THE EFFECTS OF ECONOMIC FREEDOM ON INFLOWS OF FOREIGN DIRECT INVESTMENT

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ABSTRACT

This thesis examines the implications of Economic Freedom (EF) for FDI inflows using the overall EF index developed by the Fraser Institute and covering the sub-components of EF including Legal System and Security of Property Rights, Access to Sound Money, Freedom to Trade Internationally, Regulation, and Size of Government. The empirical analysis is carried out through different empirical specifications and econometric strategies. The benchmark empirical results suggest that improvements in the levels of EF and in the levels of the sub-components of EF lead to increases in FDI inflows. Supplementary empirical results show that EF and the sub-components of EF do not have statistically significant implications for the effect of Domestic Investment (DI) on FDI inflows. Also, they reveal non-linear relationships between EF and FDI inflows, as well as between the sub-components of EF and FDI inflows. Finally, the empirical analysis shows that the implications of EF for FDI inflows exhibit variations across geo-economic regions.

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LIST OF ABBREVIATIONS

CEPII: *Centre d'Études Prospectives et d'Information International*
DI: Domestic Investment
EF: Economic Freedom
FDI: Foreign Direct Investment
LAC: Latin America and the Caribbean
MENA: Middle East and North Africa
MNE: Multinational Enterprise
RTA: Regional Trade Agreement
SA: South Asia
SSA: Sub-Saharan Africa
UNCTAD: United Nations Conference on Trade and Development
WIR: World Investment Reports

CHAPTER ONE

1. INTRODUCTION

There is a large literature that underlines the significant role of inward Foreign Direct Investment (FDI) in promoting economic growth (e.g., Borensztein et al., 1998; Zhang, 1999; Alfaro et al., 2004; Durham, 2004; Neuhaus, 2006; Yao, 2006; Tiwari and Mutascu, 2011; Pegkas, 2015). This favourable relationship is associated with the contribution of inward FDI in capital formation, and it is often related to transfer of knowledge and technology diffusion (Blomstrom et al., 1992; Borensztein et al., 1998; Zhang, 1999; Choe, 2003; Alfaro et al., 2004; Azman-Saini et al., 2010). It has induced many countries to adopt foreign investment policies (e.g., tax breaks and/or subsidies) and to develop economic conditions (e.g., liberalization of the business environment, improvement in infrastructure) to attract inward FDI over the last few decades (Azman-Saini *et al.*, 2010).

FDI is deemed to be the biggest and most steady component of capital flows in most developing countries (Adams, 2009). Smith (1997) identifies three gaps that inward FDI can fill. First, FDI can fill the "investment gap" since it can provide countries with the needed capital for Domestic Investment (DI). Second, FDI can provide foreign currency to fill the "foreign exchange gap" through the investments of Multinational Enterprises (MNEs) in host countries[1] and, consequently, through earnings from exports of such firms. Third, FDI can creates more economic activities in the recipient country, and it fills the

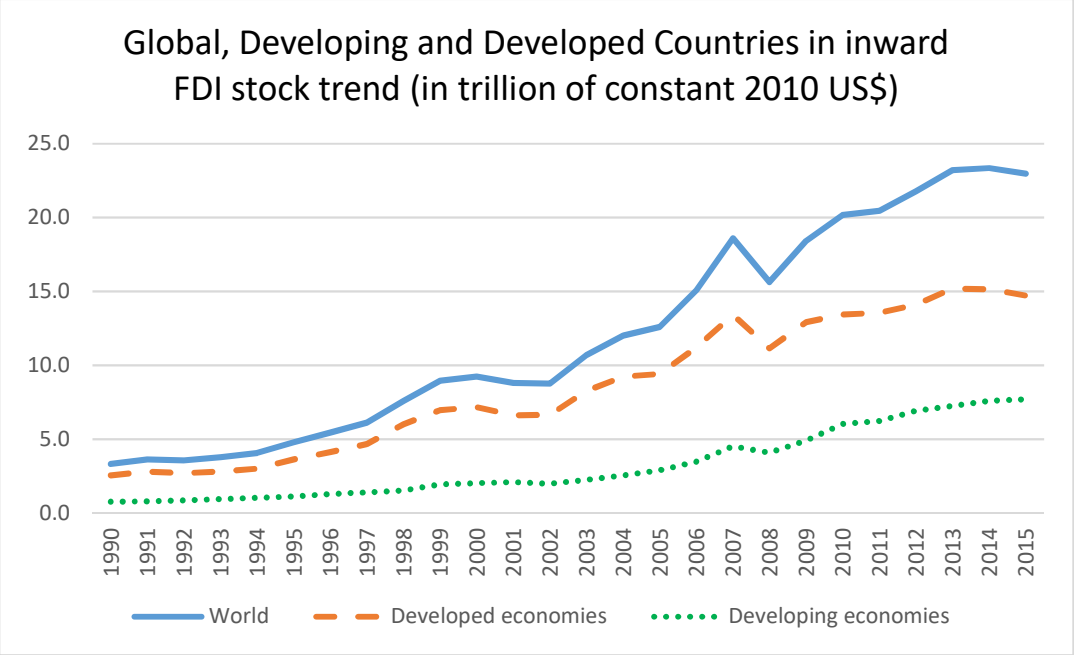
[1] MNEs undertake different types of FDI in foreign host countries, such as Greenfield FDI and Merger and Acquisition (M&A) FDI. MNEs have been initially viewed by host countries as symbols of dependency, but they are subsequently perceived as instruments of development (Rodrik, 1999).

"tax revenue gap" by generating tax revenue for host governments. In addition to the above, Blomstrom and Kokko (2000) indicate that FDI inflow can stimulate market competition, expand access to international markets, and create externalities and knowledge spillovers.

The World Investment Reports (WIRs) of the United Nations Conference on Trade and Development (UNCTAD) reveal continuous increases in global inward FDI stock, from 3.3 trillion of constant 2010 US$ in 1990 to 23.0 trillion of constant 2010 US$ in 2015.[2] These statistics can be broken into increases in inward FDI stock in developed countries from 2.6 trillion of constant 2010 US$ in 1990 to 14.7 trillion of constant 2010 US$ in 2015, and increases in inward FDI stock in developing countries from 0.8 trillion of constant 2010 US$ to 7.7 trillion of constant 2010 US$ in 2015. Also, according to the UNCTAD, global inward FDI stock has increased from 9.6% of Gross Domestic Product (GDP) in 1990 to 33.6% of GDP in 2015. Figure 1.1 displays the inward FDI stock trend for the world as a whole, and also for developed and developing economies.

