Risk dimensions, risk clusters, and foreign direct investments in developing countries

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Abstract
We analyse four risk dimensions of inward FDI alongside economic growth for forty-eight developing countries for the period 2000-2019 using Fixed Effects, and System GMM models. After controlling for potential endogeneity issues, the results show that economic growth and currency rate have robust positive effect on FDI inflows, whereas inflation rate and financial risk have negative impacts. Political risk both at the contemporaneous and lagged terms had inconsistent results. The nexus between FDI and risk dimensions emends significantly with the risk cluster analysis that finds a strong interplay among financial and currency risks having economic growth in the centre. Results suggest that countries with stable economic growth can cover for an extent ('U' shaped relationship) of inflation, currency, and financial risks. The worse possible countries are the ones with unstable political condition, which cannot be mitigated by higher economic growth. We propose a two-layer FDI decision typology that includes country-specific endogenous and non-country specific exogenous factors in primary and secondary layers, respectively. Using a location-risk typology, we relate our discussions on the locational advantage from the eclectic paradigm with the approaches to risk management in international investment.

JEL Code: F2, F23, O1, O2, O43
Keywords: FDI Inflows; Developing countries; FDI decision typology; locational advantage.

1. Introduction

Corporate intention to engage in Foreign Direct Investment (FDI) in developing countries embodies a strategic investment seeking resources, collaboration, domestic market size and risk-free investment (Camarero, Montolio and Tamarit, 2019; Tsaurai, 2018; Dunning, 1980) on one hand, and participating in long-term economic and social performance of the host country on the other hand (Iamsiraroj, 2016). While developing host countries potentially benefit immensely from FDI inflows (Kariuki, 2015), there are increasing number of challenges, such as the choice of the entry modes, political stability, foreign exchange volatility, and financial market instability (Asiamah, Ofori and Afful, 2019; Raff, Ryan and Stähler, 2012). Multinational Enterprises (MNEs) tend to re-evaluate their investment strategies prior to investments due to the additional risks that are associated with international business dealings. In general, MNEs are likely to invest in destination countries where they can maximize returns on their

investments, while minimizing risks. This suggests that foreign investment will be negatively affected if the host country fail to ensure optimal or a conducive environment for the MNEs to operate (Porter, 1990). As many of these risk factors are location specific (Dunning, 1973), poor management of the risk factors may significantly reduce FDI inflows in developing countries.

Figure 1 provides interesting preliminary evidence on FDI inflows by developing and developed economies. Global FDI inflows have been following a downward trend since 2017. This declining trend in FDI inflows could be attributed to prolonged policy uncertainty, geopolitical unrest, and poor governance mechanism (Cavusgil et al., 2020).

Motivation for this study comes from two factors. Firstly, as shows in Figure 1, developing countries have received a consistent supply of foreign investment, while the same has been declining in the developed world. Secondly, developing countries have gone through several geopolitical, financial, and social risk factors in the last twenty years that include the likes of the global financial crisis, China trade war, and Arab Spring. Given the importance of and limited research on risk and FDI nexus in developing countries, this study intends to investigate the influence of risk dimensions on FDI inflows in developing countries.

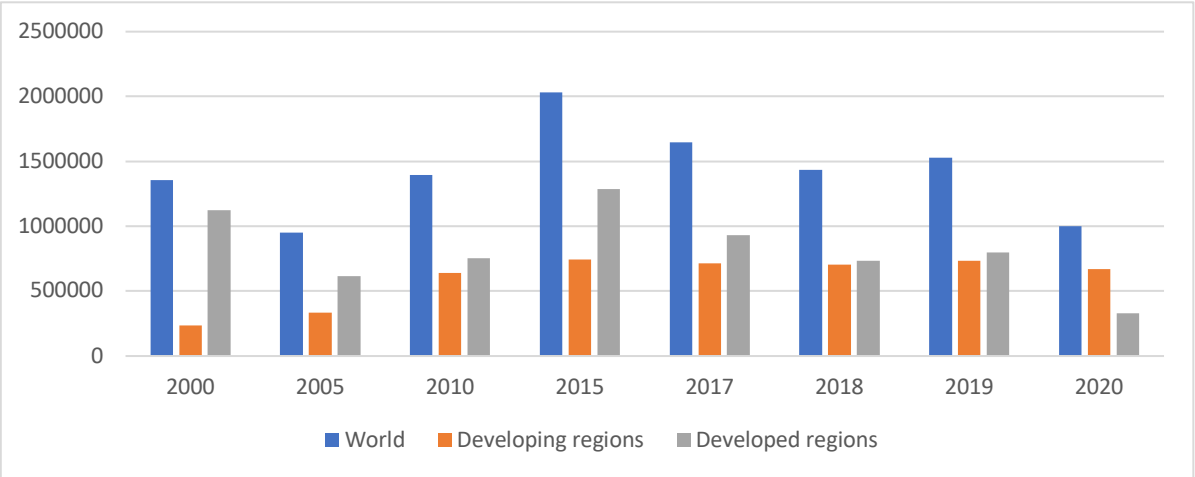

Figure 1: FDI inflows in the world, developed, and developing countries (in Million USD)
Source: UNCTAD (2021).

Host country market size, economic growth, political stability, institutional quality, and trade openness are some of the common determinants of FDIs in developing as well as developed economies (Chanegriha, Stewart and Tsoukis, 2017; Rashid, Xuan, and Shao, 2017; Rashid et al., 2021). Considering the riskiness of international investment, a growing literature found country risk (Rafat and Farahani, 2019; Cavusgil et al., 2020), political risk (Busse and Hefeker, 2007; Rashid, Looi and Jye, 2017), 'dissipation effect' or the fear of diffusion of firms' assets (Siotis, 1999), and transparency and corruption (Iloie, 2015; Barry and DiGiuseppe, 2018) as determinants of inward FDI. While political risk is noted as the most primordial form of risk affecting foreign investment decision, recent studies identify expropriation risk (Akhtaruzzaman, Berg and Hajzler, 2017) and oil price shock (Malik et al., 2020) as emerging risks for developing economies. However, none of the above studies has accentuated uniquely on the risk dimensions in developing countries. This study is undertaken to emphasize on the risk dimensions of FDI, not just the common determinants of FDI inflow.

Some of these risks are not particularly appealing for the developed countries, at least in the short- and medium-terms. Developed countries are generally characterised by stable political condition, consistent currency value, strong financial market activities, and low inflation rate. These qualities help MNEs build an effective risk mitigation ability (Buckley et al., 2020). Hence, FDIs flowing into relatively unstable and risky developing countries carry strong sign of behavioural factors (Buckley et al., 2016) that surmount traditional resource-seeking motives of FDI. Inward FDI in developing and emerging countries are often hindered by unstable political, currency and economic conditions (Rashid et al, 2017; Rashid et al., 2021).

Despite the importance of effective risk management for international attractiveness of FDI inflows in developing countries, little is known about the link between different risk factors, risk clusters, and FDI inflows in developing economies. Our study differs from existing

studies in the literature that relates to the determinants of FDI inflows on the following grounds. Firstly, we investigate individual risk dimensions of developing countries having an impact on FDI inflow. Secondly, this study examines the risk clusters where risk dimensions are assumed to dynamically interacts with each other, leading to a complex interplay in risk-FDI nexus. These risk clusters help policymakers to rebrand their country to attract new FDIs, while the same can be used by the MNE managers to plan for their next low risky FDI destination.

This study uses data from 48 developing countries over the period 2000 to 2019, which yields a total of 960 balanced observations. We have considered political risk, financial risk, currency exchange risk, inflation risk and economic growth as determinants of FDI inflows as captured using FDI as a percentage of GDP. We employed Fixed Effects and System GMM tests for the empirical analysis. Among the determinants of FDI inflows, fixed effects models, with and without lagged terms, show that the first lag of FDI, economic growth, currency risk, financial risk and political risk consistently influenced FDI inflows. Inflation rate risk was insignificant across all FE models.

