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ASYMMETRIC EFFECTS OF EXCHANGE RATE UNCERTAINTY AND POLITICAL RISK ON FOREIGN DIRECT INVESTMENT IN EAST ASIA: EVIDENCE FROM DYNAMIC PANEL ANALYSIS

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Abstract

This study investigates the asymmetric effects of exchange rate uncertainty and political risk on Foreign Direct Investment (FDI) inflows in East Asia over the period 1990–2022. While East Asia remains one of the world's most attractive destinations for FDI due to its robust market size, trade openness, and high returns on investment, persistent macroeconomic and political uncertainties pose significant challenges to sustaining these capital inflows. Employing advanced econometric techniques, including ARCH/GARCH models to estimate exchange rate volatility and the Arellano-Bond Generalized Method of Moments (GMM) dynamic panel estimator to address endogeneity concerns, this research explores how these risks asymmetrically influence FDI behavior. The findings reveal that market size, trade openness, and investment returns positively and significantly affect FDI inflows, whereas inflation exerts a negative influence. Surprisingly, infrastructure quality has a significant negative relationship with FDI under uncertainty, suggesting that economic and political instability may overshadow the benefits of physical infrastructure improvements. Asymmetric analysis confirms that negative exchange rate shocks deter FDI, while positive shocks

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have an insignificant effect, highlighting the risk aversion of multinational investors. Furthermore, positive developments in external conflict management, internal stability, and soundness in law and order significantly encourage FDI, while other governance factors like corruption control and bureaucratic quality showed no notable influence. This study contributes to existing literature by adopting a nonlinear, asymmetric framework to analyze the complex dynamics of uncertainty and investment in East Asia. It offers valuable policy insights, emphasizing the need for stable macroeconomic environments, predictable currency regimes, and effective political risk management to attract and retain foreign investment in the region.

Introduction

Foreign Direct Investment (FDI) plays a critical role in driving economic growth, particularly in emerging economies. As a key mechanism for capital inflows, FDI facilitates technology transfer, skills development, and employment generation, ultimately enhancing global competitiveness. The United Nations Conference on Trade and Development (UNCTAD) defines FDI as comprising equity capital, reinvested earnings, and other forms of capital, distinguishing it from short-term investments due to its long-term commitment and relative stability (UNCTAD, 2019).

East Asia has emerged as one of the most dynamic regions for FDI inflows, largely due to its strong economic fundamentals, policy-driven market reforms, and strategic integration into global value chains. According to the World Investment Report 2022, East Asia accounted for a significant share of global FDI, with inflows primarily concentrated in China, Hong Kong, South Korea, and Taiwan. These economies have leveraged stable exchange rate policies, investor-friendly regulations, and advanced industrial bases to attract foreign capital. Notably, China's Belt and Road Initiative (BRI) has reinforced its position as a top FDI destination, while South Korea's

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innovation-driven economy continues to draw high-tech investments (Buckley et al., 2018).

Despite East Asia's success in attracting FDI, the region faces challenges associated with exchange rate volatility and political uncertainties, particularly in the context of U.S.-China trade tensions, geopolitical shifts, and regulatory changes. Exchange rate fluctuations influence investor decisions, with opposing theories suggesting either a deterrent effect due to financial risk (Darby et al., 1999) or an opportunity for multinational corporations (MNCs) to exploit price differentials (Azémar & Giroud, 2023). Additionally, political risks such as policy unpredictability and cross-border tensions can affect investor confidence, making stability a crucial factor in maintaining FDI inflows (Busse & Hefeker, 2007).

This study examines the impact of exchange rate uncertainty and political instability on FDI inflows in East Asia from 1990 to 2022. By analyzing the asymmetric effects of these factors, the research aims to provide insights into the mechanisms that sustain FDI attractiveness in the region. It further evaluates the role of institutional quality, governance structures, and macroeconomic policies in mitigating investment risks. Given East Asia's importance in global trade and investment, understanding these dynamics is essential for policymakers seeking to enhance economic resilience and sustain long-term FDI growth.

Problem Statement

Foreign Direct Investment (FDI) is a key driver of economic growth, particularly in emerging economies, as it brings capital, technology, and employment opportunities. East Asia, home to some of the world's largest economies, consistently attracts substantial FDI inflows due to its stable macroeconomic environment, strong institutional frameworks, and investor-friendly policies. However, despite its advantages, the region faces challenges related to political risk and exchange rate uncertainty, which can influence investment decisions.

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Political instability, policy unpredictability, and institutional weaknesses in some East Asian economies raise concerns for multinational corporations (MNCs), potentially deterring investment. Likewise, exchange rate fluctuations introduce financial risks, affecting investor confidence. While the Production Flexibility Hypothesis suggests that firms can exploit exchange rate volatility, the Risk Aversion Theory argues that excessive uncertainty discourages FDI. Existing research has often relied on linear models to analyze these effects, overlooking the possibility of asymmetric impacts.

This study aims to fill this gap by investigating how political risk and exchange rate uncertainty asymmetrically affect FDI inflows in East Asia. Using advanced econometric techniques such as the Generalized Autoregressive Conditional Heteroskedasticity (GARCH) model and the Arellano-Bond Dynamic Panel Model, this research seeks to provide a deeper understanding of the complex interplay between these factors. The findings will offer policy insights for improving East Asia's investment climate by mitigating risks and enhancing macroeconomic stability.

Research Questions

1. What factors contribute to East Asia's high FDI inflows compared to other Asian regions?
2. How do political stability and transparency influence FDI decisions in East Asia?
3. What is the impact of exchange rate uncertainty on FDI inflows in East Asia?
4. Do political risk and exchange rate volatility have asymmetric effects on FDI in East Asia?
5. What policy measures can be implemented to minimize the negative effects of political risk and uncertainty on FDI in East Asia?

Literature Review

The relationship between FDI and factors such as political risk and exchange rate uncertainty has been a subject of continuous interest among the scholars

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for decades. Over time, researchers have explored how these uncertainties influence investment decisions in different parts of the world, particularly in developing regions like Asia. While some studies found clear patterns, others revealed complexities, and together, they shaped a broad but incomplete understanding. The present study therefore aims to investigate the matter further.

The earliest empirical attempts to investigate political risks' effects on investment can be traced to Bollen et al. (1982), who examined 81 developing countries from 1948 to 1965. The authors discovered that political insecurity that is often measured through variables such as political killings and military coups have significantly discouraged FDI inflows. Yet, interestingly, the researchers noted that large market size and higher levels of economic development could offset this negative influence to some extent.

As the conversation around geopolitical stability intensified, Nigh (1985) took a different angle, exploring how international conflicts and domestic unrest shaped FDI decisions in the United States. The findings reveal that conflict-driven political events, both internal as well as external, had strong deterrent effects on foreign investment, while cooperative political events encouraged multinational firms for investments.

A few years later, the debate became more nuanced. Wheeler and Mody (1992) extended the investigation to 42 countries and concluded that the relationship between political risk and FDI was far from straightforward. While socio-political instability negatively influenced investment, certain aspects of government intervention such as economic reforms and fiscal incentives have sometimes attracted investors, especially in developing economies.

As political risk remained under scrutiny, attention gradually turned to macroeconomic uncertainty particularly exchange rate volatility which is another potential obstacle to investment. Servén (1998) conducted a comprehensive study covering 94 developing countries between 1970 and

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1995. Results revealed that exchange rate instability severely discouraged private investment, with particularly harmful effects in countries where financial markets were weak or underdeveloped.

Recognizing Asia's rising importance, Kim (2006) focused on 11 Asian economies, analyzing the period from 1982 to 2004. The study reaffirmed earlier fears that political risk remains one of the strongest deterrents to FDI in Asia, often overshadowing the positive influence of market openness, infrastructure, and other economic fundamentals. The researcher also noted that bilateral investment treaties (BITs), while beneficial, were insufficient to counterbalance the adverse effects of political instability. This was supported by Busse and Hefeker (2007), who examined panel data from 83 emerging economies, including several in East Asia. The researchers found that higher governance quality reflected in factors like rule of law, control of corruption, and government stability was essential for attracting FDI. Without these institutional strengths, even favorable economic conditions failed to lure investors.

Moving beyond linear relationships, Jeanneret (2007) introduced a fresh perspective by exploring the asymmetry in how exchange rate volatility influences investment. Using data from OECD countries, the study discovered a U-shaped relationship: while low levels of currency volatility discouraged investment, high levels attracted risk-seeking investors. Although, the author by focusing on developed economies found the valuable lessons for East Asian countries with open, export-driven economies.