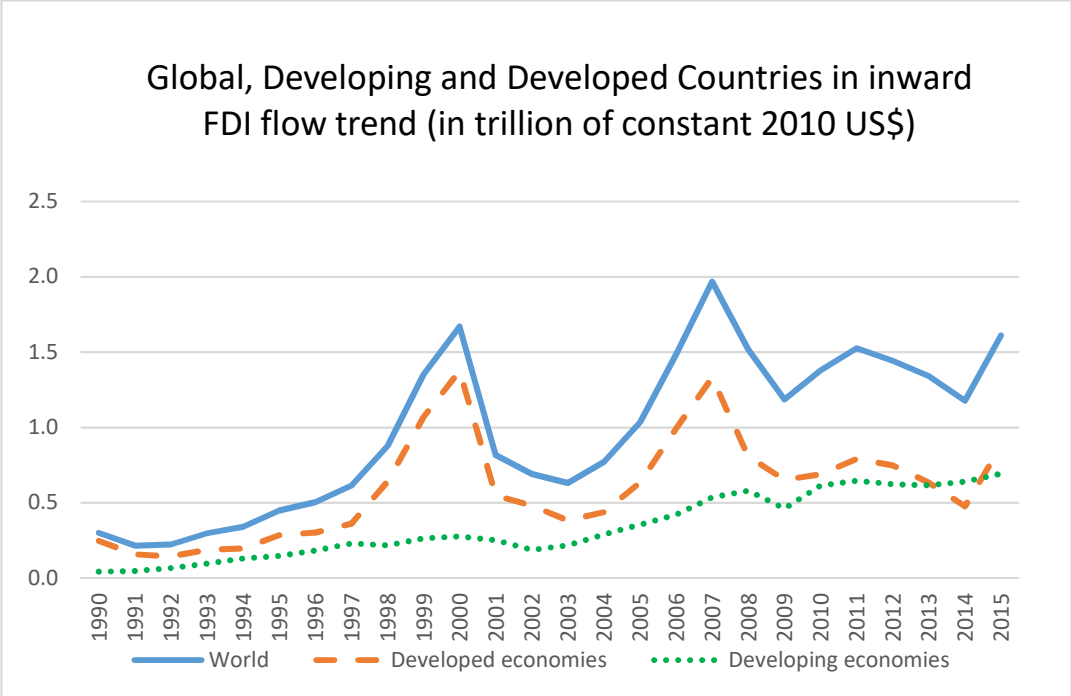
Per the WIRs of UNCTAD, world FDI inflows have also been increasing steadily. They have increased from 0.3 trillion of constant 2010 US$ (0.26 trillion of constant 2010 US$ flowing to developed economies and the rest to developing economies) in 1990 to 1.6 trillion of constant 2010 US$ in 2015 (55% of the inward FDI flows received by developed economies with the remaining 45% flowing to developing economies). Figure 1.2 reveals the recent trend of FDI inflows on a global scale. It also displays FDI inflow trends for developed and developing economies.

[2] The original FDI statistics are presented in current US$. These statistics are converted into constant 2010 US$ using the GDP deflator obtained from the World Bank database.



Source: Author's own calculation using data from WIR of UNCTAD

Figure 1.1: Inward FDI stock trend from 1990 to 2015



Source: Author's own calculation using data from WIR of UNCTAD

Figure 1.2: FDI inflows trend from 1990 to 2015

As developing countries aim to catch-up economically with developed economies, FDI is often deemed to be the main instrument of achieving that goal (Lautier & Moreaub, 2012). An increasing body of literature identifies Economic Freedom (EF) (including the quality of institutions) as a key determinant in attracting FDI (e.g., Bengoa and Sanchez-Robles, 2003; Bénassy-Quéré et al., 2007; Quazi, 2007; Azman-Saini et al., 2010). EF affects economic agents' motivations, productive efforts, and the efficiency in resource allocation (Haan and Sturm, 2000). This is consistent with Adam Smith's emphasis that the liberty to select and supply resources, business competition, trade with other economic agents, and property rights are essential elements for economic advancement (North and Thomas, 1973).

According to the Heritage Foundation (2006, p. 74), EF is "…*the absence of government coercion or constraint on the production, distribution, or consumption of goods and services beyond the extent necessary for citizens to protect and maintain liberty itself."* The essential constituents of EF are personal choice, safeguard of people and private property, liberty of exchange, and the freedom to compete (Gwartney and Lawson, 2002). An individual or a firm's personal ownership is a basic assumption of EF since it provides the economic unit with a legal right to decide how to use its time, resources and talents. Meanwhile, EF implies that an individual or a firm would have no right to use the time, talent and resources of other individuals or firms without their consent (Gwartney and Lawson, 2002). Property acquired without the use of force, theft, or fraud is safeguarded from the physical invasion of others. Hence, the legitimate owners can use, exchange, or donate their property to another economic entity as long as they do not violate the identical

rights of others (Gwartney et al., 2001). Individuals are unrestricted in their choice to work, produce, consume, and invest in the ways they feel are most productive (Miles et al., 2006).

All government action requires some minimal levels of coercion and this is necessary for the defense of a nation or community, and for citizens to be able to promote the evolution of civil society and to enjoy the fruits of their labour (Miles et al., 2006). EF is threatened when government coercions increase beyond some minimal levels, causing interferences in the market beyond the safeguard of persons and property (Miles et al., 2006). Thus, the national level of EF can be viewed as the measure of the unrestrictedness of the economic environment in each country. Governments alter the choices of individuals and firms when they limit EF (Miles et al., 2006). There are far bigger prospects for entrepreneurs to explore new ideas when there is a free and competitive market (Azman-Saini et al., 2010). Economies that are much freer are more able to take advantage of the benefits of the free-market system when economic agents make economic decisions in constructive and efficient ways (Miller et al., 2016). When individuals and firms have more choices, there is a greater likelihood that they will undertake entrepreneurial initiatives. These initiatives would eventually create employment, investment prospects and new products and services that increase the standard of living (Miller et al., 2016). A free and competitive market allows firms to engage in risky but potentially profitable projects such as FDI activities (Azman-Saini et al., 2010).

There are few available indices that measure EF, but the most widely and commonly used EF indices are the ones constructed by the Fraser Institute and by the Heritage

Foundation/Wall Street Journal.[3] The EF measure, which is developed by the Fraser Institute, covers the following main elements (Gwartney et al., 2015):

(i) *Legal System and Security of Property Rights (LSPR)* element concentrates on the independence of the judiciary, the impartiality of courts, protection of property rights, the level of military intervention in politics and rule of law, the integrity of the legal system, legal enforcement of contracts, regulatory costs of real property, reliability of police, and the business cost of crime.

(ii) *Access to Sound Money (or simply, Sound Money)* comprises growth of money stock, volatility of inflation, inflation in itself, and the freedom to own foreign currency bank accounts.

(iii) *Freedom to Trade Internationally (Free Trade)* consists of four sub-components. They are tariffs, controls on the movement of capital and people which looks at foreign ownership and investment restrictions, capital controls, and the liberty of foreigners to visit. The other two sub-components are black market exchange rates and regulatory trade barriers.

(iv) *Regulation* encompasses the credit market regulations concerning proprietorship of banks, private sector credit, and interest rate controls. It covers labour market regulations which looks at hiring and firing regulation, minimum wages, labour hours regulations, centralized collective bargaining, mandated cost of worker dismissal and conscription. Also, it includes business regulations which consists of administrative requirements, bureaucracy costs, regulations on starting a business,

[3] The sub-components of EF are weighted equally in the overall index of EF for both the Fraser Institute and the Heritage Foundation/Wall Street Journal.

licensing restrictions, cost of tax compliance and extra payments, bribes and favouritism.

(v) *Size of Government (SoG)* reflects government consumption, government investment and enterprises, transfers, subsidies, and the top marginal tax rate.