We also found that the parameter estimates obtained from the dynamic models using System-GMM are largely in line with the theoretical rationales of the study, indicating a stronger dynamic interaction between the risk dimensions and FDI inflow. We have conducted a risk cluster analysis using a [1 x 1] moderation of the risk factors. Our results indicate that financial (FINR) and currency (CURR) risks are more dominant than the inflation (INFR) and political (POLR) risks. Also, economic growth (ECOG) stabilizes most international risk dimensions of FDI. Hence, countries with stable economic growth would possibly see higher FDI even if they are suffering from risk components. We proposed two FDI decision typologies to understand the importance of the risk in international investment.

The remainder of the study proceeds as follows. The next section reviews a related literature. Section 3 explains the data sources and methodological approach. Section 4 discusses the results, and the final section concludes.

2. Literature Review

2.1 Theory

FDIs are one of the frequently discussed economic health indicators in developing countries. On one side, FDI inflow builds reputation for the policymakers as the country is chosen by MNEs as an investment destination, on the other hand, the intended investment builds a profusion of risk dimensions for the company. While earlier research found companies earning profits without competition (Hymer, 1970), the absence of perfect market in international investment raised the bar of strategic planning. Even though the technological advantage of the European firms helped them to reign over the U.S. firms (Graham and Krugman, 1989), inefficient corporate control may result in technological leakage, transferring the advantage to the competitors (Södersten and Reed, 1994). Contrary to the belief of the perfect competitive market (MacDougall, 1960), companies face significant challenges while investing across border in terms of restricted capital flows, political and financial risks.

In general, most FDIs have been either resource-seeking (Dunning, 1980) or strategic, which is a combination of resources-, market-, and efficiency-seeking motives (Narula and Dunning, 2010). Therefore, the role played by management experience and behavioural biases in choosing the right strategy cannot be overlooked. With the increase on global investment risk, the optimal choice of the new investment location is largely influenced by how efficiently the company can mitigate emerging risks (Buckley et al., 2020). Managers often invest in

countries, especially in developing economies, with relatively higher risk, not only to seek long-term benefits, but also because of the belief that their companies have better risk mitigating strength. This behavioural explanation to risk-based FDIs is also supported by Dunning's (1973) eclectic paradigm, where international investment takes place based on ownership-specific, location-specific, and internalization advantages. Due to recent expansion of regional FDI policies (Demirbag et al. 2020; Bickenbach, Liu and Nunnenkamp, 2018), Dunning's location advantage combined with the behavioural motives of FDI is suitable to explain the risk dimensions of FDI inflows in developing countries.

2.2 Risk Dimensions and FDI Inflows

Risk is the uncertainty that the actual outcomes would vary from expected outcomes. FDIs face pockets of risks in developing countries. While some risks are common to any international investment, most of these are uniquely location specific. The other challenge lies with the measurement of risk. Due to varied perception, for example, with risk relevant to corruption and institutional control, there are multiple proxies for one risk component. If properly constructed, a risk index should always find a theoretical negative relationship with FDI inflows.

Risk measurement has been an important issue in international business. Country risk is used to represent macro-level risk, which is a single-index risk component that often combines several risk components (e.g., social, economic, and political risks) into one index. However, such a combined risk method is often criticised as MNEs follow a 'region-centric' FDI policy that assumes heterogeneity in risk assessment and mitigation policies (Demirbag, Glaister and Sengupta, 2020; Unver and Erdogan, 2015). Considering potential exogeneity of risks, it is important to look at individual risks. While it is easy to manage one risk index, a single variable always lacks the depth of information needed to examine risks in FDI in

developing countries. Instead of creating a single index that limits information content, we provide risk cluster analysis that considers interplay between risk components. The risk cluster provides an embracive view of risk management to help MNEs in location decision.

(a) Political risk, stability, and terrorism

The most common proxy for political risk for MNEs has been the World Bank's 'political stability and absence of terrorism index'. The index is calculated using standard normal distribution having value within the range of '-2.5' to '+2.5' (Kaufmann, Kraay and Mastruzzi, 2010). Quoted from World Bank Blog[1] on the importance of political risk in FDI, "*… these benefits are often what make FDI so sought-after by policy makers. But investors have to consider the return on their investment relative to the risks they are taking, especially political risks such as expropriation, currency convertibility and transfer restrictions, breach of contract by the sovereign, and war and civil disturbance*". Political risk is the single most important factor for MNEs that significantly influences their future cash flows, supply-chain, and human resources policy (Hayakawa et al, 2013). Hence, the higher the level of political instability, the lower the attractiveness of a host country in terms of attracting FDI (Jun and Singh, 1996; Büthe and Milner, 2008).

Political risk as a macro issue may also influence perception about a country through the prism of its future economic health. This is because political risk was found to negatively translate into poorer economic growth (Khan and Akbar, 2013). The link between political risk and FDI was explored using corruption index, as Quazi (2014) reported one-point increase in corruption control resulted in a 30% more FDI inflows in South and East Asian regions. Rashid

[1] Barbour, P., & Alsuhaibani, K. (2014). *Are rates of return in places that are fragile and affected by conflict really higher?.* World Bank Blog, available at https://web.worldbank.org/archive/website01599/blogs.worldbank.org/miga/are-rates-return-places-are-fragile-and-affected-conflict-really-higher.html.

et al. (2017) explored the nexus between political risk and FDI. They found a positive association between political stability and FDI inflows. Conflicting results were also reported in several studies. For instance, political risk was found to be positively associated with FDI inflows (Schneider and Frey, 1985; Edwards, 1990). Studies using another common dimension of political risk which is terrorism activities reported contrary evidence. For example, Ali et al (2017) and Kinyanjui (2014) reported negative link between increase in terrorist activities and FDI inflows for Pakistan and Kenya, respectively.

Political risk is often considered as a subset of country risk. Buckley et al. (2016, p. 132) considered country risk as the "perceived environmental uncertainty", while the political risk was considered as the political constraint index, which defined political risk as the "discretionary policymaking capacity and insufficient checks and balances upon political actors of the host country". Rafat and Farahani (2019) investigated political risk indices by International Country Risk Guide (ICRG) and reported a negative link between political risk and FDI in Iran. Iloie (2015), however, reported no significant relationship between country risk and FDI inflows. Akhtaruzzaman et al. (2017) used expropriation risk to represent the most important political risk components published by the World Bank and reported that one standard deviation reduction in expropriation risk may help increase FDI inflows by 72%. In the absence of empirical work on the alternative models, we follow Akhtaruzzaman et al. (2017) and utilized the political stability data published by the Worldwide Governance Indicators (WGI). The data are easily comparable with other existing studies from developing countries. Based on the way the political stability index is coded by the World Bank, we hypothesize that:

Hypothesis 1: *Lower political risk (better political stability) has a positive impact on FDI inflows in developing countries.*

(b) Appreciation and depreciation of currency rate

Exchange rate (exchange rate of a country with respect to the US Dollar) is often debatable as a macro or countrywide determinant due to its pendulum effect in terms of creating benefits and/or challenges to exports and imports when currency is depreciated and appreciated against a major partner country. However, when viewed as a company-wide variable, MNEs expect the host currency to appreciate at the time of cash flow remittance (Lily et al., 2014). Due to the extensiveness of the exchange rate volatility and its impact on MNE cash flows, most MNEs maintain several strategies, including separate holding company tax adjustment policy or tax heaven subsidiary investment policy. If a corporate tax change in host country has minimal impact on MNEs investment policy, the reason for investing in tax haven subsidiary might be surrounding other issues, including foreign exchange volatility, intellectual property rights, and type of companies (services versus manufacturing) (Jones and Temouri, 2016). Overall, the appreciation and/or depreciation of major currencies such as Great Britain Pound Sterling, and currencies from Germany and France, have significant impact on FDI inflows into the United States (Kohlhagen, 1977).