The importance of political cycles in shaping FDI trends was emphasized by Julio and Yook (2016). By studying 43 countries over nearly two decades, they revealed how FDI inflows typically decline in the run-up to national elections, especially in countries with weak institutional systems. The findings underscored the significance of political predictability for sustaining investment in developing and emerging economies. This narrative was further enriched by Zhang et al. (2023), who examined economic policy uncertainty's

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impact on FDI in 48 Asian countries. The results highlighted that although increased policy uncertainty reduced FDI inflows, countries with strong financial development such as East Asian economies which could partially offset these effects, reaffirming the critical role of institutional resilience.

A related contribution came from Asamoah et al. (2016), who assessed the combined effect of exchange rate volatility and institutional quality in 40 Sub-Saharan African countries. Using GARCH models, they confirmed that exchange rate uncertainty generally discouraged FDI. However, countries with stronger institutions managed to soften the adverse effects, a finding with important implications for East Asian policymakers seeking to enhance investor confidence amid financial turbulence.

Ramzan (2021) examined the asymmetric impact of exchange rate volatility on FDI in Pakistan. Applying GARCH models, the study revealed that exchange rate uncertainty discouraged investment, with the effect becoming more pronounced during periods of political instability and global crises. This further validated the importance of macroeconomic stability for sustaining foreign capital flows. Moreover, Rajan and Hattari (2009) studied the case of 12 developing Asian economies and by using gravity model-based analysis, the authors confirmed that political risk substantially reduced FDI inflows in Asia. On the other hand, financial openness and economic size acted as consistent attractors of foreign investment, offering policymakers clear signals for reform priorities.

This paper seeks to fill that void by adopting a nonlinear, asymmetric framework to specifically analyze how political risk and exchange rate uncertainty impact FDI flows in East Asia. By doing so, it not only contributes to the literature on FDI determinants but also offers actionable insights for policymakers aiming to strengthen investment climates in dynamic, rapidly growing Asian economies.

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Theoretical Background

The existing literature presents various theoretical frameworks analyzing the impact of uncertainty on FDI inflows, with early studies primarily focusing on developed economies. More recently, research has expanded to include developing regions, particularly East Asia. Baniak et al. (2005) proposes a model examining how uncertainty influences FDI in transition economies, highlighting that many East Asian nations have implemented legal and market reforms. However, regulatory changes often fail to account for unique socio-economic and political conditions, leading to instability that disrupts investment operations. Baniak et al. (2005) suggests extending their framework to East Asia, where volatility stems from macroeconomic fluctuations and political unpredictability. Azam et al. (2012) note that social conflicts and geopolitical tensions in East Asia are intensifying faster than in other regions, raising risks for multinational corporations (MNCs) and potentially deterring FDI inflows.

Foreign direct investment (FDI) in East Asia is further affected by institutional weaknesses, including bureaucratic inefficiencies and inadequate protection of property rights (Benassy et al., 2007). Such issues can create "commitment problems" for host governments (Acemoglu et al., 2005), discouraging long-term investments. Investor surveys indicate that challenges like contract enforcement delays and corruption remain prevalent in East Asia (Asiedu, 2002), compounding risks for foreign firms.

Application of Baniak et al. (2005) model is useful to analyze MNC investment decisions in East Asia, particularly in the context of economic and political instability. MNCs in the region face macroeconomic uncertainties, such as exchange rate volatility, often measured using ARCH/GARCH models and political risks including governance instability and institutional inefficiencies which also raise operational costs. To assess these risks, the current study incorporates the political risk index, utilizing ICRG indicators to distinguish between political turmoil and institutional deficiencies. The model

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underscores how exchange rate uncertainty and political risk shape MNC investment strategies in East Asia.

Variable and Data Sources

This study focuses on four East Asian economies, analyzing data spanning from 1990 to 2022. All variables are measured on an annual basis, except for the exchange rate, which is observed monthly. To account for volatility, ARCH/GARCH models are utilized to estimate conditional variances, thereby transforming exchange rate data into a measure of uncertainty. Macroeconomic indicators are sourced from reputable international databases, including the International Financial Statistics (IFS) and World Development Indicators (WDI). The study prioritizes the real exchange rate due to its significance in shaping long-term investment decisions. Political risk is assessed using data from the International Country Risk Guide (ICRG).

The dependent variable in this analysis is Foreign Direct Investment (FDI) inflows, which are influenced by the Gross Domestic Product (GDP) of each host country. Independent variables are grouped into several categories, including macroeconomic characteristics, exchange rate uncertainty, infrastructure quality, investment profile, natural resource availability, labor force metrics, political risk, and institutional strength.

Key macroeconomic variables include trade openness (TO) and the exchange rate (ER). Inflation (INF) and GDP growth are employed as proxies for market size (MKTSIZE), following the methodology of Root and Ahmed (1979) and Tuman & Emmert (1999). GDP growth serves as an indicator of market potential within the East Asian economies, highlighting its relevance in attracting FDI, as emphasized by Nigh (1986). Trade openness is quantified using the trade-to-GDP ratio, i.e., (Exports + Imports)/GDP, a commonly used metric to reflect trade barriers. The openness of a host economy is particularly relevant for firms seeking to import raw materials and export finished goods, thus making trade policy a crucial factor in investment

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decisions. The behavior of the real exchange rate whether appreciating or depreciating can also significantly affect FDI inflows.

Labor quality is captured through the literacy rate (LR), while labor force availability is proxied by the share of the working-age population (ages 15–64) in the total population. Infrastructure quality is assessed through the Road Connectivity Index (RCI), calculated as total road length (in kilometers) divided by the total population. This index reflects the efficiency of the transportation network, which plays a critical role in reducing transaction costs, enhancing mobility, and improving logistical operations factors that collectively influence the region's attractiveness to foreign investors.

Natural resource availability (NR) is included as a dummy variable, indicating the presence of key resources such as minerals or oil. Additionally, the return rate on investment (RRI) is captured using the inverse log of real GDP per capita, as proposed by Asiedu (2002). This variable assesses the relative return potential of investment in these economies and whether higher expected returns contribute to greater FDI attraction.

The model also integrates exchange rate uncertainty measured through ARCH/GARCH techniques and political risk indicators from ICRG. Political risk components include internal conflict (INC), external conflict (EXC), and broader governance factors such as corruption (COR), law and order (LAW), and bureaucratic quality (BQ), following Azam et al. (2012). These institutional variables are essential in evaluating the quality of governance and overall investment climate in host economies.

Furthermore, the investment profile (INP) from the ICRG serves as a proxy for investment risk, covering areas such as contract enforceability, asset revaluation risks, and repatriation of profits. These elements help capture nuanced investment risks not fully explained by other macroeconomic or political variables.

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Descriptive Statistics

Variables	MEAN	SD.	SKEWNESS	KURTOSIS	JARQUE-BERA	CV
FDI Growth	1.66	0.09	2.27	10.35	2865.29	5.07
GDP Growth	7.34	1.55	-0.07	2.01	39.17	16.19
Inflation	1.38	0.25	4.64	38.07	5067.07	17.52
Trade (% of GDP)	1.82	0.47	-3.49	20.78	1404.43	25.42
Exchange Rate	3.09	2.56	0.29	2.36	28.81	97.5
Literacy Rate	4.49	0.21	-2.32	8.02	1794.65	4.48
Active Population	4.07	0.26	5.69	107.01	4212.32	6.12
Infrastructure Quality	2.24	1.25	-0.89	3.24	121.71	55.61
Return on Investment	0.37	0.17	0.08	2.23	24.57	44.45
Investment Profile	7.76	2.22	-0.17	2.77	6.51	27.52
External Conflict	9.41	1.73	-0.63	3.35	65.06	16.14
Internal Conflict	8.77	2.12	-0.66	3.71	83.57	24.11
Corruption	2.55	0.95	0.58	2.95	51.41	37.01

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Law and Order	3.93	1.13	-0.48	2.68	39.18	28.61
Bureaucratic Quality	2.19	0.92	0.21	2.86	6.98	41.75

This descriptive analysis provides insights into the key economic, political, and institutional variables influencing FDI in four East Asian countries from 1990 to 2022. The variables analyzed include macroeconomic indicators, institutional quality, political risks, and infrastructure measures.