The alternative index of EF from the Heritage Foundation and the Wall Street Journal comprises four principal elements (Miller et al., 2016):

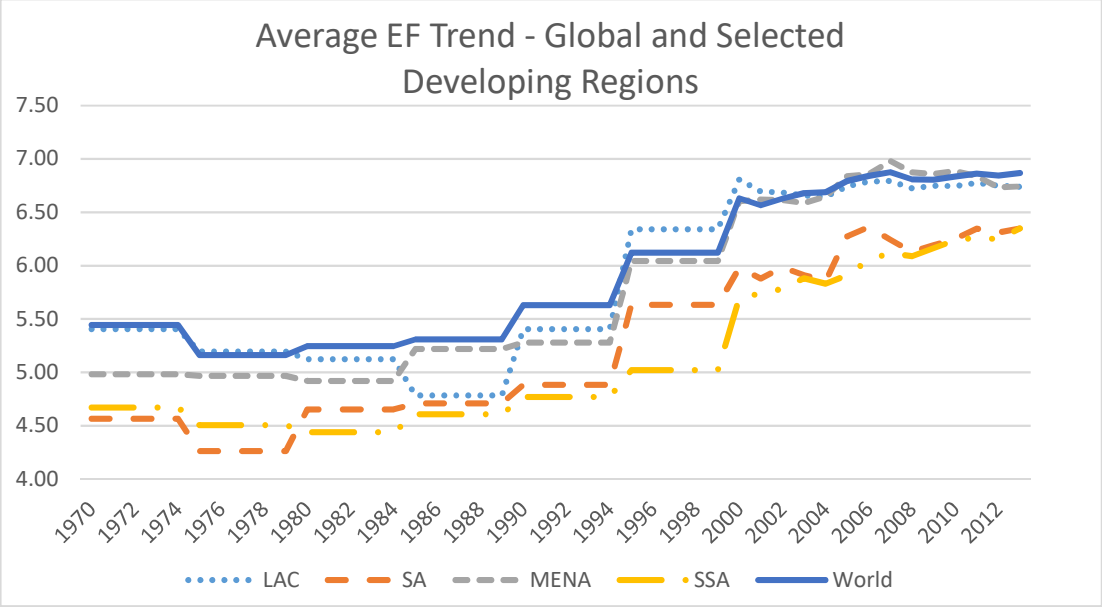
(i) *Rule of Law* concentrates on property rights that looks at how individuals and firms can freely acquire property legally, and on freedom from corruption that can determine the level of economic activity in a country.

(ii) *Government Size* comprises fiscal freedom that looks at the burden of taxes on individuals and firms. Also, it encompasses government spending that tends to impose a burden on a country causing chronic budget deficits and accumulation of public debt.

(iii) *Regulatory Efficiency* looks at business freedom that may be restricted if the regulatory and infrastructural environments constrain efficient running of businesses. It also covers labour freedom that looks at how the legal and regulatory framework of the labour market of a country affect wages, laying off workers, hiring, labour hours, and the rate at which people of working age participate in the labour force. Monetary freedom is also included, and it assesses price stability as well as price controls as high, unstable inflation and price intervention of goods distort market activity.

(iv) *Openness of Markets* looks at the degree to which tariff and non-tariff barriers affect the import and export of goods and services.

This thesis uses the EF index that is developed by the Fraser Institute for the intended analysis because it spans over a longer time period and has a wider scope and country coverage.[4] The index varies on a scale of 0 to 10, where a higher value indicates a higher level of EF. There is a two-year lag in the reporting of the Fraser Institute's EF index. As at the time of the study, year 2013 EF indices were the most recently reported. In 2013, Hong Kong and Singapore were characterized by the highest EF levels, standing at 8.87 and 8.39, respectively. Algeria and Venezuela scored the lowest EF levels in 2013, standing at 3.09 and 4.67 respectively. The Fraser Institute's EF index has been increasing over the years. Below is a graph showing the trend of average EF from 1970 to 2013.



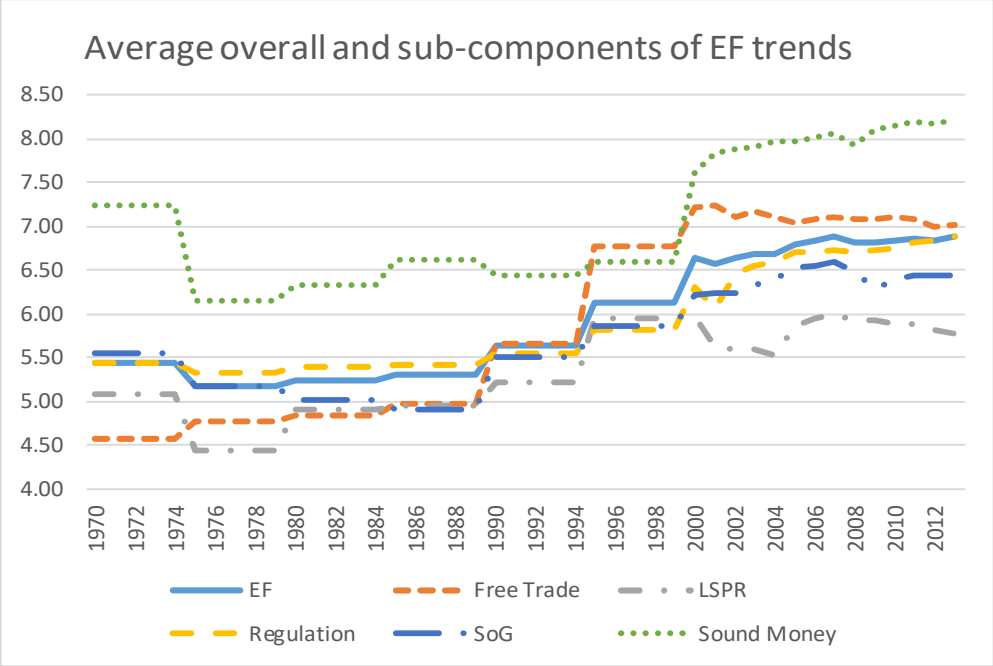
Source: Author's own calculation using data from the Fraser Institute

Figure 1.3: Average EF trend from 1970 to 2013.

[4] The Fraser Institute index of EF was first published in the year 1970 whereas the Heritage Foundation/Wall Street Journal index starts from the year 1995.

There is a generally increasing trend of EF globally as well as in Latin America and the Caribbean (LAC), South Asia (SA), Middle East and North Africa (MENA) and Sub-Saharan Africa (SSA). The global average EF index was 5.45 in 1970. In 2013, the global average increased to 6.87. For LAC, the average EF index increased from 5.40 in 1970 to 6.74 in 2013. The average EF index increased to 6.35 in 2013 from 4.57 in 1970 for SA. For MENA, it increased from 4.98 in 1970 to 6.74 in 2013. It increased from 4.67 to 6.35 in the case of SSA.

Figure 1.4 below shows the trend of the sub-components of EF in relation to the overall index, including Legal System and Security of Property Rights, Access to Sound Money, Freedom to Trade Internationally (Free Trade), Regulation, and Size of Government.