Considering the impact on developing countries, Jin and Zang (2013) found that the fluctuation of the exchange rate leads to differential levels of FDI inflows into China. Competition and export orientation of the host country may establish connection between the exchange rate and FDI. Higher competition in the Nigerian FDI market revealed a positive connection between Nigerian exchange rate and FDI inflows as investors are typically volatility averse (Obi, 2017). Using export as the dependent variable, exchange rate in Vietnam was found to have a positive relationship in the long-run, but not in the short-run (Nguyen and Do, 2020). The exchange rate was also considered important for the Chinese investment in ASEAN economies (Ma et al., 2020). Khamphengvong, Xia and Srithilat (2018) reported a positive link between the real exchange rate and FDI in Lao PDR. It is worthwhile to note that

the evidence on the interplay between exchange rate and FDI inflows is mixed. For instance, Asiamah et al. (2019) used data from Ghana and found a negative link between exchange rate and FDI inflows. Considering the important role of exchange rate fluctuation on FDI decision, we hypothesize that:

Hypothesis 2: *Appreciation of the host currency (lower currency transfer risk) relative to the US Dollar states a positive connection to FDI inflow*.

(c) Financial risk

Financial risk is the likelihood that a country may fail or is incapable of repaying loans owed to foreign entities. Maintaining financial sustainability is therefore crucial for attracting FDIs in developing countries (Mukhopadhyay and Das, 2019). The risk of a country facing a sudden financial crisis is higher with higher level of financial risk. Foreign investors are likely to be very sensitive towards financial risk given that FDI cannot be easily and/or quickly withdrawn following economic downturn in a host country. Empirical evidence suggests that higher financial risk tends to deter FDI inflows. For instance, Yong et al (2017) reported that debt is negatively associated with FDI inflows in Thailand after the debt level exceeds a certain cut-off point. Due to inconsistent use of measurements, impact of financial risk on FDI inflows is mixed. Using risk point of current account balance, Balan (2019) found that lower financial risk points are positively connected to FDI inflows in the Middle East and North Africa plus Turkey (MENAT – countries). Omoniyi, Alao and Ajibola (2019) reported that external debt is negatively related to economic growth and FDI related innovations with reference to Nigeria. Agyapong and Bedjabeng (2019) reported that external debt is positively associated with financial development. We use external debt to GDP as the proxy for financial risk. At the country level, Hassan, Rashid, and Castro (2016) found that investor sentiment has a positive

impact on FDI inflows in Malaysia. In the absence of consensus on research that relates to financial risk and FDI inflows in developing countries, we hypothesize that:

Hypothesis 3: *Higher financial risk is negatively connected to FDI inflow.*

(d) Inflation risk

Higher inflation rate translates into lower purchasing power and gradual reduction of the domestic market. FDI inflows are likely to lower in the face of a higher rate of inflation in a host country. Due to higher inflation rate, the returns on capital invested currently are likely to be lower in the future. Furthermore, a higher rate of inflation is also associated with economic instability resulting from unsuitable government policies (Macpherson, 2013). For instance, Xaypanya et al., (2015) have found that inflation has a strong negative effect on FDI inflows in the case of ASEAN 3 and ASEAN 5 economies. This suggests that a stable and low level of inflation is associated with a lower uncertainty and higher level of investor confidence. Similarly, Asiamah et al., (2019) have reported that inflation rate is negatively associated with FDI inflows in Ghana. In contrast, Alshamsi et al (2015) did not find a significant relationship between the inflation rate and FDI inflows in the United Arab Emirates. Considering the long-term negative impact of inflation rate risk on FDI inflows, we hypothesize that:

Hypothesis 4: *Higher inflation rate is negatively connected to FDI inflow.*

2.3 Uncertainty around economic growth

Change in Gross Domestic Product (GDP) is considered as a proxy for economic growth, which is one of the most quotidian determinants of FDI inflows globally. When investigated on the choice of new investment destinations, US-based MNEs valued country with higher and stable economic growth over the dallying countries (Demirbag et al., 2020). Therefore, positive economic growth connects strongly to higher FDI inflows (Kirchner, 2012; Kariuki, 2015). This

relationship is even stronger for high growth developing countries due to heterogenous opportunities that include proximity to markets, resources, and low labour cost (Iamsiraroj & Doucouliagos, 2015). On the contrary, there exists empirical evidence suggesting a strong negative link between GDP growth and FDI inflows in the developing economies (Buchanan et al, 2012), which was attributed to the host country's recession leading to merger and acquisition activities. Extending this relationship to a causal framework, Onafowora and Owoye (2019) reported both bi- and unidirectional causality in different Caribbean countries. While considering a mix of developed and developing countries, Saini and Singhania (2018) discovered GDP growth to be more significant and positive for developed countries. We have the following hypothesis for economic growth:

Hypothesis 5: *Higher economic growth is positively connected to FDI inflows in developing countries.*

3. Research Design

3.1 Data

This study examines the link between risk dimensions and FDI inflows using annual financial data over the period of 2000 to 2019 for 48 developing countries. The list of countries used for the study is available in Appendix A1. The dataset consists of 960 observations of balanced panel data. The time frame of this study includes global financial crisis of 2007-08 but excludes the COVID-19 period due to data limitation. All data were sourced from the World Development Indicators (World Bank, 2020), Worldwide Governance Indicators (Kaufmann et al., 2010), and UNCTAD.

The dependent variable is the FDI inflows as a percentage of GDP. This study includes five explanatory variables, namely the political risk, financial risk, exchange rate, inflation rate

risk and economic growth. The four explanatory variables are used to capture the four risk dimensions as discussed earlier, while economic growth is used to control for the influence of growth opportunities and economic instability in the country. In line with the theories, the risk variables are chosen based on behavioural and MNE risk mitigation skills. For example, even when appreciation of the currency may reduce cash flows in the future, MNEs may still invest in that country if they believe that they have the capacity and experience to mitigate such risk (Buckley et al., 2020). MNEs are likely to choose developing countries with facilities to mitigate risks through financial instruments, such as swaps, forwards, and futures. In addition, if the companies are R&D intensive, they will prefer countries with better scientific infrastructure and a good regional market for innovation (Belderbos, Leten and Suzuki, 2017). Growth of some developing East Asian countries is particularly aligned with this regional FDI policy. The definitions of the variables are presented in Table 1.

Table 1: Definitions of variables

Variable	**Definition**	**Expected Impact**
Foreign Direct Investment (FDIG)	FDI inflow as a percentage of GDP	
Political Risk (POLR)	Political Risk Index including political stability and terrorism information. A lower value indicates instability. Therefore, a higher value should attract high FDI inflow.	Positive
Financial Risk (FINR)	External Debt as a percentage of Gross national income	Negative
Exchange Rate Risk (CURR)	Fluctuation in host country currency calculated using the Log Nominal Exchange Rate with respect to US Dollar	Positive
Inflation Rate Risk (INFR)	Annual percentage change in consumer prices	Negative
Economic Growth (ECOG)	Annual growth rate of Gross Domestic Products (GDP). Lower economic growth is considered as a major risk factor for long-term investment.	Positive

3.2 Methodology

The empirical analysis in this study proceeds in three stages. First, basic summary statistics and correlations are discussed. Second, regression results from Fixed Effects (FE) and System GMM models are analysed. Third, risk clusters are explained. Additional tests on unit root are reported in Appendix A2.

Panel data regression has its benefits and drawbacks. The data used in this study present a larger cross-section than time series (N > T). Panel data with large cross-section are not seriously affected by serial correlation, but the potential endogeneity and cross-section dependency are valid concerns (Baltagi and Kao, 2000; Kim, 2010). To solve these issues, a choice between Fixed and Random Effects was tested using the Hausman Specification Test (Hausman and Taylor, 1981). The null hypothesis of the Hausman test is that the Random Effects model is efficient. We found Fixed Effect to be more efficient. Equation (1) presents the model specification for the link between risk dimensions and FDI inflows:

$$FDIG_{it} = \beta_0 + \beta_1 CURR_{it} + \beta_2 FINR_{it} + \beta_3 INFR_{it} + \beta_4 POLR_{it} + \beta_5 ECOG_{it} + \phi_i + \mu_{it} \quad (1)$$

In Equation (1), FDIG is the FDI to GDP ratio, CURR represents the currency value with respect to US Dollar, FINR is financial risk, which is measured as the percentage of external debt to GNI, INFR stands for the inflation rate risk, POLR is the notation for political risk, ECOG is the economic growth as captured using the percentage change in GDP, '*i*' is for individual cross-section, '*t*' is used for time period, 'ϕ' is country specific effects and 'μ' is the error term.