The mean FDI growth across these countries is relatively low (1.66%) with minimal variation, suggesting stable inflow trends. However, the data are positively skewed and leptokurtic, indicating occasional spikes in FDI inflows. The GDP growth shows moderate variation, averaging 7.34%, and is nearly normally distributed, suggesting consistent economic expansion in the region. Inflation exhibits a low mean (1.38%), but displays extremely high skewness and kurtosis, revealing the presence of outliers and occasional economic volatility. Trade openness, measured as a percentage of GDP, has a moderate mean (1.82), but is negatively skewed with high kurtosis, highlighting trade concentration in certain periods or countries. The exchange rate variable, transformed to monthly frequency, had a high coefficient of variation (97.5%), indicating significant fluctuations over time. The literacy rates and the proportion of the active population are generally stable, with high averages reflecting strong human capital development. However, active population data are highly skewed and exhibit extreme kurtosis, suggesting the presence of demographic shifts or outliers. Infrastructure quality, measured through road connectivity, displayed moderate variation. A strong infrastructure network is vital for attracting investment; while some regions may show significant development, others may still lag behind. The return-on-investment metric was relatively stable, reflecting consistent economic returns across the sample countries. Political risk indicators, including external and internal conflicts, show moderate variability and slight negative skewness, indicating more

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frequent lower conflict levels with occasional spikes. Institutional quality indicators, such as corruption, law and order, and bureaucratic quality, show noticeable differences across countries. The law and order index and bureaucratic quality reveal moderate to high variability, emphasizing the institutional disparities in the region. Overall, descriptive statistics underscore the dynamic investment landscape in East Asia. While macroeconomic indicators remain generally stable, the high variability in exchange rates, trade openness, and political risk suggests the presence of structural and policy-driven fluctuations. These insights are essential for policymakers and investors in understanding the risk and return profiles of FDI in East Asia.

Expected Sign

Based on this hypothesis, a table of expected signed values has been constructed below;

Variables	**Expected Sign**
Lagged FDI	Positive
Market Size	Positive
Inflation	Ambiguous
Trade Openness	Positive
Exchange Rate	Ambiguous
Literacy Rate	Positive
Economically Active Population	Positive
Infrastructure Quality	Positive
Rate of Return on Investment	Positive
Natural Resources	Positive
Investment Profile	Positive
Exchange Rate Uncertainty	Negative
Political Risk	Negative

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Estimation Methodology and Econometric Specification (Exchange Rate Uncertainty Specification)

This study estimates the ARCH/GARCH measure of conditional volatility to consider the effects of exchange rate uncertainty. This measure involves obtaining the variance of the unforeseeable part of the series. Firstly, construct a forecasting equation for the exchange rate depends on the set of information. The forecasting equation is estimated to generate residuals. The uncertainty measure is calculated as the variance of the estimated residuals. An ARIMA (p, q) model can be the stochastic mechanism that generates a predictable component. In contrast to the unconditional variance of the variable, conditional variance uses previous information to measure volatility. The ARCH/GARCH model has emerged as a standard paradigm within which volatility can be studied (Tse, & Tsui 2002; Bollerslev, 1996). Unlike the uncertainty tests like the rolling standard deviations, The ARCH/GARCH method yields statistical uncertainty estimates in econometric models. It is also found that this approach captures volatility more reliably than other approaches. The ARCH/GARCH model is concerned with distributing stochastic errors conditional on the realized values of collecting variables, including lagged values of conditional variances. The generalized framework of the ARCH, such as the GARCH (p, q) system, is defined as follows:

$$Y_t = f(x_t; \sigma) + \epsilon_t \qquad {}^{\epsilon_t}/_{\varphi_{t-1}} \sim D(0, v_t^2 \qquad (1)$$

$$V_t^2 = \beta_0 + \sum_{i=1}^{q} \beta_i \varepsilon_{t-i}^2 + \sum_{i=1}^{q} \sigma_i v_{t-i}^2 \qquad (2)$$

Where $f(x_t; \sigma)$ refers to the conditional mean, x_t comprises of a vector of an independent parameter which may incorporate lagged y_t, σ is an Mx1 a matrix of variables, φ_{t-1} a piece of information set containing all the facts presented thru the time t-1, and ϵ_t an error term which follows, subject to φ_{t-1}, a distribution of D. Conditional errors have a mean zero and a moment variance V_t^2. Conditional variance is compatible with the GARCH method as in (2). The

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conditional variance, V_t^2 the proxy for uncertainty is the one-period forecast variance based on previous data. It is a component of three terms: the mean volatility level β_0, the ARCH term[1] ϵ_{t-i}^2 and the GARCH term v_{t-i}^2.[2]

The Non- Linear Model

To consider the Non-linear model given by

$$y_{it} = f(x_{it}, \beta^0) + \cup_{it}; i = 1,2, \ldots, N\ , t = 1,2, \ldots, T$$

Y_{it} is the dependent variable observed at cross-sectional unit i and period t. X_{it} is a $K * 1$ vector of the time-varying explanatory variable, and U_{it} is a random error. The vector $\beta^0 \in \tau$ is an unknown $P * 1$ vector of a parameter to be estimated, and τ is a compact subspace of $\mathcal{R}^0$. As a particular case, author considers the generalized linear model (GLIM).

Letting $f(x_{it}, \beta^0) = f\left(x_{it}^{'}\beta^0\right)$,

Where k=p

The following assumption is assumed to hold:

Assumption 1: for a model (1), it is assumed that.

1. F (,) in twice continuously differentiable with respect to β^0,
2. $E\left(\cup_{js}X_{it}\right) = 0$ for I, j∈{1,..., N) and t,s∈ {1, …., T}.
3. $\sum_{t=1}^{T}\sum_{i=1}^{N} x_{it}\, x_{it}^{'}$ is a positive definite.
4. $E\left(\cup_{is}\cup_{jt}\right) = 0$ for $j \neq 1$ and t,s ∈{1,..., T}
5. $E\left(\cup_{is}\cup_{jt}\right) < \infty$ for i ∈{1,...,N} and t,s ∈ {1,...,T},

It should be noticed that with respect to the distribution of the error U_{it} no distributional assumptions are imposed. Additional nuisance parameters are introduced in a fully parameterized model to clarify the serial correlation pattern and the distribution function. In order to neglect such extra

[1] The ARCH term is the squared error lag from the mean equation or uncertainty reports from the previous time.

[2] All the variables in the infinite order AR expression should remain outside the unit circle to maintain a well-defined operation. This will be the case for a GARCH (1,1) method if β_1 and σ_1 are non-negative. $\beta_1 + \sigma_1 < 1$ is also necessary to be stationary for covariance.

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information for two reasons. First, there is hardly any prior information concerning the generating process of the errors in many practical applications. Second, the non-linear setup generally complicates inference in a completely specified model. For instance, even for the simplest discrete choice models, a maximum likelihood framework involves a T-fold integral over the likelihood contributions. Computer-intensive numerical methods must be encountered or restrictive distributional assumptions yielding explicit expression of these integral must be imposed.

The frame applied here allows for so-called "random effects," i.e., cross-section-specific random effects, implying a particular form of serial correlation for the error. It may also be possible to accommodate a "fixed effects" specification using the framework advocated by chamberlain (1984). Such models are, however, beyond the scope of the present paper.

In what follows, this study will consider the generalized method of moments (GMM) estimators, which provides convenient, efficient estimators in many applications (e.g., Ogaki 1993). To introduce the class of GMM estimators, let $y_{i1} = [y_{i1}, ..., y_i]'$ and $X_{i1} = [X_{i1}, ..., X_i]'$. Moreover, assumed that the moment condition could be written as $E[\varphi(y_i, X_i; \beta) = 0$ for all $i \in \{1, ..., N\}$. The GMM estimator is defined by solving the minimization problem.

$$\widehat{\beta} = \underset{\beta \epsilon \Omega}{\operatorname{argmin}} \left[\frac{1}{N}\sum_i \varphi(y_i, X_i, \beta)\right]' A_N \left[\frac{1}{N}\sum_i \varphi(y_i, X_i, \beta)\right] \qquad (3)$$

Where the weight matrix A_N is positive definite. As a convenient framework, the following set assumption is met.

Assumption 2: $[y_i, X_i]$ are independent draws from the set of random variables [y, X]and for the mX1 function $\varphi(y, X; \beta)$ it is assumed that.

1. $E[\varphi(y, X; \beta)]$ exists for all $\beta \in \Omega$ and is zero at β^0, which is in the interior of Ω
2. $\varphi(y, X; \beta)$ is continuous and differentiable in β.
3. A_N converges almost surely to the deterministic matrix A.

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4. The moment constraints identify the parameters.

$$E(\varphi(y, X_i; \beta)]' AE\ [\varphi(y, X; \beta)] = 0 => \beta = \beta^0$$

5. $N^{-1} \sum \varphi(y_i, X_i; \beta)$ converges almost surely and uniformly in β to $E[\varphi(y, X; \beta)]$.
6. $\frac{N^{-1} \sum \partial\varphi(y_i, X_i; \beta)}{\partial\beta}$ converges almost surely and uniformly in β to $\frac{\partial E[\varphi(y, X; \beta)]}{\partial\beta}$
7. $E[\varphi(y, X; \beta)]^2 < \infty$

The i.i.d assumption must be replaced by a less restrictive assumption, e.g., along the lines by Hansen (1982). However, to keep the exposition reasonably simple, Gourieroux *et al.* (1989) assumption is used in what follows.