Source: Author's own calculation using data from the Fraser Institute

Figure 1.4: Average EF trends: Overall EF and sub-components of EF

Generally, all sub-components of the EF index exhibit similar upward trends to that of the overall EF index in the period under consideration. However, the Sound Money index has been consistently above the overall EF index from 1970 to 2013 whereas the LSPR index has been constantly below it. The average Sound Money index increased from 7.25 in 1970 to 8.22 in 2013 whiles the average LSPR index increased from 5.07 in 1970 to 5.78 in 2013. The average Free Trade index increased from 4.56 in 1970 to 7.02 in 2013, the average Regulation index from 5.45 in 1970 to 6.87 in 2013, and the SoG index from 5.54 in 1970 to 6.44 in 2013.

Previous studies have established a relationship between EF and FDI describing EF as a factor that aids the increases in FDI (e.g., Quazi, 2007; Azman-Saini et al., 2010). The level of EF reflects the investment climate of a country (Quazi, 2007). It is also an instrument in assessing a country's absorptive capacity of FDI, and an indicator of the ability of a country to internalize new technology introduced as a result of FDI (Azman-Saini et al., 2010). There is an initial empirical literature that examines the relationship between EF represented by an overall index and FDI. Quazi (2007) finds that EF has a positive and significant effect on inward FDI in East Asia. Azman-Saini et al. (2010) reports that the impact of FDI on economic growth is dependent on the level of EF prevailing in an economy. Also, Bengoa and Sanchez-Robles (2003) find a positive relationship between FDI and EF in Latin America. In this context, less regulated economies with sounder institutions are often regarded as a conducive factor for investment (Bengoa and Sanchez-Robles, 2003).

There is a significant body of empirical literature describing the relationship between FDI and specific components of EF. For instance, there are empirical studies that

focus on examining the relationship between FDI and corruption (*e.g.*, Wei, 2000; Habib and Zurawicki, 2002; Egger and Winner, 2005). Corruption is determined by a country's institutional environment, which is important in the assessment of how attractive a given location is for FDI (Egger and Winner, 2005). Foreign investors try to avoid corruption for moral reasons. In addition, they avoid corruption because it is costly, risky and difficult to manage (Habib and Zurawicki, 2002). For example, Wei (2000) finds that high levels of corruption tend to reduce bilateral FDI. Some studies examine the relationship between intellectual property rights and inward FDI. For instance, Seyoum (1996) finds that strong intellectual property rights have positive impacts on attracting FDI to economies that have limited industrial infrastructure and technology. Even for advanced economies, variables such as copyrights and trademarks tend to have positive influences on inward FDI. The literature indicates that lower taxes and government spending in infrastructure attract FDI, whereas government consumption expenditures tend to limit inward FDI (Goodspeed et al., 2006). Also, stringent labour laws tend to reduce inward FDI because they reduce labour flexibility and increase labour cost (Bénassy-Quéré et al., 2007). Meanwhile, stricter business regulations would likely lead to increased unemployment and would reduce inward FDI (Feldmann, 2008). Increasing trade openness, which is realized through reductions in tariff and non-tariff barriers, promotes inward FDI (Kandiero and Chitiga, 2006).

There can be two potential effects of improvements in EF on the connection between FDI and DI. There can be a crowding-out effect. As EF of countries increase, MNEs may increase their foreign investments in such countries. As more and more FDI is geared towards such countries, it can have an effect of crowding-out DI. If MNEs enter

specific sectors through foreign affiliates where they must compete with domestic firms for the domestic market and/or for the export market, they may reduce the investment opportunities that were available to domestic firms (Agosin and Machado, 2005). Hence, in this case, the impact of FDI is likely to be negative if the distribution of the prevailing capital stock in an economy is substantially similar to the inflow of new FDI since this may tend to substitute existing DI (Agosin and Machado, 2005). Also, if domestic firms are highly inefficient and cannot compete with the relatively more efficient MNEs, such MNEs could take a larger share of the domestic and/or export market even to the point of forcing domestic firms to exit the market or to be acquired by such MNEs. Crowding-out effect can also occur when MNEs borrow funds from the host country to finance their investments which will increase the interest rates (Wang, 2010). High interest rates resulting from the high demand for loanable funds can deter domestic firms from borrowing to finance their investments.

There can also be a crowding-in effect. EF can increase FDI which, in turn, can generate spill-over effects on DI. If MNEs invest in relatively undeveloped sectors that lack investments from domestic firms, FDI would complement DI (Agosin and Machado, 2005). This is because MNEs in addition to their investments utilize intangible assets (e.g., technology, management skills, international marketing channels for their products and services, brand names) that may not be present or developed in their host countries (Agosin and Machado, 2005). These intangible assets spill-over to domestic firms. Crowding-in effect can also occur if FDI in the final product industry stimulates the demand for domestically produced intermediate inputs, thus increasing the number of domestic firms providing such inputs (Markusen and Venables, 1997). In the same manner, increased EF-

driven FDI in the intermediate product industry can increase the supply of domestic firms in the final product industry, leading to increase in DI (Wang, 2010). The premises above assume that EF will increase FDI, which will either crowd-in or crowd-out DI.

The effect can be expressed the other way around with EF increasing DI and, hence, increasing or decreasing FDI. In countries where DI is high, it is a signal to MNEs of the many possible business opportunities available (Lautier and Moreaub, 2012). A strong track record of domestic private investment is an indicator of high capital returns (Ndikumana and Verick, 2008). Also, high public investment that creates enough public infrastructure increases the marginal return to FDI, since cost of operating businesses is reduced (Ndikumana and Verick, 2008). MNEs are attracted by the same local profitable environments that attract domestic firms, as such we expect that increases in DI are accompanied with increases in FDI (Lautier and Moreaub, 2012). Domestic firms possess better market information about the domestic business environment than MNEs (McMillan, 1999). Due to the incomplete information that MNEs possess, they depend on levels of domestic investment as an indicator of the economic situation of a country (Lautier and Moreaub, 2012). As high EF allows firms to operate in a manner that potentially increases profits, we can say that EF drives DI which in turn leads the inflow of FDI. Accordingly, higher levels of EF could magnify the impact of DI on FDI in such circumstances.

There is a wide empirical literature that examines the determinants of FDI (e.g., Schneider and Frey, 1985; Tsai, 1994; Loree and Guisinger, 1995; Asiedu, 2002; Zhao, 2003; Blonigen, 2005; Ghazalian and Furtan, 2008, 2009; Blonigen and Piger; 2014; Tang et al., 2014). In examining the determinants of bilateral FDI stock, Blonigen and Piger (2014) include both the parent country and host country real GDP, and find that both the

parent country and host country real GDP promote inward FDI stock. Tang et al. (2014) also finds that real GDP, a proxy for domestic market size is positively related to FDI inflows in Malaysia's electronic and electrical appliances industry. In addition to real GDP, Tang et al. (2014) also identify real exchange rate, financial development, corporate income tax, macroeconomic uncertainty and social uncertainty to significantly affect inward FDI flows for the electronic and electrical appliances industry in Malaysia. Zhao (2003) identifies a high economic growth rate in China to positively influence inward FDI flows whereas a weak Chinese currency negatively impacts FDI inflows. Asiedu (2002) concludes that trade openness promotes FDI inflows to both SSA and non-SSA regions and infrastructure development and high capital returns to positively influence FDI inflows to non-SSA regions. Tsai (1994) identifies domestic market size, trade balance, economic growth and labour costs to be salient determinants of inward FDI inflows.