Measures of risks might be potentially endogenous. Fixed effects estimates are robust against potential endogeneity arising from omitted variables at country-level that are time-invariant. Fixed effects estimator, however, is not appropriate if lagged dependent variable is controlled in a model specification. For instance, the association between the dependent

variable and the lagged dependent variable could lead to correlation with the error term (Okafor, 2020a, 2020b). Furthermore, explanatory variable, such as the political risk, is potentially endogenous. For example, it is likely that the political risk is endogenous to MNC activities in host country. On one hand, it could be the case that the activities of MNCs help create an enabling environment to expropriate risk. Domestic firms might lobby the host government to limit the activities of MNCs, as the MNCs expand and report high profits. On the other hand, in a hostile political climate, a regime might use the expropriation of MNCs as a means of regaining popularity, especially from the poorer segments of the population (Vadlamannati, 2012).

While the coefficients obtained with the use of Fixed effects estimator are robust in the presence of potential endogeneity issues arising from time-invariant factors, they are not robust in the case of endogenous issues arising from time-varying factors. In addition to the Fixed-effects estimator, we use the System GMM estimator to address potential endogeneity issues. The parameter estimates obtained using System GMM are robust in the presence of endogenous issues arising from both time-invariant and time-varying factors (Okafor, et al., 2017, Bhattacharya, Okafor, & Pradeep, 2021, Roodman 2009).

Considering the dynamic nature of the variables and to address potential endogeneity, in line with Arellano and Bond (1991), Blundell and Bond (1998) and Roodman (2009), we employed the Generalized Method of Moments (System GMM). We relied on internal instruments from the panel dimension of data to address potential endogeneity issues. The validity of those instruments is tested using Hansen test. The null hypothesis of the Hansen test is that the over-identifying restrictions are valid. The test follows a Chi-square distribution.

In the dynamic model specification, lagged dependent variable is included to account for the potential persistence in the FDI series (Okafor, 2020a; Okafor, Bhattacharya, & Bloch, 2017). The dynamic model specification is specified as follows:

$$FDIG_{it} = \alpha_0 + \alpha_1 FDIG_{it-1} + \alpha_2 CURR_{it} + \alpha_3 FINR_{it} + \alpha_4 INFR_{it} + \alpha_5 POLR_{it} + \alpha_6 ECOG_{it} + \phi_i + \lambda_t + \mu_{it} \quad (2)$$

Where, $'\lambda'$ denotes year-specific effects.

A slightly modified model was used to account for only the four risk components, which excludes economic growth (ECOG). Following suggestions from several studies on political risk being a relatively long-term variable (Rashid et al., 2017), we have also considered first lag of the political risk (POLR (-1).

Multiple risk dimensions might interact, leading to more useful impact as a 'collective force' rather than an individual component of risk. A risk cluster helps understand the combination of risks that is useful for risk mitigation policies of the MNEs. We have added a risk cluster analysis to emphasise on the profile of risks affecting FDI inflows. Each of the four risk items, namely inflation risk, currency risks, etc., is multiplied by others similar to a [1 x 1] moderation effect in order to create risk clusters. These clusters offer us information on the most influential groups of risks. The cluster analyses are estimated using GMM-system to address endogeneity issues. Only significant cluster relationships are reported and discussed.

4. Results and Discussions

4.1 Descriptive Statistics, Correlation Matrix, and Hausman Test

Descriptive statistics in Table 2 exhibit some extreme conditions suffered by the developing countries. FDI inflow is on the average 3.71% of the GDP. Negative figures, such as a minimum

of -37.17%, suggest that some countries experienced extreme FDI outflows, rather than inflows. Host country currency value (against US Dollar) has seen some extreme descriptive, with average of 1343.40 and maximum value of 42000. These extreme exchange rate numbers are found in Iran, Vietnam, Indonesia, and Paraguay. The countries covered in the sample experienced average economic growth of 3.19% over the sample period. Proportion of external debt to GNI is 45.09%, on the average (FINR). External debt soars to approximately 283.25%. Average inflation rate (INFR) is 8.22%. While some countries have experienced negative inflation rates, the highest year on year inflation rate was 325%. A typical country in the sample has experienced political risk as the average is -0.51.

Table 2: Descriptive Statistics

	FDIG	CURR	ECOG	FINR	INFR	POLR
Mean	3.71	1343.40	3.19	45.09	8.22	-0.51
Median	2.79	36.71	3.22	36.34	5.69	-0.44
Maximum	43.91	42000.00	23.08	283.25	325.00	1.18
Minimum	-37.17	0.54	-15.40	0.14	-3.75	-2.81
Std. Dev.	4.17	4226.08	3.61	34.32	14.49	0.77
Obs.	960	960	960	960	960	960

Notes: Values are calculated before data transformation. FDIG denotes FDI as a percentage of GDP, CURR is Currency Rate, ECOG is Economic Growth, FINR is Financial Risk, INFR is Inflation risk, and POLR is Political risk. Iran reported the highest (42000) currency value against US Dollar. Data transformations were carried out to tackle extreme values.

Table 3: Correlation Matrix

	FDIG	CURR	ECOG	FINR	INFR	POLR
FDIG	1.000					
CURR	0.020	1.000				
ECOG	0.085	-0.001	1.000			
FINR	0.364	0.052	-0.048	1.000		
INFR	-0.065	0.012	0.014	-0.043	1.000	
POLR	0.349	-0.163	0.073	0.159	-0.141	1.000

Notes: FDIG denotes FDI as a percentage of GDP, CURR is Currency, ECOG is Economic, FINR is Financial Risk, INFR is Inflation risk, and POLR is Political risk.

Table 3 presents the correlation matrix. None of the variables are highly correlated, suggesting no multi-collinearity problem in the data. Appendix A3 shows the test results for multicollinearity in the form of Variance Inflation Factor (VIF). VIF scores also suggest no multicollinearity issue.

The choice between the Fixed or Random Effects is decided using the Hausman test. As noted earlier, the null hypothesis of the test is that the Random Effects is efficient. The test follows a Chi-square distribution. The Chi-square test value is 57.628 (p = 0.0005). The null hypothesis is safely rejected at 1% level, indicating a strong support for Fixed Effect models.

Table 4: The link between risk dimensions and FDI inflows

Variable	FE (1)	FE (2)	FE (3)	FE (4)	FE (5)	FE (6)	FE (7)	System GMM (8)	System GMM (9)	System GMM (10)	System GMM (11)
FDIG(-1)				0.173***	0.178***	0.178***	0.172***	0.106***	0.099***	0.133***	0.096***
CURR	0.3959***	0.378***	0.411***	0.372***	0.359**	0.350**	0.365***	1.596**	1.241*	1.686***	1.070**
ECOG	0.0968**			0.092**			0.097**	0.116***	0.110***		
FINR	0.3036***	0.297***	0.298***	0.271**	0.258**	0.251**	0.266**	-0.405**	-0.468*	-0.391***	-0.536***
INFR	0.1141	0.097	0.065	0.062	0.042	0.043	0.067	-0.315	-0.154	-0.388***	-0.233
POLR	0.3979***	0.423***		0.328***	0.349***			-0.581***		-0.675***	
POLR (-1)			0.357***			0.280***	0.282***		-0.336		-0.404***
C	-1.877***	-1.606***	-1.680***	-1.719***	-1.447***	-1.429***	-1.720***				
Adj. R^2	0.50	0.49	0.50	0.53	0.52	0.52	0.53				
Obs.	960	960	912	912	912	912	912	864	864	864	864
Year Effect								Yes	Yes	Yes	Yes
J-stat								30.30	25.02	27.63	26.17
A-B AR(1)								-3.20***	-3.18***	-3.34***	-3.08***
A-B AR(2)								0.11	0.47	1.05	0.724
CD Normal	-0.61			0.719	1.067			-1.060	-0.309	0.289	0.49