Given **Assumption 2**, the GMM estimator is consistent and asymptotically normally distributed with

$$\sqrt{N}(\hat{\beta} - \beta) \xrightarrow{d} N(0, V), \qquad (4)$$

Where V= (D'AD)$^{-1}$, $D = \partial E[\varphi(y_i, X_i; \beta)]/\partial\beta']$

(Gourieroux and Monfort, 1989, p. 339). The Optimal Choice of A is

$$A_0 = E\left[\varphi(y, X; \beta^0)\varphi\ (y, X; \beta^0)'\right]^{-1} \qquad (5)$$

Or a sequence of random matrices converging to this expectation

Arellano-Bond Dynamic Panel Models

The study utilized the Arellano-Bond dynamic panel model instead of fixed-effect estimation to address potential endogeneity issues related to FDI decisions. Unlike fixed-effects estimates that assume all regressors are exogenous, the Arellano-Bond GMM tackles the correlation between independent variables and error terms by using lagged values as instruments. This method also accounts for endogenous control variables and addresses the issue of serial correlation in the residuals by introducing a lagged dependent variable as an additional regressor. Many researchers have reported that lagged FDI is highly significant in their regressions (see Gastanaga et al. 1998; Busse and Hefeker, 2005). In the previous period, FDI may have influenced FDI, causing multinational corporations (MNCs) to display greater interest in

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host countries with substantial FDI inflows. This attraction arises from the belief that substantial FDI inflows indicate the success of other MNCs. Consequently, it is deemed appropriate to include the lagged dependent variable in our regression analyses.

Furthermore, the estimator addresses the endogeneity issue in certain control variables. In contrast to the assumption of exogeneity made by the fixed-effect estimation, certain variables may not meet this criterion. For example, in the context of trade openness, FDI inflows can impact overall trade volumes when multinational enterprises (MNEs) import raw materials and semi-manufactured goods while exporting processed commodities. Additionally, FDI can contribute to a host country's capital accumulation, introduce new technologies, stimulate GDP growth rates, and enhance GDP per capita (Busse and Hefeker, 2005). To address endogeneity concerns, this study employs an instrumental variable approach, specifically the Arellano-Bond generalized method of moments (GMM).

The Arellano-Bond estimator assumes no presence of second-order serial correlation to be applied. The author did not reject the null hypothesis of no second-order serial correlation in our data sample. Moreover, to confirm the instruments' suitability overall through a Sargan test of over-identifying restrictions, which indicated the validity of our instruments. The statistical evaluation aligns with a chi-squared distribution when assuming the instruments are valid.

This study utilizes six models in the Arellano-Bond GMM estimation framework. In each model, this study used conventional macro-economic FDI determinants such as market size, inflation, trade openness, exchange rate, literacy rate and economic active population, Infrastructure quality, Rate of return on investment, Natural Resource availability, and investment profile. The first model author employed the exchange rate uncertainty estimated by the GARCH technique. The rest of the models in this study utilized the vector

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variable of the political risk index ($\overrightarrow{PR}$) . This $\overrightarrow{PR}$ variable contains political and institutional risk variables such as external conflict, internal conflict, corruption, law and order, and bureaucracy quality. All these uncertainty and risk variables are written in linear equations (see eq:6 and 7) and then transformed into non-linear equations (see eq:10 and 11).

Thus, to examine the effect of exchange rate uncertainty and political risk on FDI in Asia's sub-region, the author postulated the following linear equation models Arellano-Bond GMM.

The Arellano-Bond GMM models are as follows:

$$\Delta FDIG_{it} = \alpha_0 + \alpha_1 \Delta FDIG_{t-1} + \alpha_2 \Delta MKTSIZE_{it} + \alpha_3 \Delta INF_{it} + \alpha_4 \Delta TO_{it} + \alpha_5 \Delta ER_{it} + \alpha_6 \Delta LR_{it} + \alpha_7 \Delta EAP_{it} + \alpha_8 \Delta IQ_{it} + \alpha_9 \Delta RRI_{it} + \alpha_{10} \Delta NRA_{it} + \alpha_{11} \Delta INP_{it} + \theta \Delta UER_{it} \quad (6)$$

$$\Delta FDIG_{it} = \alpha_0 + \alpha_1 \Delta FDIG_{t-1} + \alpha_2 \Delta MKTSIZE_{it} + \alpha_3 \Delta INF_{it} + \alpha_4 \Delta TO_{it} + \alpha_5 \Delta ER_{it} + \alpha_6 \Delta LR_{it} + \alpha_7 \Delta EAP_{it} + \alpha_8 \Delta IQ_{it} + \alpha_9 \Delta RRI_{it} + \alpha_{10} \Delta NRA_{it} + \alpha_{11} \Delta INP_{it} + \delta \Delta \overrightarrow{PR}(S))_{it} \quad (7)$$

In equation-7 $\overrightarrow{PR}$ represents the vector containing the variables $EC, IC, CORR, LAW, and\ BQ$. Therefore, each variable represent the scaler components of $(\overrightarrow{PR})$ vector variable, the equation of vector as follows.

- $\overrightarrow{PR} = EC.\hat{\imath} + IC.\hat{\jmath} + CORR.\hat{k} + LAW.\hat{l} + BQ.\hat{m} \rightarrow \overrightarrow{PR} = \begin{bmatrix} EC \\ IC \\ CORR \\ LAW \\ BQ \end{bmatrix}$
- $\hat{\imath}, \hat{\jmath}, \hat{k}, \hat{l}, and\ \hat{m}$ represent the unit vectors in the respective directions.

Where,

MKTSIZE = Market Size	**LR** = Literacy rate	**INP** = Investment Profile
INF = Inflation	**EAP** = Economically Active Population	**UER** = Uncertainty of Exchange rate
TO = Trade Openness	**IQ** = Infrastructure Quality	**NR** = Natural Resources

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ER = Exchange rate	**RRI** = rate of return on Investment	**INP** = Investment Profile
PR = Political Risk	**EC** = External Conflict	**IC** = Internal Conflict
CORR = Corruption	**LAW** = Law and Order	**BQ** = Bureaucratic Quality

As per the authors' best knowledge, all previous research on FDI is carried out in a linear framework except one study by Qamruzzaman et al. (2019), whose work was on a nonlinear frame but still needs to incorporate the uncertainty element in their estimation. Thus, this study's prime intention is to examine the asymmetric relationship between exchange rate uncertainty and political risk. Due to nonlinearities in time series, the present research is established in nonlinear settings. Equation 8 indicates the nonlinear functional form of the model for macroeconomic uncertainty, and for political risk, this study retains the model in linear form (see equation 9).

$$FDIG = f(FDIG_{t-1}, MKTSIZE, INF, TO, ER, LR, EAP, IQ, RRI, INP, UER^{+}, UER^{-}) \quad (8)$$

$$FDIG = f\left(FDIG_{t-1}, MKTSIZE, INF, TO, ER, LR, EAP, IQ, RRI, INP, \overrightarrow{PR}\right) \quad (9)$$

Following the empirical work of (Raza et al., 2016; Koutroulis et al., 2016; Katrakilidis & Trachanas, 2012; Ibrahim, 2015; Dhaoui et al., 2017) Authors focusing on the asymmetric relationship between exchange rate uncertainty and political risk in FDI; then our model will be followed.

as.

$$\Delta FDIG_{it} = \alpha_0 + \alpha_1 \Delta FDIG_{t-1} + \alpha_2 \Delta MKTSIZE_{it} + \alpha_3 \Delta INF_{it} + \alpha_4 \Delta TO_{it} + \alpha_5 \Delta ER_{it} + \alpha_6 \Delta LR_{it} + \alpha_7 \Delta EAP_{it} + \alpha_8 \Delta IQ_{it} + \alpha_9 \Delta RRI_{it} + \alpha_{10} \Delta NRA_{it} + \alpha_{11} \Delta INP_{it} + \theta_1 \Delta UER_{it}^{+} + \theta_2 \Delta UER_{it}^{-} \quad (10)$$

$$\Delta FDIG_{it} = \alpha_0 + \alpha_1 \Delta FDIG_{t-1} + \alpha_2 \Delta MKTSIZE_{it} + \alpha_3 \Delta INF_{it} + \alpha_4 \Delta TO_{it} + \alpha_5 \Delta ER_{it} + \alpha_6 \Delta LR_{it} + \alpha_7 \Delta EAP_{it} + \alpha_8 \Delta IQ_{it} + \alpha_9 \Delta RRI_{it} + \alpha_{10} \Delta NRA_{it} + \alpha_{11} \Delta INP_{it} + \delta_1 \Delta \overrightarrow{PR}(S))_{it}^{+} + \delta_2 \Delta \overrightarrow{PR}(S))_{it}^{-} \quad (11)$$

The asymmetric effect of exchange rate uncertainty and political risk is incorporated by positive changes UER^{+} and negative changes UER^{-}

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respectively. Whereas UER^{+} and UER^{-} are the partial sums of positive and negative changes in exchange rate uncertainty.