1.1. Thesis Objective

The objective of the thesis is to examine the direct implications of EF for inward FDI and the interactive implications of EF with other variables on inward FDI. The specific objectives of this thesis are six-fold.

(i) To examine the relationship between EF and FDI using panel dataset covering developed and developing countries and spanning over the time period 1970-2013. An overall empirical assessment will be carried out, followed by an empirical investigation at the economic freedom level and at the geo-economic (regional) level.

(ii) To examine whether the implication of EF for inward FDI has changed over time, that is to determine whether the effect of EF is lessening or gaining prominence over time. Hence, the empirical regressions will be implemented at different sub-periods, and the coefficient will be compared to those obtained from the benchmark regressions.

(iii) To empirically analyze the effects individual sub-components of EF have on inward FDI, and to determine the sub-components that have the strongest impact on inward FDI.

(iv) To determine whether higher levels of EF tend to magnify the detrimental or complementary effects of DI on inward FDI. In other words, the empirical analysis will determine whether improvements in EF could strengthen the impact of DI in promoting inward FDI. Also, it will look at whether improvements in the sub-components of EF help DI to increase FDI.

(v) To determine whether the implication of EF on inward FDI exhibit non-linear patterns. In other words, the empirical analysis will examine whether the impact of EF on inward FDI is magnified at lower levels of EF, and whether this impact slows down at higher levels of EF.

(vi) To implement an empirical analysis to examine whether variations in the effect of EF on inward FDI exists across different levels of EF, and across geo-economic regions such as, Latin America and the Caribbean (LAC), Middle East and North Africa (MENA), South Asia (SA) and Sub-Saharan Africa (SSA).

1.2. Thesis Contributions

The contribution of this thesis to the empirical literature are represented through the following points:

(i) There exists a range of the empirical literature that examines the effects of EF on inward FDI at the regional level covering a subset of countries (e.g., Bengoa and Sanchez-Robbles, 2003; Kapuria-Foreman, 2007; Quazi, 2007). For example, Quazi (2007) examines the effect of EF on FDI for seven East Asian countries. Bengoa and Sanchez-Robbles (2003) carry out their analysis for eighteen Latin American countries. Kapuria-Foreman (2007) focuses on a sub-sample covering developing countries through the empirical assessment of the effect of EF on FDI. This thesis complements this empirical literature by implementing the empirical analysis of the effects of EF level on FDI through a comprehensive dataset covering developed and developing countries located in different geographical regions and spanning over a wide time period (1970-2013). Thus, it benefits from the more-prominent cross-regional variations, particularly in EF level and inward FDI, and it allows for cross-regional comparative analyses through different empirical specifications.

(ii) Also, this thesis contributes methodologically to the aforementioned empirical literature by tackling some important econometric issues, including multicollinearity and endogeneity. Bénassy-Quéré et al. (2007) use a three-step procedure of orthogonalizing and instrumentalizing variables measuring the quality of institutions when examining their effects on bilateral FDI. They depict the quality of institutions through some selected sub-components of the Fraser Institute's EF

index, namely those that are derived from Regulation and LSPR. This thesis adopts the econometric approach of Bénassy-Quéré et al. (2007) in examining the implications of the overall EF index, which encompasses all EF components as listed in section 1.1 (i.e., Sound Money, SoG and Free Trade in addition to Regulation and LSPR) for inward FDI.

(iii) This thesis goes a step further by examining the effect of each sub-component of EF on inward FDI. It applies the aforementioned three-step procedure to orthogonalize and instrumentalize these sub-components. Then, the empirical analysis implements an alternative approach by employing the orthogonalized/instrumentalized sub-components of EF in a single regression model. The implications of the EF subcomponents will be compared among each other through these different empirical specifications.

(iv) Another very important contribution has to do with the introduction of interactions between EF and DI and between the sub-components of EF and DI. This is done to establish whether higher levels of EF drives increasing or decreasing implications of DI on inward FDI. In other words, the empirical analysis examines whether higher EF levels magnify or lessen the crowd-in or crowd-out effects on inward FDI.

(v) Finally, this thesis encompasses a supplementary contribution to the empirical literature by examining the variations in the effects of EF and EF sub-components across different categories and attributes. Specifically, it investigates potential non-linear effect of EF and EF sub-components on inward FDI. For instance, it considers whether the promoting effects of EF (and EF sub-components) on FDI

are lessened or magnified at higher levels of EF. Also, it examines the varying implications of EF and EF sub-components on inward FDI across different economic freedom categories (economic freedom level) and across different geo-economic (regional) categories.

1.3 Thesis Organization

This thesis is structured as follows. Chapter 2 presents the theoretical background underlining the determinants of inward FDI, focusing on EF as the determinant of interest. Chapter 3 presents and discusses the empirical models that are used to analyze the relationships between EF and inward FDI, and between the sub-components of EF and FDI. Also, Chapter 4 presents the benchmark empirical results of the relationship between EF (and the sub-components of EF) and FDI inflows. Chapter 5 discusses some supplementary empirical results of models used to analyze the relationship between EF-driven DI and FDI inflows and the relationship between the sub-components of EF-driven DI and FDI inflows. Results for non-linear theoretical models between EF and FDI inflows as well as non-linear theoretical models for the relationship between the sub-components of EF and FDI inflows are also discussed. Last in this section are the results for models that examine whether variations in the effect of EF (and the sub-components of EF) on inward FDI exists across different levels of EF, and across geo-economic regions. Chapter 6 summarizes the thesis and provide some potential policy recommendations based on our results.

CHAPTER TWO

2. THEORETICAL CONSIDERATIONS

There are various theories that examine the determinants of FDI. Dunning (1980, 1988) developed the Eclectic Paradigm Theory also known as the Ownership, Location, and Internalization (OLI) Paradigm Theory. This theory presents the principal FDI-promoting factors which are detailed as follows:

(i) *Ownership Advantages*: Accrues from the exclusive possession of certain intangible assets by MNEs that can be transferred to other countries in which they operate at lower costs hence allowing them to compete with foreign firms (Denisia, 2010). Ownership advantages may include monopoly advantages through ownership of natural resources, patents and trademarks, hence giving such firms privileged access to other markets (Denisia, 2010).

(ii) *Location Advantages*: After ownership advantages are fulfilled, it will be more beneficial for the MNEs to use the assets rather than renting them out or selling them to foreign firms (Denisia, 2010). Then, MNEs must decide which countries should be selected to set-up their plants and/or equipment for production and/or service delivery. The firms will do this by considering some factors in the host country that are listed as follows (Denisia, 2010):

- *Economic Advantages*, including market size of host country, transportation costs, the existence of both quantitative and qualitative factors of production such as land, labour, and capital.
- *Political Advantages*, including political stability, and government policies.

- *Social Advantages* including hospitality of the people in a nation, social network, and cultural diversity.

Hence, location choices of MNEs follow two basic investment decisions, the demand size and a risk assessment of the host country (Lautier and Moreaub, 2012).

(iii) *Internalization*: Internal operations within transnational firms are organized to gain specific advantages that are unique to such firms (Buckley and Carson, 1976). Hence, for firms to realize the opportunities for higher profits from sales of goods, cross-border market agreements can be put in place to achieve this.