Notes: Figures are beta coefficients. Dependent variable = FDIG, FDIG(-1) = first lag of FDIG. FDIG = FDI as a percentage of GDP, CURR = Currency, ECOG = Economic, FINR = Financial Risk, INFR = Inflation risk, POLR = Political risk. POLR(-1) = first lag of POLR. ***, **, * = coefficient significant at 1%, 5%, and 10% levels respectively. Null hypothesis of the J-statistics is that the instruments are valid. AR(1) and AR(2) are Arellano-Bond serial correlation tests. AR(1) test should be significant while AR(2) should be insignificant. The coefficients for AR tests are '*m*' coefficients. CD Normal is the Pearson CD tests for Cross-sectional Dependence. Null hypothesis for CD Normal test is that there is cross-sectional independence. POLR is the political stability and absence of terrorism. A negative value of POLR indicates risk.

4.2 Link between risk dimensions and FDI inflows

Table 4 reports results for seven Fixed Effects (FE) models and four System GMM models. Four FE models (FE (4) through FE (7) are conducted using Estimated Generalized Least Squares (EGLS) to take care of the serial correlation. Lagged dependent variables are used to take care of the cross-sectional dependency and/or inertia in FDI series. All FE models with lagged dependent variable exhibited cross-sectional independence, and vice versa. Pearson CD Normal test values are shown for FE (1), FE (4) and FE (5) as examples. To confirm the statistical robustness, all System GMM models were found to be free of serial correlation and cross-sectional dependence. Hansen J-statistics show that there was no identification problem with the System GMM models. We placed more emphasis on the results from System GMM models since these estimates are used to address endogeneity issues.

In general, previous year FDI inflows have a positive impact on current FDI inflows. The parameter estimates are consistent in the FE as well as System GMM models. This indicates abidance of FDI inflows among developing countries. The parameter estimates for currency value (CURR) have been consistent using both FE and System GMM models. Results suggest that currency value as a ratio of dollar value has a positive impact on FDI inflows. Resembling theoretical expectation, positive coefficients of the currency value indicate that local currency appreciation against US Dollar would attract more FDI inflows. If local currency appreciates, MNEs will have to use less local currency to convert to more US Dollar, making them to transfer higher after-tax revenue to the home currency, if tax treaty is available. This phenomenon is common among MNEs from service sector investing in high growth economies with unstable political condition in the short run (Jones and Temouri, 2016; Khamphengvong et al., 2018).

Economic growth (ECOG) exhibits strong positive connection to FDI inflows, both in FE as well as System GMM models. As economic growth and political risks are connected, we controlled for economic growth and political risk in several models. Growth FDI nexus is surely stronger in the dynamic models.

Financial risk, measured using external debt as a percentage of GNI, exhibits strong but inconsistent results: positive with the FE models and negative with the System GMM models. Results are however relatively stronger with the System GMM models and interreact with political risk. External debt is considered risky because of the fixed financial obligations attached to it. Since a good portion of a yearly income of a country would be used to service external debt, governments may raise funds from internal market, putting more pressure on the local credit market. As a result, higher external debt sends a negative signal to the investors regarding a country's dependence on the external funding, which may eventually increase the cost of financing (Omoniyi et al., 2019; Froot and Stein, 1991).

On a different note, since external debt is considered risky and FDI inflows seem to decline as a result, FDI receiving developing countries may invest in enhancing the scope of their domestic financial markets, including the stock market and bank credit market. In line with the positive relationship between FDI inflows and stock market development, we expect that the negative link between financial risk and FDI inflows may indirectly open room to further develop the domestic stock market (Agyapong and Bedjabeng, 2019).

The change in the general price level, which is used as a proxy for inflation risk has been the most inconsistent variable of the five. While all the FE models exhibit insignificant positive relationships with FDI inflows, the System GMM results suggest negative impacts with one significant model. The negative link between inflation risk and FDI inflows is not affected by long- and short-term political risk. However, the only significant negative coefficient

between inflation rate and FDI inflow has appeared in the model with no growth. Even though not robust, this result indicates economic growth as a strong balancer between inflation risk and FDI inflow.

Past relevant studies exhibit insignificant connection between inflation rate and FDI inflow (Omankhanlen, 2011). Based on the System GMM results, the parameter estimates suggest that inflation risk has a negative impact on FDI inflows. This result can be explained by the preliminary evidence from the descriptive statistics which suggests that developing countries experience an extreme band of price change ranging from a minimum of -3.75% to a maximum of 325%. Large dispersion in the inflation risk series would translate into higher uncertainty and higher cost of financing (Asiamah et al., 2019; Xaypanya et al., 2015). From a domestic consumer perspective, higher inflation rate would make products expensive for the local buyers. MNEs would lose potential advantage of the domestic market given the persistence of the inflation risk.

We have considered political risk from the perspective of political stability and absence of terrorism. Hence, a negative value would represent risk, while a positive value should attract more FDI inflows. The results for the contemporaneous political risk (POLR) are inconsistent between FE and System GMM models. FE models suggest a positive impact, whereas the dynamic models indicate a negative impact. In general, considering the robustness of the System GMM models, the parameter estimates suggest that the benefit of political stability and absence of terrorism is not automatic. As a result, political stability would not necessarily lead to higher FDI inflows contemporaneously. When considered at the first lag (POLR(-1), political stability has a positive impact on FDI inflows in the FE model and inconsistent results in the System-GMM models. Descriptive statistics show that an average country with political instability is still receiving FDI. Although the research on political risk is building up, evidence

on the effect of lagged political risk on FDI inflows is rare. Findings from the FE models are in line with results on the Asia Pacific countries (Rashid et al., 2017).

Furthermore, in the absence of economic growth, System GMM models suggest that contemporaneous political risk negatively influences FDI inflows when economic growth is accounted for. The links weaker for lagged political risk. Another interesting find is that the financial risk (FINR) becomes stronger risk component in the presence of lagged political risk and in the absence of economic growth. Impact of currency value on FDI inflow also significantly drops in the presence of lagged political risk. Hence, there exists strong interplay between the risk factors. We present with risk cluster analysis to investigate this further.

Table 5: Risk clusters and FDI inflow – System-GMM results

Variable	(1) INFR * INFR	(2) FINR * FINR	(3) CURR * CURR	(4) FINR * CURR	(5) ECOG * INFR	(6) ECOG * FINR	(7) ECOG * CURR	(8) ECOG * POLR(-1)
FDIG(-1)	0.122***	0.103***	0.141***	0.238***	0.123***	0.116***	0.215***	0.119***
CURR	1.424***	1.205***			1.628***	1.379***		1.500***
ECOG	0.109*	0.110*	0.120***	0.106***				
FINR	-0.386		0.032		-0.575***		0.946***	-0.485*
INFR		-0.440*	-0.076	-0.013		-0.299*	0.019	-0.491**
POLR (-1)	-0.293	-0.366	-0.212	0.669**	-0.2	-0.286**	0.565***	
INFR*INFR	-0.100*							
FINR*FINR		-0.124***						
CURR*CURR			0.113***					
FINR*CURR				0.126***				
ECOG*INFR					0.042***			
ECOG*FINR						0.035***		
ECOG*CURR							0.030***	
ECOG*POLR(-1)								-0.134**
Obs.	864	864	864	864	864	864	864	864
Year Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
J-stat	32.58	32.05	27.21	35.01	24.98	28.17	36.44	33.70
A-B AR(2)	0.601	0.503	0.708	1.196	0.619	0.569	1.079	0.598

Notes: Only significant cluster relationships are shown. Results for [1 x 1] research clusters are shown. J-statistics are all insignificant, which indicate that the instruments are valid. All Arellano-Bond AR(2) coefficients are insignificant, indicating no serial correlation problem. We have also checked for cross-sectional dependency and found no dependency across all models.