Results and Discussion

Dynamic panel GMM estimator results for model specification are displayed in Table 6.1 which confirms that most variables display significance in line with their anticipated trends, as previously outlined. It is particularly worth noting that the lagged dependent variable FDI_{t-1} consistently demonstrates a positive and statistically significant impact across all specified models. This suggests that countries that attract substantial FDI inflows will likely continue attracting even more direct investments from foreign sources.

The relationship between market size and FDI is notably positive across the various models (see Table 6.1). The positive correlation signifies that an increase in market size directly leads to increased FDI inflows in the East Asian region. The expected outcomes remain consistent even in the face of external shocks such as macroeconomic or political events. This indicates that market size expansion remains critical in attracting FDI to a country.

Furthermore, inflation has a statistically significant negative impact on FDI inflows in East Asia (Table 6.1). It implies that in an unstable macroeconomic and political environment, a surge in inflation discourages foreign investors from investing in the host nation. The reasoning behind this result is that an increase in the price level impedes FDI inflows when inflation is high. High inflation leads to an economic slowdown because the reduced purchasing power caused by inflation diminishes aggregate demand in the market. People with low purchasing power may be able to purchase fewer products and services, resulting in lower demand for them. It led to a decrease in GDP. As a result, foreign investors tend to minimize their investments in certain countries to avoid the risk of their invested capital failing to achieve the desired profit (Kiat, 2008; Hong, 2020).

Another factor to consider is trade openness, which positively and statistically significantly influences FDI, as demonstrated in Table 6.1. The result is

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aligned with the expected sign. Multiple reasons support the idea that trade openness can significantly impact FDI. Furthermore, the relationship between the exchange rate and FDI inflow must be clarified further. As mentioned in the expected sing table, there is an ambiguous association between the two variables. Various studies have reported different results. Some studies have found a negative relationship (Cambazoğlu & Güneş, 2014), whereas others have found a positive association (Bayoumi et al., 1996). However, most literature has found no relationship between exchange rates and FDI (Alba et al., 2010). According to Table 6.1, the results indicate that the exchange rate has an insignificant negative effect on FDI in East Asia. This insignificant relationship suggests that there is no connection between the exchange rate and FDI.

The literacy rate is a crucial factor influencing FDI inflow. Studies suggest that the literacy rate positively correlates with FDI from the first to the sixth model across all uncertainty scenarios. However, all models were statistically insignificant, with the expected signs (see Table 6.1). This result indicates that despite an increase in the literacy rate of host countries, it does not attract international investors because of the unstable situation of macroeconomics and politics. Furthermore, an Economically Active Population (EAP) proxied by labor force availability has a positive and statistically insignificant impact on FDI in East Asia. The EAP does not correlate with FDI inflows under uncertain economic and political situations (see Table 6.1).

Moreover, infrastructure quality plays a crucial role in attracting FDI; well-developed infrastructure enhances the appeal of overseas investors, enabling businesses to operate with maximum efficiency. Surprisingly, this study reveals that higher infrastructure quality has a detrimental impact on FDI inflow under various uncertainty circumstances, including political and macroeconomic risks. Notably, the statistical significance of East Asia from model-1 to model-6 at the 1 percent level (refer to Table 6.1) is different from

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expectations. This finding suggests that foreign investors may still need to be convinced to invest in the host country under uncertain conditions, even with improved infrastructure quality. This conclusion aligns with the prior research by Amune and Ogunjimi (2019).

The return-on-investment rate significantly positively impacts the FDI inflow in East Asia, as shown in Table 6.1, with a statistical significance of 1%. This result was consistent with the expected outcomes. These findings indicate that the East Asian market offers attractive investment returns despite economic or political uncertainty. While short-term risks exist, investors recognize promising investment opportunities in the region. The results are consistent across Tables 6.1

Moreover, a dummy variable examining the presence of natural resources such as oil or minerals was included, as the availability of these resources can lead to FDI inflows. However, the analysis revealed that the presence of natural resources has a negative impact on FDI in East Asia, as shown in Table 6.1. The results for East Asia were not statistically significant across Models 1–6. These insignificant associations indicate that an increase in natural resources does not affect FDI inflow. This outcome aligns with prior research conducted by Asiedu (2013).

The econometric model also considers the investment profile to measure investment risk. The results show an insignificant positive relationship between investment profiles and FDI inflows, as shown in Table 6.1. This finding suggests that the investment profile does not significantly influence FDI inflows under uncertain conditions, such as exchange rate fluctuations or political risks.

This study investigates the asymmetrical connection between exchange rate uncertainty and FDI inflows. The base model (eq-6) is transformed into a non-linear framework (eq-10) by incorporating partial sums of exchange rate uncertainty changes into positive UER^{+} and negative UER^{-} variables in Model-1. Positive uncertainty signifies a "progressive shock," while negative

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uncertainty indicates a "bad shock." The results reveal that positive uncertainty has an insignificant positive impact on FDI inflow, whereas negative uncertainty significantly reduces FDI inflow. It suggests that when the local currency unexpectedly devalues against the foreign currency due to exchange rate volatility, foreign investors, being risk-averse, may be reluctant to invest in East Asian countries (see Table 6.1). Furthermore, the uncertainty surrounding a vector variable of political risk in a country can indicate either political stability (positive uncertainty) or instability (negative uncertainty). In East Asia, research findings suggest that only positive uncertainty related to external conflict, internal conflict, and law and order significantly positively influences FDI inflow. It implies that investments in Eastern countries are directly encouraged due to the effective management of political risks such as external conflict, internal conflict, and law and order (see Table 6.1). The other examined factors, such as corruption and bureaucratic quality, showed no significant impact on FDI inflow in the region.

Table 6.1: Arellano-Bond GMM Estimation Results Using Asymmetric Exchange Rate Uncertainty and Particular Measures of Political Instability in East Asia

Dependent Variable: Real FDI/GDP						
Variable	**Model-1**	**Model-2**	**Model-3**	**Model-4**	**Model-5**	**Model-6**
Lagged FDI	0.5571***	0.6101***	0.5741***	0.5960***	0.0227***	0.0567***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Market size	0.309***	0.2115***	0.1912	0.2871***	0.2447***	0.2972***
	(0.0000)	(0.0007)	(0.0053)	(0.0000)	(0.0001)	(0.0000)
Inflation	-0.0578***	-0.026***	-0.0081*	-0.020***	-0.007***	-0.0195***
	(0.0061)	(0.0040)	(0.0726)	(0.0008)	(0.0078)	(0.0003)
Trade Openness	0.3141***	0.4314***	0.2975***	0.3693***	0.2994***	0.3131***
	(0.0003)	(0.0000)	(0.0004)	(0.0003)	(0.0003)	(0.0003)
Exchange Rate	-0.0265	-0.0245	0.0329	-0.0211	0.0069	-0.0280
	(0.1260)	(0.1464)	(0.2072)	(0.2325)	(0.7575)	(0.1279)

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Literacy Rate	0.7562*** (0.0001)	0.4216** (0.0295)	0.4013* (0.0526)	0.7167*** (0.0001)	0.5837** (0.0023)	0.7223*** (0.0000)
Economically Active Population	0.1089 (0.2894)	0.0964 (0.3305)	0.0652 (0.5194)	0.1012 (0.3351)	0.0870 (0.3957)	0.1075 (0.3018)
Infrastructure Quality	-0.105*** (0.0000)	-0.056*** (0.0035)	-0.063*** (0.0007)	-0.085*** (0.0000)	-0.072*** (0.0001)	-0.082*** (0.0001)
Rate of Return on Investment	2.885*** (0.0001)	1.6153 (0.0299)	1.293**** (0.0282)	2.6408*** (0.0002)	2.1554*** (0.0039)	2.8596*** (0.0001)
Natural Resource Availability	-0.1325 (0.2462)	-0.0350 (0.7517)	-0.2470 (0.1214)	-0.0412 (0.7231)	-0.0979 (0.4829)	-0.0647 (0.6054)
Investment Profile	0.1102 (0.2970)	0.0831 (0.3934)	0.0002 (0.9979)	0.0826 (0.4440)	0.0174 (0.8605)	0.0315 (0.7554)
Uncertainty Variable	**Exchange Rate**	**External Conflict**	**Internal Conflict**	**Corruption**	**Law and Order**	**Bureaucratic Quality**
Positive	0.0158 (0.1950)	0.0304* (0.0793)	0.0462** (0.0306)	0.0223 (0.3068)	0.0482* (0.0703)	0.0313 (0.7398)
Negative	-0.0197** (0.0321)	-0.0061 (0.6857)	-0.0035 (0.8155)	-0.0001 (0.9992)	-0.0019 (0.9190)	-0.0335 (0.6064)
Observation	116	116	116	116	116	116
Countries	04	04	04	04	04	04
Sargan Test	0.3557	0.2662	0.2021	0.2170	0.1224	0.1740
2nd Order Serial Correlation Test	0.6640	0.6262	0.6405	0.6315	0.6147	0.6160
R-Squared	0.7164	0.7330	0.7262	0.7067	0.7163	0.7045

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Notes: The standard errors are exhibited in parentheses with symbols (*, **, and ***) indicating significance levels of 0.10, 0.05, and 0.01 respectively. In the Sargan test, the null hypothesis tests the instruments for validity (p-values are reported). Similarly, the null hypothesis in the second-order serial correlation test examines error does not show second-order serial correlation (p-values are reported).