As the theory above stipulates, the Location Advantages of the OLI Paradigm Theory explains what MNEs look out for before they invest in a country. Dunning (2009) categorizes the factors associated with the Location Advantages into four sub-categories, and identifies the definition of each sub-category, which has widened from the year 1970 to 1990. The sub-categories are presented as follows:

(i) *Resource Factors*, including availability, price and quality of natural resources, infrastructure for resource exploitation, and government restrictions on FDI.

(ii) *Market Factors*, including size of domestic markets and adjacent regional markets such as the European Union (EU) bloc, quality of local infrastructure, macroeconomic policies pursued by the government, real wage costs, materials costs, transport costs, institutions, and transaction costs.

(iii) *Efficiency Factors*, including freedom to engage in trade in intermediate and final products, investment incentives such as tax breaks and subsidized lands.

(iv) *Strategic Asset Factors*, including availability of knowledge-related assets and markets necessary to protect or enhance specific advantages of investing firms.

EF depicts one important attribute of the host country from the perspectives of MNEs. As such, EF can be included into Location Advantages' category, and can be characterized as one primary determinant of Inward FDI. As explained in the previous section, EF covers several elements. According to Fraser Institute's grouping, EF includes Legal System and Security of Property Rights, Access to Sound Money, Freedom to Trade Internationally (Free Trade), Regulation, and Size of Government. Considering the scope of definition of EF, EF covers element that can be classified into both Market Factors and Efficiency Factors sub-categories of Location Advantage. MNEs (through their foreign affiliates) want to maximize returns, favouring markets characterized by enhanced business environment and limiting restrictions on business operations. Higher levels of EF will render countries more attractive as hosts for inward FDI.

CHAPTER THREE

3. EMPIRICAL MODEL

3.1. Empirical Specifications

There is a wide range of empirical literature that examines the determinants of FDI (e.g., Schneider and Frey, 1985; Tsai, 1994; Loree and Guisinger, 1995; Asiedu, 2002; Zhao, 2003; Blonigen, 2005; Bénassy-Quéré et al., 2007; Blonigen and Piger; 2014; Tang et al., 2014). This empirical literature covered different factors that are deemed to be important determinants of inward FDI, including domestic market size (i.e., market size of the host country), foreign market potentials (i.e., market potentials in the host country and in countries neighbouring the host country), economic/trade openness, human capital, return on investment, quality of infrastructure, cost of capital, cost of labour, inflation, and domestic investment. The implications of these factors for inward FDI will be discussed later in this section.[5] Following the empirical literature that examines the relationship between FDI and institutional variables (e.g., Bengoa and Sanchez-Robbles, 2003; Bénassy-Quéré et al., 2007), the empirical analysis is carried out through static empirical models using a panel dataset.[6]

[5] Some studies examined the determinants of FDI in the context of the proximity-concentration hypothesis, which specifies FDI and trade as alternative commercial strategies in accessing foreign markets (e.g., Ghazalian and Furtan, 2008, 2009; Helpman et al., 2004; Brainard, 1997). For instance, high trade barriers would restrict trade flows to foreign markets. Hence, MNEs would use FDI as an alternative strategy to access foreign markets. Also, some studies examined the implications of Regional Trade Agreements (RTAs) for FDI and trade in the context of the proximity-concentration hypotheses (e.g., Ghazalian and Cardwell, 2010; Ghazalian and Furtan, 2008, 2009). For instance, when RTAs lead to significant reductions in trade barriers, cross-border trade could become a more appealing strategy in accessing foreign markets. This situation could result in reductions in horizontal FDI flows.

[6] The empirical analysis uses a panel data covering 117 developed and developing countries and spanning over the time period 1970-2013. More details are provided in the next section.

The empirical analysis examines the effects of EF on FDI. Letting $FDI_{i,t}$ represent aggregate FDI inflows into country i $(i = 1, \dots, N)$ at time t $(t = 1, \dots, T)$, the benchmark empirical equations is specified as:

(1) $$lnFDI_{i,t} = \alpha_0 + \alpha_1 EF_{i,t} + \boldsymbol{\alpha_2 X_{i,t}} + \varepsilon_{i,t}$$

where $EF_{i,t}$ represents the Economic Freedom Index, $\boldsymbol{X_{i,t}}$ is a vector of primary control variables that affect FDI inflows, and $\varepsilon_{i,t}$ is the error term. Following the empirical literature, the vector of control variables $\boldsymbol{X_{i,t}}$ includes market size, human capital, cost of capital, domestic investment, infrastructure/economic development, and foreign market potential. These variables will be discussed later in this section.

The empirical analysis goes a step further to assess the effect of the sub-components of EF on FDI inflows through the following empirical specification:

(2) $$lnFDI_{i,t} = \beta_0 + \beta_1 COMEF_{i,t}^{g} + \boldsymbol{\beta_2 X_{i,t}} + \mu_{i,t}$$

where $COMEF_{i,t}^{g}$ represents a sub-component "g" of Fraser Institute's EF index, covering Free Trade, Legal System and Property Rights, Regulation, Size of Government and Sound Money. The error term is represented by $\mu_{i,t}$.

We also explore an alternative empirical model that simultaneously includes all sub-components of EF through the following empirical specification:

(3) $$lnFDI_{i,t} = \gamma_0 + \boldsymbol{\gamma_1 COMEF_{i,t}^{g}} + \boldsymbol{\gamma_2 X_{i,t}} + \omega_{i,t}$$

where $\boldsymbol{COMEF_{i,t}^{g}}$ is a vector covering all sub-components of EF, and $\omega_{i,t}$ is the error term.

Through the empirical analysis, we also direct the attention towards examining the relationship between FDI and DI, and estimating the implications of EF and EF sub-components for this relationship. As such, we estimate the following empirical equations:

(4) $lnFDI_{i,t} = \delta_0 + \delta_1 EF_{i,t} + \delta_2 lnDI_{i,t} + \delta_3 lnDI_{i,t} \times EF_{i,t} + \boldsymbol{\delta_4 X_{i,t}} + \vartheta_{i,t}$, and

(5) $lnFDI_{i,t} = \rho_0 + \rho_1 COMEF^{g}_{i,t} + \rho_2 lnDI_{i,t} + \rho_3 lnDI_{i,t} \times COMEF^{g}_{i,t} + \boldsymbol{\rho_4 X_{i,t}} + \varpi_{i,t}$

where $DI_{i,t}$ represents domestic investment, and $\vartheta_{i,t}$ and $\varpi_{i,t}$ are the error terms. Equation (5) is estimated individually for each sub-component of EF.