4.3 Risk Cluster Analysis

Table 5 presents the results from the [1 x 1] cluster analysis. The estimates are obtained using System GMM. J-statistics and Arellano-Bond serial correlation statistics have not flagged up any problem. In general, results linking the risk dimensions and the FDI inflows turn out to be much better in the risk-cluster analysis. Most variables exhibit significant influence on FDI inflow that is expected according to the theory. Results on inflation rate and political risk improved in the cluster analysis when compared to previous results. Inflation rate negatively and political risk (lagged) positively influenced FDI inflow.

Of the total eight models, first three models report the squared values. These models show that only financial risk and currency risks exhibit 'U' shaped relationship with FDI. Five models (Model 5 through 8) report cross-risk clusters. Financial risk (FINR) shows significant interaction with currency (CURR) and economic growth (ECOG), while both interactions positively influence FDI inflow. Inflation rate (INFR) interacts with economic growth (ECOG), which positively connects to FDI inflow. ECOG interacts with CURR that positively connects to FDI inflow. Lagged political risk (POLR(-1) significantly interacts with ECOG, which has seen a negative connection to FDI inflow. Among the five determinants, economic growth and financial risks are the most significant determinants of FDI inflow.

FINR and CURR interaction suggests that countries with higher financial risk (external debt) will still receive FDI if the currency value is strong. FINR and ECOG interaction indicates that countries with higher financial risk will received FDI if their economy is growing. It is most obvious that countries with a positive interaction between ECOG and CURR will receive more FDIs. ECOG and INFR interaction suggests that countries can shield against higher inflation

rate if they have consistent economic growth. Result of POLR(-1) and ECOG is interesting, which indicates that countries may lose FDI even if they maintain stability and growth. Overall, risk cluster analysis shows that stable economic growth and stronger currency can resolve most risk dimensions of FDI. Squared models show that excessive inflation and financial risk will reduce FDI inflow, while stronger currency will bring more FDIs.

Risk cluster analysis strongly justifies unique importance of economic growth as a first stage determinant of FDI inflows. In other words, a country offers high risk mitigating capacity if it achieves higher economic growth. MNEs' ability to mitigate risk is channelled through economic prospect of the host country and financial market development in the host country (Izadi et al., 2021).

5. Conclusion

5.1 Concluding Remarks

Given the growth of risks in international business, this study took an alternative path to explain the link between risk dimensions and FDI inflows. We examine the effects of four risk dimensions, such as the political stability, currency volatility, inflation rate risk, and financial risk on FDI inflows using several Fixed Effects, and System GMM models. This study uses twenty years of data from forty-eight developing countries.

Overall, after controlling for potential endogeneity issues by using System GMM, we find results that are in line with theoretical predictions. An appreciation of the currency value with respect to the US Dollar, progressive economic growth, lower inflation rate, and lower external debt can help a country build better international image, leading to higher FDI inflow.

Impact of political stability is mixed. Even if there exists political stability, countries may still find attracting FDI challenging, *ceteris paribus*.

Table 6: Typology of a Two-layer FDI Decision Factors

Decision layers	**Risk dimensions of FDI inflow**		
Primary Layer (Location-specific and endogenous factors)	Economic growth (Higher and stable growth, more FDI)	Domestic Inflation risk (Lower domestic inflation risk, more FDI)	Domestic political risk (Stable domestic political condition, more FDI)
Secondary Layer (Experience and behavioural, and exogenous factors)	Currency risk (Unstable/weak currency value, lower FDI)	Financial risk (Higher international borrowings, lower FDI)	Regional and global political risk (Unstable global and regional political stability, lower FDI)

Source: Proposed by authors.
Note: Table 6 explains how MNEs should make international investment decision, given the risks of international business.

5.2 Implications

(a) Contributions to theory – a two-layer decision typology

As presented in Table 6, we find two layers of decision frame. FDI decision is primarily made based on economic growth or domestic market size, domestic political risk, and domestic inflation risk. These are location-specific factors and, in line with Dunning (1973), MNEs would exploit any advantage they may see sustainable. UK Government on their foreign country risk

assessment identify Bangladesh[2], Vietnam[3] and China[4] having varying levels of political uncertainty, in terms of pockets of unforeseen political crisis and tremulous democratization process. However, these countries have been receiving foreign investment primarily because of a stable economic growth, low labour cost, and large internal market demand.

The second layer includes factors that depend on international operation or relationship, such as the currency rate risk, financial risk (external credit for financial development), and regional or global component of political risks. In line with Buckley et al. (2016; 2020), FDI decision relating to these factors depends on MNE experience and behaviour of the mangers towards mitigating these factors. For instance, if the risk associated with foreign currency that is not possible to mitigate using trade balances, i.e., import and export, MNEs would rely on derivative markets to hedge against these risks. They would engage with international banks and brokers to hedge their positions using swaps contracts. We also extend from Buckley et al. (2020) on their categorisation of endogenous risk – internal to the MNE, and exogenous risk – external to the MNE. We identify the two risks for country level factors. The endogenous country level factors are also the primary country-specific decision factors, whereas the exogenous factors are the secondary FDI decision factors that are often independent of the country of investment.

Table 7: Risk-location typology for FDI decision

	Location	
	Local	**Regional and global**

[2] https://www.gov.uk/government/publications/overseas-business-risk-bangladesh/overseas-business-risk-bangladesh
[3] https://www.gov.uk/government/publications/overseas-business-risk-vietnam/overseas-business-risk-vietnam
[4] https://www.gov.uk/government/publications/overseas-business-risk-china/overseas-business-risk-china

Risk factors	**High**	• Low economic growth of the host country • Political risk in the host country	• Regional and global political risk • Currency risk • Financial risk of the host country
	Low	• Inflation risk	[none]

Source: Proposed by authors.

Table 7 offers a revised risk typology based on location advantage and risk factor facing MNEs. Our results and discussions indicate that MNEs should avoid a country with low economic growth and high domestic political uncertainty. Alongside, while MNEs can worry less about inflation risk, they must consider financial risk, currency risk and regional political risk as high-risk factors.

(b) Implications for MNEs

Excessive and unmanageable risks destroy MNE value. Our results help MNEs to create a check list of risk factors that will straighten MNE international business entry decision. Managers will be able to make an informed trade-off between risks and benefits in host country, and the risk mitigation capabilities of the MNEs. In general, MNEs must prioritize the determinants of international investment that are based on economic growth, political stability – domestic and regional, financial market development, currency value, and inflation risk. Countries with stable economic condition will help mitigate most other risk factors.

(c) Implications for policy makers

Attracting international investment is becoming complex amid heightened geopolitical risk and relationship. Countries are expected to offer benefits that help enhance MNE value. These benefits include maintaining a stable economic growth, low labour cost, access to market, and growing domestic demand. These benefits will also enrich the competitive advantage of the

host countries, while enthralling MNE managers to invest. At the second layer, countries must maintain stable political condition and bilateral relationship relevant stakeholders.

In view of these findings, we forward three key factors for the policymakers to review: stable economic growth, political stability or indirect risk mitigation policies, and investment for financial market development. Developing markets are prioritized by MNEs for having large domestic market and low-cost of managing supply chain. Most developing countries still suffer from a relatively high political risk and poor financial market development, which contributes to higher long-term opportunity and lower competitive advantage. Policymakers in these countries may lose negotiating power if they cannot build reputation as the next best international destination. We, thus, agree with Demirbag et al. (2020) on the consideration for both regional and intra-regional risk factors for attracting new investment.

References

Agyapong, D., & Bedjabeng, K. A. (2019). External debt stock, foreign direct investment and financial development. *Journal of Asian Business and Economic Studies*, 27(1), 81-98.

Akhtaruzzaman, M., Berg, N., & Hajzler, C. (2017). Expropriation risk and FDI in developing countries: Does return of capital dominate return on capital? *European Journal of Political Economy*, 49, 84-107.