Conclusion

This study set out to investigate the asymmetric effects of exchange rate uncertainty and political risk on Foreign Direct Investment (FDI) inflows in East Asia from 1990 to 2022. Using advanced econometric techniques such as the ARCH/GARCH model to capture exchange rate volatility and the Arellano-Bond Generalized Method of Moments (GMM) dynamic panel estimator to address potential endogeneity issues, the research offered valuable insights into the nuanced relationship between macroeconomic and political factors and FDI behavior in the region.

The findings confirm that market size, trade openness, and the rate of return on investment remain significant and consistent determinants of FDI inflows in East Asia, even amid external economic and political uncertainties. Inflation, on the other hand, was shown to negatively affect FDI, underscoring the importance of price stability for attracting foreign investment. Interestingly, infrastructure quality, typically regarded as a key driver of FDI, exhibited a statistically significant negative relationship under uncertain conditions. This suggests that in the presence of heightened economic and political risks, improvements in infrastructure alone may not be sufficient to secure investor confidence.

The analysis of asymmetric effects of exchange rate uncertainty revealed that while positive shocks (currency appreciation or stabilization) had an insignificant impact on FDI, negative shocks (currency depreciation or volatility spikes) significantly discouraged foreign investment. This finding highlights the risk-averse nature of multinational corporations (MNCs), who

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are sensitive to currency instability when considering long-term investment commitments in East Asian economies. In terms of political risk components, the results demonstrate that positive improvements in external conflict management, internal stability, and law and order significantly encourage FDI inflows, while negative developments in these areas generally deter investment, though not always at statistically significant levels. Notably, corruption control and bureaucratic quality improvements did not exhibit significant effects on FDI inflows, suggesting that while governance matters, investors may prioritize macro-political stability over gradual institutional reforms in volatile contexts.

Overall, the study underscores the importance for East Asian policymakers to maintain macroeconomic stability, foster predictable exchange rate regimes, and manage political risks effectively to sustain their competitive edge in attracting FDI. While structural reforms and infrastructure investments are necessary for long-term growth, they must be complemented by robust economic and political risk management strategies to reassure foreign investors.

This research contributes to the literature by offering a nonlinear, asymmetric framework for assessing the impacts of uncertainty on FDI, an approach rarely applied in East Asian contexts. It highlights the differentiated responses of investors to positive and negative shocks, providing a more realistic reflection of investment behavior in dynamic, high-growth but high-risk environments.

Future research could expand the scope by including more countries from the broader Asia-Pacific region or examining sector-specific FDI flows to identify industry-level sensitivities to macroeconomic and political risks.

References

Acemoglu, D., Johnson, S., & Robinson, J. A. (2005). Institutions as a fundamental cause of long-run growth. Handbook of economic growth, 1, 385-472.

Volume. 4 Issue No. 3 (2025)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Ajami, R. and Barniv, R. (1984) 'Utilizing economic indicators in explaining FDI in the US', Management International Review, Vol. 24, pp.16–26.

Alba, J. D., Wang, P., & Park, D. (2010). The impact of exchange rate on FDI and the interdependence of FDI over time. The Singapore Economic Review, 55(04), 733-747.

Alemu, A. M. (2015). The Nexus between Governance Infrastructure and the Ease of Doing Business in Africa. In Comparative Case Studies on Entrepreneurship in Developed and Developing Countries (pp. 110-131). IGI Global.

Alfaro, L., Chanda, A., Kalemli-Ozcan, S., & Sayek, S. (2004). FDI and economic growth: the role of local financial markets. Journal of International Economics, 64(1), 89-112.

Amune, B. O., & Ogunjimi, J. (2019). Impact of Infrastructure on FDI in Nigeria: An Autoregressive Distributed Lag (ARDL) Approach.

Andinuur, J. A. M. E. S. (2013). Inflation, FDI and economic growth in Ghana (Doctoral dissertation, University of Ghana).

Arellano, M. (2003). Panel data econometrics. OUP Oxford.

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. The review of economic studies, 58(2), 277-297.

Arrow, K. J. (1971). The theory of risk aversion. In Essays in the theory of risk-bearing (pp. 90-120). Markham Publishing Company.

Asamoah, M. E., Adjasi, C. K., & Alhassan, A. L. (2016). Macroeconomic uncertainty, FDI and institutional quality: Evidence from Sub-Saharan Africa. Economic Systems, 40(4), 612-621.

Asiedu, E. (2002). "On the determinants of FDI to developing countries: is Africa different?" World Development, vol. 30, No. 1, pp. 107-19.

Volume. 4 Issue No. 3 (2025)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Asiedu, E. (2006). FDI in Africa: The role of natural resources, market size, government policy, institutions and political instability. World economy, 29(1), 63-77.

Asiedu, E. (2013). FDI, natural resources and institutions. International Growth Centre, 47.

Azam, M., Khan, M. A., & Iqbal, N. (2012). Impact of political risk and uncertainty on FDI in South Asia. Transition Studies Review, 19, 59-77.

Balaban, S., Živkov, D., & Milenković, I. (2019). Impact of an unexplained component of real exchange rate volatility on FDI: Evidence from transition countries. Economic Systems, 43(3-4), 100719.

Baltagi, B. H. (2005). Econometric Analysis of Panel Data. John Wiley & Sons.

Baniak, A., Cukrowski, J., & Herczynski, A. J. (2005). On the determinants of FDI in transition economies. Problems of economic transition, 48(2), 6-28.

Barrell, R., Gottschalk, S., & Hall, S. G. (2003). FDI and exchange rate uncertainty in imperfectly competitive industries (No. 220). National Institute of Economic and Social Research.

Bashir, M. F., & Xu, C. (2014). Impact of political freedom, economic freedom and political stability on economic growth. Journal of Economics and Sustainable Development, 5(22), 59-67.

Bayoumi, M. T., Isard, M. P., Symansky, M. S. A., & Ito, T. (1996). Exchange rate movements and their impact on trade and investment in the APEC region. International Monetary Fund.

Beck, P. J., & Maher, M. W. (1986). A comparison of bribery and bidding in thin markets. Economics letters, 20(1), 1-5.

Bénassy-Quéré, A., Coupet, M., & Mayer, T. (2007). Institutional determinants of FDI. World economy, 30(5), 764-782.

Volume. 4 Issue No. 3 (2025)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Bénassy-Quéré, A., Fontagné, L., & Lahrèche-Révil, A. (2001). Exchange-rate strategies in the competition for attracting FDI. Journal of the Japanese and international Economies, 15(2), 178-198.

Bénassy-Quéré, A., Fontagné, L., & Lahrèche-Révil, A. (2005). How does FDI react to corporate taxation?. International tax and public finance, 12, 583-603.

Bennett, P. D., & Green, R. T. (1972). Political instability as a determinant of direct foreign investment in marketing. Journal of Marketing Research, 9(2), 182-186.

Bernanke, B. S. (1983). Irreversibility, uncertainty, and cyclical investment. The Quarterly Journal of Economics, 98(1), 85-106.

Bhandari, R., & Upadhyaya, K. P. (2010). Panel data evidence of the impact of exchange rate uncertainty on private investment in South-east Asia. Applied Economics, 42(1), 57-61.

Biswas, R. (2002). Determinants of FDI. Review of Development Economics, 6(3), 492-504.

Blanchard, O. J., & Summers, L. H. (1986). Hysteresis and the European unemployment problem. NBER Macroeconomics Annual, 1, 15-78.

Blonigen, B. A. (2005). FDI behavior of multinational corporations. NBER Reporter Online, (Winter 2005/06), 11-14.

Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. Journal of Econometrics, 87(1), 115-143.

Bollen, K. A., & Jones, S. T. (1982). Political instability and FDI: The motor vehicle industry, 1948–65. Social Forces, 60(4), 1070-1088.

Bollerslev, T. (1986). Generalized autoregressive conditional heteroskedasticity. Journal of Econometrics, 31(3), 307-327.

Bond, S. (2002). Dynamic Panel Data Models: A Guide to Micro Data Methods and Practice. Portuguese Economic Journal, 1(2), 141–162.

Volume. 4 Issue No. 3 (2025)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Borensztein, E., De Gregorio, J. and Lee, J.-W. (1998). How does FDI affect economic growth?, Journal of International Economics, 45, pp. 115135.