We use a more flexible empirical specification. Categorical variables are created to classify EF (and the sub-components of EF) into 3 categories: low, medium and high EF (the same is also done for the sub-components of EF). The low EF (and sub-components of EF) categorization is dropped from the empirical equation, and it is used as the reference. The empirical equations that examine the effects of the overall EF index and the effect of individual EF sub-component on FDI can be respectively depicted as:

(6) $lnFDI_{i,t} = \lambda_0 + \lambda_1 MedEF_{i,t} + \lambda_2 HighEF_{i,t} + \boldsymbol{\lambda_3 X_{i,t}} + \nu_{i,t}$, and

(7) $lnFDI_{i,t} = \phi_0 + \phi_1 MedCOMEF^{g}_{i,t} + \phi_2 HighCOMEF^{g}_{i,t} + \boldsymbol{\phi_3 X_{i,t}} + \zeta_{i,t}$

In these equations, $MedEF_{i,t}$ and $MedCOMEF^{g}_{i,t}$ are dummy variables with a value of 1 when a medium EF index and a medium EF sub-component index are recorded, respectively, and 0 otherwise. Also, $HighEF_{i,t}$ and $HighCOMEF^{g}_{i,t}$ are dummy variables with a value of 1 when a high EF index and a high EF sub-component index are recorded, respectively, and 0 otherwise. The error terms are depicted by $\nu_{i,t}$ and $\zeta_{i,t}$ in these equations, respectively.

Also, we account for non-linearity in the relationship between $lnFDI_{i,t}$ and $EF_{i,t}$, and between $lnFDI_{i,t}$ and $COMEF_{i,t}^{g}$, through a polynomial (quadratic) function of EF. Thus, we estimate the empirical equations:

(8) $lnFDI_{i,t} = \tilde{\alpha}_0 + \tilde{\alpha}_1 EF_{i,t} + \tilde{\alpha}_2 EF_{i,t}^2 + \boldsymbol{\tilde{\alpha}_3 X_{i,t}} + \tilde{\varepsilon}_{i,t}$, and

(9) $lnFDI_{i,t} = \tilde{\beta}_0 + \tilde{\beta}_1 COMEF_{i,t} + \tilde{\beta}_2 COMEF_{i,t}^{g\,2} + \boldsymbol{\tilde{\beta}_3 X_{i,t}} + \tilde{\mu}_{i,t}$

Next, we examine variations in the effects of EF on FDI inflows across developing regions, covering LAC, MENA, SA or SSA. Letting *R* depict a region (with *R*= LAC, MENA, SA, SSA) and using higher EF category as the reference, the empirical equation can be specified as:

(10) $lnFDI_{i,t} = \theta_0 + \theta_1 LowerEF_{i,t} + \theta_2 LowerEF_{i,t}^{(R)} + \boldsymbol{\theta_3 X_{i,t}} + \xi_{i,t}$

In this equation, $LowerEF_{i,t}$ is dummy variables with a value of 1 when a lower EF index is recorded and 0 otherwise across all developing regions (including region *R*); $LowerEF_{i,t}^{(R)}$ is the corresponding region-specific dummy variable that takes the value of one when a lower EF index is recorded for country i belonging to region *R* at time t and 0 otherwise. The dummy variable covering the higher EF category is set as the reference, and the coefficients θ_1 and θ_2 are estimated relative to the higher EF category.

3.2. Variables and Data

In this sub-section, we discuss the variables used through the empirical exercise including the main independent variable EF and the primary control variables. We present the expected effects on FDI inflows. As discussed earlier the vector $\boldsymbol{X_{i,t}}$ includes several

control variables that are commonly included as determinants of FDI inflows in the empirical literature (e.g., Tsai, 1994; Asiedu, 2002; Zhao, 2003; Bengoa and Sanchez-Robbles, 2003; Blonigen, 2005; Bénassy-Quéré et al., 2007; Blonigen and Piger; 2014; Tang et al., 2014).

Economic Freedom: The investment climate is crucial in attracting FDI (Quazi, 2007). Firms can engage in risky investments with potentially higher returns such as FDI when there are free and competitive markets (Azman-Saini et al., 2010). The Fraser Institute's EF Index is a reliable index that captures the investment climate of a host country (Quazi, 2007). This EF index encompasses several factors, including Free Trade, Legal System and Property Rights, Regulation, Size of Government, and Sound Money. We expect a positive implication of EF and EF sub-components for FDI inflows.

Market Size: If the main objective of MNEs is to serve the domestic markets in which they are operating, then domestic demand is crucial (Quazi, 2007). A larger domestic market is associated with higher demand for products made by MNEs. Following the empirical literature (e.g., Jaspersen et al., 2000; Tsai, 1994; Edwards, 1990; Schneider and Frey, 1985), we use GDP as a proxy for market size. We expect a positive relationship between market size and FDI inflows.

Quality of Infrastructure/Economic Development: Quality of infrastructure increases investment productivity and consequently encourages FDI inflows (Asiedu, 2002). MNEs account for the quality of infrastructure in determining their investment decisions depending on the specific requirements of the industries in which they operate (Loree & Guisinger, 1995). Quality of infrastructure seems to be significantly linked to GDP per capita (Straub & Terada-Hagiwara, 2010). High GDP per capita may also reflect

high purchasing power of consumers, which is an incentive for FDI (Bénassy-Quéré et al., 2007). We will use GDP per capita as a proxy for quality of infrastructure/economic development. We expect a positive relationship between quality of infrastructure/economic development and FDI inflows.

Foreign Market Potential: MNEs seek to locate in international markets where they will have superior access (Head and Mayer, 2004). Specifically, they seek locations that do not only give them access to domestic market of the host country but also to neighbouring markets and economic partnership markets of the host country. Changes in a country's foreign market access comes about as a result of aggregate import demand from neighbouring countries (Redding and Venables, 2004). The proximity to aggregate demand from neighbouring countries compels MNEs to locate in such host countries to export and to meet the demand of the neighbouring markets. We construct a measure of Foreign Market Potential following Head and Mayer (2004). This market potential measure does not include own demand of the host country, since the latter is represented by a separate variable. We expect a positive effect of Foreign Market Potential on FDI inflows.

Cost of Capital: MNEs have the advantage of borrowing capital either from the home country or the host country of FDI. For the purpose of our analysis, we concentrate on the cost of capital that prevails in the host country since we are more interested in conditions pertaining to the host country in attracting inward FDI. High costs of borrowing can limit the inflow of FDI when the main source of borrowing of MNEs is from the host country. MNEs may also be indifferent or may even increase their foreign investment when they circumvent the higher cost of capital in the host country, by obtaining their funds to finance investment from their home countries (characterized by a lower cost of capital).

Consequently, if the cost of capital is higher in the host country than in the home country, MNEs have a cost advantage over domestic firms and, hence, FDI inflows tend to increase (Liu et al., 1997). For example, Zhao (2003) finds that FDI inflows are high when the host country cost of capital is high relative to source country. We will use the Real Interest Rate prevailing in the host country from the World Bank database.

Human Capital: The cost of labour as a location advantage has become less relevant compared to the availability of skilled and educated labour as a determinant of FDI (Noorbakhsh et al., 2001). This propensity is primarily associated with technological innovation and the shift of FDI towards skill-intensive, knowledge-intensive, and capital-intensive industries (Pfeffermann and Madarassay, 1992). Various salient functions within MNEs (e.g., research and development, accounting, finance, human resource development, production and distribution) require professionals trained in that activity (UNCTAD, 1994). Relying solely on low-cost and low-skilled labour to attract FDI from MNEs across high value-added industries may be difficult as they require highly skilled and educated labour force for their operations (Noorbakhsh et al., 2001). In the same way, domestic firms that employ advanced methods of production and service delivery will require highly skilled labour to be able to undertake their operations. The Secondary School Enrolment Ratio is employed as a proxy for human capital through the empirical analysis.