Ali, H., Qingshi, W., Ullah, I., & Ali, Z. (2017). How Terrorism Affects Foreign Direct Investment in Pakistan? *International Journal of Economics and Financial Issues*, 7(3), 625-631.

Alshamsi, K., bin Hussin, M., & Azam, M. (2015). The impact of inflation and GDP per capita on foreign direct investment: The case of United Arab Emirates. *Investment Management and Financial Innovations*, 2(3), 20-30.

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.

Asiamah, M., Ofori, D., & Afful, J. (2019). Analysis of the determinants of foreign direct investment in Ghana. *Journal of Asian Business and Economic Studies*, 26(1), 56-75.

Balan, F. (2019). The effects of political and financial risks on foreign direct investments to the MENAT countries. *Theoretical & Applied Economics*, *2*(2), 121-138.

Baltagi, B. H., & Kao, C. (2000). Nonstationary panels, cointegration in panels and dynamic panels: a survey, Centre for Policy Research, Working Paper No. 16, Syracuse University, Syracuse, New York, NY.

Barry, C. M., & DiGiuseppe, M. (2019). Transparency, risk, and FDI. *Political Research Quarterly*, *72*(1), 132-146.

Belderbos, R., Leten, B., & Suzuki, S. (2017). Scientific research, firm heterogeneity, and foreign R&D locations of multinational firms. *Journal of Economics & Management Strategy*, *26*(3), 691-711.

Bhattacharya, M., Okafor, L. E., & Pradeep, V. (2021). International firm activities, R&D, and productivity: Evidence from Indian manufacturing firms. *Economic Modelling, 97*, 1-13. doi:https://doi.org/10.1016/j.econmod.2021.01.012

Bickenbach, F., Liu, W. H., & Nunnenkamp, P. (2018). How global is FDI? Evidence from the analysis of Theil indices. *Empirical Economics*, *55*(4), 1603-1635.

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

Buchanan, B. G., Le, Q. V., & Rishi, M. (2012). Foreign direct investment and institutional quality: Some empirical evidence. *International Review of Financial Analysis,* 21(1), 81- 89.

Buckley, P. J., Chen, L., Clegg, L. J., & Voss, H. (2020). The role of endogenous and exogenous risk in FDI entry choices. *Journal of World Business*, *55*(1), 101040.

Buckley, P. J., Chen, L., Clegg, L. J., & Voss, H. (2016). Experience and FDI risk-taking: A microfoundational reconceptualization. *Journal of International Management*, *22*(2), 131-146.

Busse, M., & Hefeker, C. (2007). Political risk, institutions and foreign direct investment. *European Journal of Political Economy*, *23*(2), 397-415.

Büthe, T, & Milner, H. V. (2008). The Politics of Foreign Direct Investment into Developing Countries: Increasing FDI through International Trade Agreements?. *American Journal of Political Science*, 52(4), 741–62.

Camarero, M., Montolio, L., & Tamarit, C. (2019). Determinants of FDI for Spanish regions: evidence using stock data. *Empirical Economics*, 1-42.

Cavusgil, S. T., Deligonul, S., Ghauri, P. N., Bamiatzi, V., Park, B. I., & Mellahi, K. (2020). Risk in international business and its mitigation. *Journal of World Business*, *55*(2), 101078.

Chanegriha, M., Stewart, C., & Tsoukis, C. (2017). Identifying the robust economic, geographical and political determinants of FDI: an Extreme Bounds Analysis. *Empirical Economics*, *52*(2), 759-776.

Cohen, J. (1988). Set correlation and contingency tables. *Applied Psychological Measurement*. 12(4), 425-434.

Demirbag, M., Glaister, K. W., & Sengupta, A. (2020). Which regions matter for MNEs? The role of regional and firm level differences. *Journal of World Business*, *55*(1), 101026.

Dunning, J.H. (1980), Toward an eclectic theory of international production: some empirical tests, *Journal of International Business Studies*, 11(1), 9-31.

Dunning, J. H. (1973). The determinants of international production. *Oxford Economic Papers*. 25, 289-335.

Edwards, S. (1990). Capital Flows, Foreign Direct Investment, and Debt-Equity Swaps in Developing Countries. NBER Working Paper No. 3497.

Froot, K. & Stein, J. *(*1991*).* Exchange rates and FDI: an imperfect capital markets approach. *Quarterly Journal of Economics*, 106(4), 1191–1127.

Graham, E. M., & Krugman, P. (1989). Foreign Direct Investment in USA. Institute for International Economics (pp. 65-93), Washington D.C.

Hausman, J A. & Taylor, W. E. (1981). Panel data and unobservable individual effects. *Econometrica*, 49 (6), 1377-1398.

Hassan, M. K., Rashid, M., & Castro, E. (2016). Foreign Direct Investment and Investor Sentiment: A Causal Relationship. *Global Economy Journal*, *16*(4), 697-719.

Hayakawa, K., Kimura, F., & Lee, H.-H. (2013). How does Country Risk Matter for Foreign Direct Investment?, *The Developing Economies*, 51(1), 60–78.

Henisz, W. J. (2000). The institutional environment for multinational investment. *The Journal of Law, Economics, and Organization*, *16*(2), 334-364.

Hymer, S. (1970). The efficiency (contradictions) of multinational corporations. *American Economic Review*, 60, 441-8.

Iamsiraroj S. & Doucouliagos H. (2015). Does growth attract FDI?. *Economics: The Open Access e-Journal*, 9, 1-35.

Iamsiraroj, S. (2016). The foreign direct investment–economic growth nexus. *International Review of Economics & Finance*, 42, 116-133.

Iloie, R. E. (2015). Connections between FDI, corruption index and country risk assessments in Central and Eastern Europe. *Procedia Economics and Finance*, *32*(1), 626-633.

Izadi, S., Rashid, M., & Izadi, P. (2021). FDI and financial channels: international evidence before and after crisis, *Journal of Financial Economic Policy*, 14(1), 24-42.

Jin, W. & Zang, Q. (2013). Impact of change in exchange rate on foreign direct investment: Evidence from China, *Lingnan Journal of Banking, Finance and Economics*, 4, 1–17.

Jones, C., & Temouri, Y. (2016). The determinants of tax haven FDI. *Journal of world Business*, *51*(2), 237-250.

Jun, K. W., & Singh, H. (1996). The Determinants of Foreign Direct Investment in Developing Countries. *Transnational Corporations,* 5(2), 67–105

Kariuki, C. (2015). The determinants of foreign direct investment in the African union. *Journal of Economics, Business and Management*, 3(3), 346-351.

Kaufmann, D., Kraay, A., & Mastruzzi, M. (2010). The Worldwide Governance Indicators: Methodology and Analytical Issues. World Bank Policy Research Working Paper No. 5430. Available at SSRN: https://ssrn.com/abstract=1682130.

Khamphengvong, V., Xia, E., & Srithilat, K. (2018). Inflow determinants of foreign direct investment. *Human Systems Management*, 37, 57-66.

Khan, M. M., & Akbar, M. I. (2013). The Impact of Political Risk on Foreign Direct Investment. *International Journal of Economics and Finance*, 5(8), 147–156.

Kim, H. (2010). Political stability and foreign direct investment, *International Journal of Economics and Finance*, 2(3), 5971.

Kinyanjui, S. (2014). The impact of terrorism on Foreign Direct Investment in Kenya. *International Journal of Business Administration*, 5(3), 148-157.

Kirchner, S. (2012). Foreign direct investment in Australia following the Australia–US free trade agreement Australian, *Economic Review*, 45(4), 410-421.

Kohlhagen, S. W. (1977). Exchange rate changes, profitability, and direct foreign investment. Southern *Economic Journal*, 44(1), 43-5.

Lily, J., Kogid, M., Mulok, D., Thien Sang, L., & Asid, R. (2014). Exchange Rate Movement and Foreign Direct Investment in Asean Economies. *Economics Research International*, 1(1), 1-13.