Bulmer, M. G. (1979). Principles of statistics. Courier Corporation.

Busse, M., & Hefeker, C. (2007). Political Risk, Institutions and Foreign Direct Investment. European Journal of Political Economy, 23(2), 397–415.

Caballero, R. J., & Engel, E. M. (1999). Explaining investment dynamics in US manufacturing: A generalized (S,s) approach. Econometrica, 67(4), 783-826.

Cambazoğlu, B., & Güneş, S. (2014). The relationship between foreign exchange rate and FDI in Turkey.

Carruth, A., Hooker, N., & Oswald, A. (2000). Predicting the volatility of the exchange rate: A comparison of the stochastic and deterministic processes. Journal of International Money and Finance, 19(4), 575-593.

Chamberlain, G. (1984). Panel Data. Handbook of Econometrics, 2, 1247-1318.

Chan, K. K., & Gemayel, E. R. (2003, December). Macroeconomic instability and pattern of FDI in the Mena region. In ERF 10th annual conference, Marrakesh, Morocco (Vol. 1618).

Chaudhary, G. M., Shah, S. Z. A., & Bagram, M. M. M. (2012). Do exchange rate volatility effects FDI? Evidence from selected Asian economies. Journal of Basic and Applied Scientific Research, 2(4), 3670-3681.

Chen, K., Nie, H., & Ge, Z. (2019). Policy uncertainty and FDI: Evidence from national elections. The Journal of International Trade & Economic Development, 28(4), 419-428.

Choi, S., Furceri, D., & Yoon, C. (2021). Policy uncertainty and FDI. Review of International Economics, 29(2), 195-227.

Choong, C. K., & Lam, S. Y. (2010). The determinants of FDI in Malaysia: A revisit. Global Economic Review, 39(2), 175-195.

Volume. 4 Issue No. 3 (2025)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Coudert, V., & Dubert, M. (2005). Does exchange rate regime explain differences in economic results for Asian countries? Journal of Asian Economics, 16(5), 874-895.

Crawford, A. (1996). Measuring the uncertainty of economic variables: The application of ARCH and GARCH models. Economics Letters, 52(3), 209-215.

Daniels, J. P., & VanHoose, D. D. (2005). International monetary and financial economics.

Darby, J., Hallett, A. H., Ireland, J., & Piscitelli, L. (1999). The impact of exchange rate uncertainty on the level of investment. The Economic Journal, 109(454), 55-67.

Del Bo, C. (2009, September). FDI, exchange rate volatility and political risk. In ETSG Conference, September, Rome.

Dhakal, D., Nag, R., Pradhan, G., & Upadhyaya, K. P. (2010). Exchange rate volatility and FDI: Evidence from East Asian countries. International Business & Economics Research Journal (IBER), 9(7).

Dhaoui, A., & Bacha, S, & McMillan. (2017). Investor emotional biases and trading volume's asymmetric response: A non-linear ARDL approach tested in S&P500 stock market. Cogent economics & finance, 5(1), 1274225.

Dixit, A., & Pindyck, R. S. (1994). Investment under uncertainty. Princeton University Press.

Dixit, Avinash and Pindyck, Robert. Investment Under Uncertainty. Princeton University Press, Princeton, New Jersey (1994).

Donaubauer, J., Meyer, B., & Nunnenkamp, P. (2016). Aid, infrastructure, and FDI: Assessing the transmission channel with a new index of infrastructure. World Development, 78, 230-245.

Dragusha, S. B. (2016). The Impact of Political Risk on FDI. Iliria International Review, 4(2), 73-92.

Volume. 4 Issue No. 3 (2025)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Dunning, J. H., & Lundan, S. M. (2008). Multinational enterprises and the global economy. Edward Elgar Publishing.

Edwards, S. (1990). Capital flows, FDI, and debt-equity swaps in developing countries. NBER Working Paper No. 3497.

Engle, R. F. (1982). Autoregressive conditional heteroscedasticity with estimates of the variance of United Kingdom inflation. Econometrica: Journal of the Econometric Society, 987-1007.

Eregha, P. B. (2019). Exchange rate, uncertainty and FDI inflow in West African monetary zone. Global Business Review, 20(1), 1-12.

ESCAP, U. (2020). Regional integration for sustainable development in Asia and the Pacific: ESCAP digital and sustainable regional integration index and indicator framework: DigiSRII 1.0.

Gastanaga, V. M., Nugent, J. B., & Pashamova, B. (1998). Host country reforms and FDI inflows: How much difference do they make?. World development, 26(7), 1299-1314.

Globerman, S., & Shapiro, D. (2002). Global foreign direct investment flows: The role of governance infrastructure. World Development, 30(11), 1899-1919.

Gottschalk, S., & Hall, S. (2008). FDI and exchange rate uncertainty in South-East Asia. International Journal of Finance & Economics, 13(4), 349-359.

Gourieroux, C., Monfort, A., & Renault, E. (1989). Testing for common roots. Econometrica: Journal of the Econometric Society, 171-185.

Hansen, B. E. (2000). Sample splitting and threshold estimation. Econometrica, 68(3), 575-603.

Hansen, L. P. (1982). Large sample properties of generalized method of moments estimators. Econometrica: Journal of the Econometric Society, 1029-1054.

Hantington, S. (1968). Political order in changing societies. New Haven.

Volume. 4 Issue No. 3 (2025)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Hermes, N., & Lensink, R. (2001). Capital flight and the uncertainty of government policies. Economics letters, 71(3), 377-381.

Hernandez, L., & Montiel, P. J. (2003). Post-crisis exchange rate policy in five Asian countries: Filling in the "hollow middle"?. Journal of the Japanese and International Economies, 17(3), 336-369.

Ho, C. S., & Rashid, H. A. (2011). Macroeconomic and country specific determinants of FDI. The Business Review, 18(1), 219-226.

Hodder, J. E. (1982). Exposure to exchange-rate movements. Journal of international Economics, 13(3-4), 375-386.

Hong, T. Y., & Ali, D. H. A. (2020). The Impact of Inflation Towards FDI in Malaysia And Iran. International Journal of Academic Research in Business and Social Sciences, 10(6), 210-216.

Ibrahim, M. H. (2015). Oil and food prices in Malaysia: a nonlinear ARDL analysis. Agricultural and Food Economics, 3, 1-14.

IFS (2022). International Financial Statistics (IFS) [Database]. International Monetary Fund.

Jeanneret, A. (2007). „FDI and Exchange Rate Volatility: A Non-Linear Story" (No. 399). Swiss Finance Institute Working Paper.

Jensen, N. (2008). Political risk, democratic institutions, and FDI. The Journal of Politics, 70(4), 1040-1052.

Julio, B., & Yook, Y. (2016). Policy uncertainty, irreversibility, and cross-border flows of capital. Journal of International Economics, 103, 13-26.

Jun, K. W., & Singh, H. (1996). The determinants of FDI in developing countries. Transnational corporations, 5(2), 67-105.

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. Econometrica, 47(2), 263-292.

Katrakilidis, C., & Trachanas, E. (2012). What drives housing price dynamics in Greece: New evidence from asymmetric ARDL cointegration. Economic Modelling, 29(4), 1064-1069.

Khan, M. M., & Akbar, M. I. (2013). The impact of political risk on FDI.

Volume. 4 Issue No. 3 (2025)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Kiat, J. (2010). The effect of exchange rate and inflation on FDI and its relationship with economic growth in South Africa (Doctoral dissertation, University of Pretoria).

Kim, K. K., & Park, K. S. (2014). Transferring and sharing exchange-rate risk in a risk-averse supply chain of a multinational firm. European Journal of Operational Research, 237(2), 634-648.

Kim, S. (2007). Bilateral investment treaties, political risk and FDI. Asia Pacific Journal of Economics & Business, 11(1), 6-24.

Kiyota, K., & Urata, S. (2004). Exchange rate, exchange rate volatility and FDI. World Economy, 27(10), 1501-1536.

Konat, G. (2022). Impact of Political Risk on FDI with Fourier Approach: The Case of Turkiye. Alphanumeric Journal, 10(2), 187-196.

Leff, N. H. (1964). Economic development through bureaucratic corruption. American behavioral scientist, 8(3), 8-14.

Lemi, A., & Asefa, S. (2003). FDI and uncertainty: Empirical evidence from Africa. African Finance Journal, *5*(1), 36-67.

Li, C., Liu, H., & Jiang, Y. (2015). Exchange rate risk, political environment and Chinese outward FDI in emerging economies: A panel data analysis. Economics, 3(5-6), 145-155.

Lim, S. (2007). Bilateral investment treaties, political risk and FDI. Asia Pacific Journal of Economics & Business, 11(1), 6-24.

