk, particularly macroeconomic instability, emerges as a significant deterrent to FPI, underscoring the need for targeted measures to stabilize growth and control inflation. Policies aimed at stabilizing GDP growth, controlling inflation, and promoting diversification in export markets will be critical to sustaining portfolio investment. While financial risks show limited short-term impact, proactive measures to manage external debt and improve financial reporting can build long-term investor confidence, ensuring stability in capital flows.

Overall, the findings highlight critical distinctions between FDI and FPI responses to country risks. FDI is influenced by both immediate and lagged effects of economic and financial risks, reflecting the long-term commitment inherent in direct investment. In contrast, FPI demonstrates a delayed reaction, particularly to economic instability. Political risk, however, plays a dual role for FPI: short-term volatility tends to attract speculative investments, whereas sustained political uncertainty discourages inflows.

### **Conclusion and Policy Implications**

This study provides important insights into the relationship between country risks and foreign investment inflows in Egypt, offering actionable strategies to foster a stable and attractive investment environment.

The findings reveal that economic risks, particularly macroeconomic instability, exert significant delayed negative effects on both FDI and FPI. Policymakers must prioritize stabilizing key indicators such as GDP growth and the current account balance through sustained fiscal reforms, inflation control, and export diversification. These measures will mitigate the prolonged impacts of economic instability and ensure a more resilient economic foundation for attracting long-term foreign investment.

Financial risks, while showing weaker immediate effects, emerge as critical in the long term. Managing external debt through enhanced debt frameworks and reducing reliance on short-term borrowing is essential to preserving investor confidence. Transparency in financial reporting can further strengthen trust among foreign investors and improve the overall investment climate.

Political risk presents a dual challenge for FPI. Short-term political volatility may attract speculative inflows, but prolonged instability significantly deters long-term investments. To address this, governance reforms are imperative. Enhancing institutional quality, reducing corruption, and increasing policy transparency are key to mitigating the delayed negative effects of political instability. For FDI, a stable political environment indirectly supports long-term commitments from investors, reinforcing the need for robust governance structures. By addressing these risks systematically, Egypt can position itself as a more stable and competitive destination for both FDI and FPI. These

findings are particularly relevant for policymakers in emerging markets facing similar challenges, offering a roadmap to balance short-term gains with long-term sustainability.

### **Limitations and Future Research**

The study is subject to several limitations that warrant consideration. First, the analysis does not incorporate long-term estimates due to significant structural breaks in Egypt's economic and political landscape between 1998 and 2022. Events such as the 2008 global financial crisis, the 2011 revolution, the 2016 currency devaluation, and the COVID-19 pandemic likely disrupted the underlying relationships between country risk factors and investment flows. These disruptions made long-term estimates unreliable, prompting a focus on short-term dynamics that better align with the frequent shifts in the economic context. Second, the study focuses on aggregate FDI and FPI, which may obscure sector-specific sensitivities to country risks. Different sectors may respond differently to economic, financial, and political risks, and understanding these variations could provide deeper insights into investment behavior. Lastly, while the research emphasizes country-specific risks, it does not fully account for the role of external global shocks, such as geopolitical conflicts and the broader implications of the COVID-19 pandemic. These factors likely interact with domestic risks to influence investment decisions, and their exclusion represents a potential limitation of the study. Addressing these limitations in future research could provide a more nuanced understanding of the relationship between country risks and foreign investments, offering more targeted insights for both policymakers and investors.

Future research should examine long-term relationships between country risks, FDI, and FPI using cointegration techniques to better understand how these dynamics evolve over time. Disaggregating FDI and FPI by sector could reveal industry-specific sensitivities to risks, providing more targeted insights for policymakers. Additionally, exploring the combined effects of domestic risks and global shocks, such as pandemics or geopolitical conflicts, could offer a deeper understanding of how external factors interact with local conditions to shape investment decisions. Comparative analyses across emerging markets and investigations into time-varying effects of risks would further enhance the understanding of how sensitivity to economic, financial, and political factors shifts in response to structural changes in governance and macroeconomic policies.

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