Ma, S., Xu, X., Zeng, Z., & Wang, L. (2020). Chinese Industrial Outward FDI Location Choice in ASEAN Countries. *Sustainability*, *12*(2), 674.

MacDougall, G. D. A. (1960). The Benefits and Costs of Private Investment from Abroad: A Theoretical Approach. *Bulletin* of the *Oxford University Institute* of *Statistics*, 22(3), 189–211.

Macpherson, D. (2013). *Economics: Private and Public Choice*. Mason: Cengage Learning.

Malik, M. Y., Latif, K., Khan, Z., Butt, H. D., Hussain, M., & Nadeem, M. A. (2020). Symmetric and asymmetric impact of oil price, FDI and economic growth on carbon emission in Pakistan: Evidence from ARDL and non-linear ARDL approach. *Science of The Total Environment*, 138421.

Mukhopadhyay, D., & Das, D. (2019). Impact of Risk Perceptions on Foreign Direct Investment (FDI) Inflows: A Study of Emerging Economies. In *The Gains and Pains of Financial Integration and Trade Liberalization*. Emerald Publishing Limited.

Narula, R. & Dunning, J. H. (2010). Multinational Enterprises, Development and Globalization: Some Clarifications and a Research Agenda, *Oxford Development Studies*, 38(3), 263-287.

Nguyen, V. C., & Do, T. T. (2020). Impact of exchange rate shocks, inward FDI and import on export performance: a cointegration analysis. *The Journal of Asian Finance, Economics, and Business*, *7*(4), 163-171.

Obi, C. (2017). The Impact of Foreign Exchange Volatility on Foreign Direct Investment in Nigeria [1999-2016]. *Global Journal of Management and Business Research*, 17(6), 25-30.

Okafor, L. E. (2020a). Export Market Destinations, Imported Intermediates, and Productivity: Firm-level Evidence from Ghana. *The International Trade Journal*, 1-28. doi:10.1080/08853908.2020.1718567

Okafor, L. E. (2020b). Exports, Imported Inputs, Two-way Trade, and Productivity: The Role of Absorptive Capacity. *The International Trade Journal,* 1-26. doi:10.1080/08853908.2020.1782287

Okafor, L. E., Bhattacharya, M., & Bloch, H. (2017). Imported Intermediates, Absorptive Capacity and Productivity: Evidence from Ghanaian Manufacturing Firms. *The World Economy, 40*(2), 369-392.

Omankhanlen, A.E. (2011). The Effect of Exchange Rate and Inflation on Foreign Direct Investment and its relationship with Economic Growth in Nigeria. *Economics and Applied Information*, 17(1), 5-16.

Omoniyi, O., Alao, A., & Ajibola, G. O. (2019). Dynamic interaction among external debt, foreign direct investment and economic growth in Nigeria. *Journal of Management & Administration*, 2, 113-140.

Onafowora, O., & Owoye, O. (2019). Public debt, foreign direct investment and economic growth dynamics. *International Journal of Emerging Markets*, 14(5), 769-791.

Porter, M. (1990). *The Competitive Advantage of Nations*, Free Press, New York, NY.

Quazi, R. M. (2014). Corruption and Foreign Direct Investment in East Asia and South Asia: An Econometric Study 1. *International Journal of Economics and Financial Issues*, 4(2), 231–242.

Rafat, M., & Farahani, M. (2019). The country risks and foreign direct investment (FDI). *Iranian Economic Review*, *23*(1), 235-260.

Raff, H., Ryan, M., & Stähler, F. (2012). Firm productivity and the foreign-market entry decision. *Journal of Economics & Management Strategy*, *21*(3), 849-871.

Rashid, M., Chowdhury, A., Talukdar, K. H., & Jye, W. S. (2021). Determinants of FDI Inflow in BRICS Countries: Role of Globalization and Corruption Control. *Journal of Economic Cooperation & Development*, *42*(4), 171-203.

Rashid, M., Looi, X. H., Jye, W. S. (2017). Political stability and FDI in the most competitive Asia Pacific countries. *Journal of Financial Economic Policy*, 9(2), 140-155.

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

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

Schneider, F., & Frey, B. S. (1985). Economic and political determinants of foreign direct investment. *World Development*, 13(2), 161-175.

Siotis, G. (1999). Foreign direct investment strategies and firms' capabilities. *Journal of Economics & Management Strategy*, *8*(2), 251-270.

Södersten, B., & Reed, G. (1994). Direct Investments and the Multinational Enterprise. In *International Economics* (pp. 467-493). Macmillan Education, United Kingdom.

Tsaurai, K. (2018). What Are the Determinants of Stock Market Development in Emerging

Markets? *Academy of Accounting and Financial Studies Journal*, 22(2), available at https://www.abacademies.org/articles/what-are-the-determinants-of-stock-market-development-in-emerging-markets-7135.html.

UNCTAD. (2021). World Investment Report. *United Nations Conference on Trade and Development,* United Nations, Geneva, Switzerland.

Unver, M. & Erdogan, M. (2015). Social effects of foreign direct investments: International empirical evidences for education, health and social security. I*nternational Research Journal of Finance and Economics*, 132(4), 7-19.

Vadlamannati, K. C. (2012). Impact of Political Risk on FDI Revisited—An Aggregate Firm-Level Analysis. *International Interactions, 38*(1), 111-139. doi:10.1080/03050629.2012.640254

Xaypanya, P., Rangkakulnuwat, P. & Paweenawat, S.W. (2015). The determinants of foreign direct investment in ASEAN: the first differencing panel data analysis. *International Journal of Social Economics*, 42(3), 239-250.

Yong, S. W., Rosita, S., & Shih-Yi, C. (2017). The Effect of Public Debt on FDI-Growth Nexus: Threshold Regression Analysis. *American Scientific Publisher*, 23(8), 7342-7345.

World Bank. (2020). *World Bank Development Indicators*. Washington, USA.

Appendix A1: List of countries in the sample

Angola	Georgia	Maldives	Romania
Argentina	Ghana	Mauritius	Russian Federation
Bangladesh	Honduras	Mexico	Serbia
Bolivia	India	Mongolia	South Africa
Brazil	Indonesia	Morocco	Sri Lanka
Cambodia	Iran	Myanmar	Swaziland
Cameroon	Jamaica	Nepal	Tanzania
China	Jordan	Nigeria	Thailand
Colombia	Kazakhstan	Pakistan	Turkey
Costa Rica	Kenya	Paraguay	Ukraine
Egypt	Lebanon	Peru	Vietnam
Fiji	Malaysia	Philippines	Zambia

Appendix A2: Panel Unit Root Tests

		Levin, Lin & Chu t*	**ADF - Fisher Chi-square**	**PP - Fisher Chi-square**
FDIG	Level	-9.26***	316.415***	286.832***
	1st Diff	-32.72***	1023.21***	2296.98***
CURR	Level	0.99	58.68	67.44
	1st Diff	-15.40***	340.81***	374.08***
ECOG	Level	-11.78***	294.83***	316.31***
	1st Diff	-31.88***	791.94***	2912.36***
FINR	Level	-5.52***	139.27***	110.37
	1st Diff.	-16.51***	349.94***	364.08***
INFR	Level	-10.55***	270.01***	291.32***
	1st Diff.	-27.72***	684.20***	1890.83***
POLR	Level	-5.69***	179.98***	173.18***
	1st Diff.	-23.44***	558.28***	682.62***

Notes: Levin, Lin, and Chu t* Null hypothesis = Unit root (common), ADF and PP Null hypothesis = Unit root (individual) Automatic Lag Length selection (lag 1) using Schwarz Information Criteria (SIC). Probabilities are computed based on an asymptomatic Chi-square distribution.

Appendix A3: Multicollinearity Test Results

Variables	**Coefficient Variance**	**VIF Score**
CURR	0.036	1.070
ECOG	0.000	1.042
FINR	0.028	1.095
INFR	0.000	1.162
POLR	0.024	1.184