Makoni, Patricia Lindelwa. (2018). FDI and Trade Openness: The Case of Emerging African Economies. Journal of Ac-counting and Management 8: 141–52.

Mauro, P. (1998). Corruption and the composition of government expenditure. Journal of Public economics, 69(2), 263-279.

Mercereau, B. (2005). FDI Flows to Asia: Did the Dragon Crowd Out the Tigers? International Monetary Fund Working Paper, WP/05/189.

Myers, S. C. (1977). Determinants of corporate borrowing. Journal of Financial Economics, *5*(2), 147-175.

Volume. 4 Issue No. 3 (2025)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Nagaraj, R. (2003). Foreign direct investment in India in the 1990s: Trends and issues. *Economic and Political Weekly, 38*(17), 1701-1712

Nazeer, A. M., & Masih, M. (2017). Impact of political instability on FDI and Economic Growth: Evidence from Malaysia.

Nguyen, C. H. (2021). Labor force and FDI: Empirical evidence from Vietnam. The Journal of Asian Finance, Economics, and Business, 8(1), 103-112.

Nigh, D. (1985). The effect of political events on United States direct foreign investment: A pooled time-series cross-sectional analysis. Journal of International Business Studies, 16, 1-17.

Nigh, D. (1986). Political events and the FDI decision: An empirical examination. Managerial and Decision Economics, 7(2), 99-106.

Obiamaka P.E., Onwumere, J.U., Okpara, G.C. (2011). FDI and economic growth in Nigeria: A granger causality analysis, International Journal of Current Research, 3 (11), pp. 225-232.

Ogaki, M. (1993). 17 Generalized methods of moments: Econometric applications.

Ogbonna, O. E., Ogbuabor, J. E., Manasseh, C. O., & Ekeocha, D. O. (2022). Global uncertainty, economic governance institutions and FDI inflow in Africa. Economic Change and Restructuring, 55(4), 2111-2136.

Omankhanlen, A.E. (2011). The Effect of Exchange Rate and Inflation on FDI and its relationship with Economic Growth in Nigeria, Economics and Applied Information, 1, pp. 5-16

Parkinson, J. M. (1987). The EMH and the CAPM on the Nairobi Stock Exchange. East African Economic Review, 13, 105-110.

Pradhan, G., Schuster, Z., & Upadhyaya*, K. P. (2004). Exchange rate uncertainty and the level of investment in selected South-east Asian countries. Applied Economics, 36(19), 2161-2165.

Prasad, E., Rogoff, K., Wei, S. J., & Kose, M. A. (2003). Effects of financial globalization on developing countries: some empirical evidence.

Volume. 4 Issue No. 3 (2025)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

In India's and China's recent experience with reform and growth (pp. 201-228). London: Palgrave Macmillan UK.

PRS Group. (2022). Explore our products: ICRG. Retrieved from https://www.prsgroup.com/explore-our-products/icrg/

Qamruzzaman, M., & Jianguo, W. (2018). Nexus between financial innovation and economic growth in South Asia: evidence from ARDL and nonlinear ARDL approaches. Financial innovation, 4(1), 1-19.

Rajan, R. S. (2012). Management of exchange rate regimes in emerging Asia. Review of Development Finance, 2(2), 53-68.

Ramkishen, S. R., & Rabin, H. (2009). Understanding Bilateral FDI Flows in Emerging Asia. Institute of South Asian Studies, University of Singapore. ISAS Insight, (81).

Ramzan, M. (2021). Symmetric impact of exchange rate volatility on FDI in Pakistan: do the global financial crises and political regimes matter? Annals of Financial Economics, 16(04), 2250007.

Rashid, M., Looi, X. H., & Wong, S. J. (2017). Political stability and FDI in the most competitive Asia Pacific countries. Journal of Financial Economic Policy.

Raza, H., Iraqi, K. M., Zaidi, S. S. Z., & Raza, A. (2015). The Law-and-Order Situation and Its Impact on FDI in Pakistan. International Journal of Management Sciences, 5(11), 736-746.

Rios-Morales, R., Gamberger, D., Šmuc, T., & Azuaje, F. (2009). Innovative methods in assessing political risk for business internationalization. Research in International Business and Finance, 23(2), 144-156.

Rodrik, D. (1999). The new global economy and developing countries: Making openness work. Overseas Development Council.

Roodman, D. (2009). How to do xtabond2: An introduction to difference and system GMM in Stata. The Stata Journal, 9(1), 86–136.

Volume. 4 Issue No. 3 (2025)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Root, F. and Ahmed, A. (1979) 'Empirical determinants of manufacturing direct investment in developing countries', Economic Development and Cultural Change, Vol. 27, pp.751–767.

Ruiz, I., & Pozo, S. (2008). Exchange rates and US direct investment into Latin America. Journal of International Trade and Economic Development, 17(3), 411-438.

Sachs, J. D., & Warner, A. (1995). Natural resource abundance and economic growth.

Saha, B. (2001). Red tape, incentive bribe, and the provision of subsidy. Journal of Development Economics, 65(1), 113-133.

Sandmo, Agnar. (1971). On the Theory of the Competitive Firm Under Price Uncertainty. The American Economic Review, 61, 1, (1971): 65-73.

Schmidt, C. W., & Broll, U. (2009). Real exchange-rate uncertainty and US FDI: an empirical analysis. Review of World Economics, 145, 513-530.

Schmidt, P., Stutzman, S., & Zimmer, D. (2009). Forecasting economic volatility with GARCH models: An application to exchange rates and interest rates. Journal of Economics and Business, 61(5), 374-392.

Schneider, F., & Frey, B. S. (1985). Economic and political determinants of FDI. World development, 13(2), 161-175.

Servén, L. (1998). Macroeconomic uncertainty and private investment in developing countries: an empirical investigation. Available at SSRN 597249.

Servén, L. (2003). Real-exchange-rate uncertainty and private investment in LDCs. Review of Economics and Statistics, 85(1), 212-218.

Shin, Y., Yu, B., & Greenwood-Nimmo, M. (2014). Modelling asymmetric cointegration and dynamic multipliers in a nonlinear ARDL framework. In R. Sickles & W. Horrace (Eds.), Festschrift in honor of Peter Schmidt (pp. 281-314). Springer.

Sokchea, K. (2006, December). Bilateral Investment Treaties, Political Risk, and FDI. Social Science Research Network (SSRN).

Volume. 4 Issue No. 3 (2025)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Solomon, B. (2007). Three essays on the impacts of risk and uncertainty on foreign direct investment (FDI) and remittance flows into developing countries. Western Michigan University.

Sung, H., & Lapan, H. E. (2000). Strategic FDI and exchange-rate uncertainty. International Economic Review, 41(2), 411-423.

Trevino, L. J., & Upadhyaya, K. P. (2003). Research notes foreign aid, fdi and economic growth: evidence from Asian countries. Board of advisers' chairperson, 12(2), 119.

Tse, Y. K., & Tsui, A. K. C. (2002). A multivariate generalized autoregressive conditional heteroscedasticity model with time-varying correlations. Journal of Business & Economic Statistics, 20(3), 351-362.

Tuman, J. P., & Emmert, C. F. (1999). Explaining Japanese FDI in Latin America, 1979-1992. Social science quarterly, 539-555.

Ullah, S., Haider, S. Z., & Azim, P. (2012). Impact of exchange rate volatility on FDI: A case study of Pakistan. Pakistan economic and social review, 121-138.

UNCTAD. (2022). World Investment Report 2022. https://unctad.org/publication/world-investment-report-2022

UNCTAD. 2019. World Investment Report (WIR). Geneva: UNCTAD

Upadhyaya, K. P., Bhandari, R., & Rainish, R. (2011). Exchange rate volatility and FDI in South Asia. International Journal of Economic Policy in Emerging Economies, 4(4), 366-377.

Wheeler, D., & Mody, A. (1992). International investment location decisions: The case of US firms. Journal of International Economics, *33*(1-2), 57-76.

Woo, J. Y., & Heo, U. (2009). Corruption and FDI attractiveness in Asia. Asian Politics & Policy, 1(2), 223-238.

World Bank (2022). World development indicators 2022. The World Bank.

Volume. 4 Issue No. 3 (2025)
Online ISSN: 3006-2047
Print ISSN: 3006-2039

Zaman, Qamar Uz, Donghui Zang, Yasin Gulam, Zaman Shah, and Imran Muhamad. (2018). Trade Openness and FDI Inflows: A Comparative Study of Asian Countries. European Online Journal of Natural and Social Sciences 7: 386–96.

Zhang, B., Ma, J., Khan, M. A., Repnikova, V., Shidlovskaya, K., Barykin, S., & Ahmad, M. S. (2023). The Effect of Economic Policy Uncertainty on FDI in the Era of Global Value Chain: Evidence from the Asian Countries. Sustainability, 15(7), 6131.