Domestic Investment: DI is deemed to be an important determinant of FDI. DI, which includes both private and public DI, can either work to increase or decrease FDI. If there are many business opportunities, domestic firms take advantage of such opportunities to invest, hence increasing private DI (Lautier and Moreaub, 2012). MNEs usually exploit the same business opportunities that domestic firms exploit. Domestic firms often have the

advantage of knowing their domestic market. Nevertheless, MNEs may follow-up by increasing their investments in such host countries to take advantage of the business opportunities. This is because MNEs could own other competitive assets like brand, scale, technology and managerial skills that local firms may not necessarily have (Dunning, 1988). In this case, DI crowds-in FDI. The reverse can also occur when domestic firms in addition to accurate knowledge possess the other competitive assets that MNEs do not possess. In this case, domestic firms can reduce the inflow of FDI. Hence, DI can reflect increases in investment opportunities in the host country, which could promote increases in FDI inflows. Meanwhile, disproportionate increases in DI could reduce the investment opportunities for MNEs, leading to decreases in FDI inflows. The coefficient on DI reflects the net outcome of these various effects. Through the empirical analysis, we will use domestic Gross Capital Formation (GCF) as a proxy for DI.

The empirical analysis uses a panel data covering 117 developed and developing countries, which are listed in Table A1 of the Appendix, over the time period 1970-2013. The scope of time period and countries satisfies large sample properties.[7] The empirical analysis relies on the index of EF developed by the Fraser Institute. The Fraser Institute's Index of Economic Freedom has a mean of 5.989 and a standard deviation of 1.392. The EF index reveals important variations across countries. For example, Thailand in 1975 and Bangladesh in 2000 reported an EF index of 6.013. Madagascar in 2000 reported an index of 5.960. The highest reported index of EF, 9.151 was for Hong Kong in 1995. Nicaragua reported the lowest recorded EF index of 1.779 in 1985. Data for FDI and DI (which is

[7] The panel dataset is based on the availability of data for the key variables under consideration, namely EF, FDI and DI.

proxied by GCF) as well as all independent variables (except EF and Foreign Market Potential) are obtained from the World Bank and the United National Conference of Trade and Development (UNCTAD). Data on Foreign Market Potential are determined using the method of Head and Mayer (2004) as presented in the *Centre d'Études Prospectives et d'Information Internationales* (CEPII). The current US$ is converted to constant 2010 US$ using the GDP deflator.[8]

3.3. Empirical Issues

Upon preliminary investigation of possible collinearity between the independent variables, pairwise correlations between the variables are estimated. There is a correlation of 0.703 between EF and *ln GDP per capita*. Also, there is a possible endogeneity between EF and FDI inflows. For instance, improvements in EF can attract FDI inflows but the reverse may also be true. Increased FDI inflows can compel governments to pursue policies that will promote EF to maintain or even increase FDI inflows. To tackle the collinearity and endogeneity issues, we follow the approach used by Bénassy-Quéré et al. (2007) by orthogonalizing the EF variable with respect to *ln GDP per capita* through a three-step procedure.

For the first step, we regress the EF variable on *ln GDP per capita*:

$$EF_{i,t} = a_o + a_1 \ln GDP\ per\ capita_{i,t} + \eta_{i,t} \quad (11)$$

[8] Summary statistics at the current US$ are presented in Table A2 of the Appendix.

Upon estimation of the regression equation, we obtain the predicted residuals, $\hat{\eta}_{i,t}$ of the regression equation. Hence, we can say that $\hat{\eta}_{i,t}$ is that portion of EF that excludes the implications of the linear function of *ln GDP per capita*.

Secondly, we instrumentalize the residuals using the lag of the predicted residual as follows:

(12) $\hat{\eta}_{i,t} = b_0 + b_1\hat{\eta}_{i,t-k} + \varphi_{i,t}$

This approach tackles endogeneity, and accounts for the possibility of persistence of the EF variable on ln FDI inflows. We choose a five-year lag because prior to 2000, the Fraser Institute's EF was recorded in a five-year frequency. The five-year lag is also used in Bénassy-Quéré et al. (2007).[9]

The third step is to construct an instrumentalized EF variable as shown below using the five-year lag of the residual and the constant and coefficients of the estimated regression equation in the second step:

(13) $\widehat{IEF} = \hat{b}_0 + \hat{b}_1\hat{\eta}_{i,t-k}$

The correlation between the instrumentalized EF, (i.e., *IEF*) and *ln GDP per capita* is drastically reduced to 0.064 compared to the correlation between EF and *ln GDP per capita* of 0.703.

We follow the same steps in orthogonalizing and instrumentalizing variables that are highly correlated to economic development, to tackle the multicollinearity and

[9] Bénassy-Quéré et al. (2007) carried out the analysis using bilateral observations. They constructed the predicted residual $\hat{v}_{ij} = |\hat{v}_i - \hat{v}_j|$, and define the 3×1 vector $\boldsymbol{V_{ij}} = (\hat{v}_i, \hat{v}_j, \hat{v}_{ij})$, which is interpreted as the institutional 'qualities' and 'distance' not related to *ln GDP per capita*.

endogeneity issues. For instance, there is a high correlation between *Secondary School Enrolment Ratio* and *ln GDP per capita* of 0.8329. Using the same three-step procedure, *Secondary School Enrolment Ratio* is orthogonalized with respect to *ln GDP per capita* and then instrumentalized using a one-year lag of the residual of *Secondary School Enrolment Ratio.*

CHAPTER FOUR

4. BENCHMARK EMPIRICAL RESULTS

This section discusses the benchmark empirical results. We first examine the implications of the overall EF index for FDI, according to equation (1). Then, we analyze the effects of the sub-components of EF on FDI, according to equations (2) and (3). Hence, we first take each sub-component in separate empirical equations, and then we combine all sub-components in one model to assess its effect on FDI. The EF sub-components exhibit high level of correlation. Thus, we use the empirical technique adapted from Bénassy-Quéré et al. (2007), which will be described later in this section, to tackle this issue.

4.1. Effect of EF on FDI

Table 4.1a and Table 4.1b (shown below) display the effect of EF and the other independent variables on the FDI. The difference between Table 4.1a and Table 4.1b is that the latter has an additional independent variable, *ln Foreign Market Potential*, to capture market opportunities outside the host country (see section 3.2). Table 4.1a progresses from a basic empirical model that exclusively include EF and *ln GDP per capita* as independent variables. Other variables are gradually included through the subsequent columns. We end up with columns *(5)* of Table 4.1 that present the results from a complete model with all variables mentioned in Chapter 3 being included, except *ln Foreign Market Potential*. Table 4.1b is similarly structured, starting with a basic empirical specification that include *ln Foreign Market Potential* and *ln GDP*, in addition to *ln GDP per capita*, as independent variables in all model specifications. Table 4.1b starts with column *(2')* to make a correspondence to the columns in Table 4.1a. Table 4.1a and Table 4.1b show that most of

the estimated coefficients of the independent variables in the models have the expected signs and they are statistically significant. We will focus on the results derived from the complete empirical specifications in columns *(5)* and *(5')* of Table 4.1a and Table 4.1b, respectively, to carry out the discussion of the empirical results.

Table 4.1a

Effect of Economic Freedom on Foreign Direct Investment

(Benchmark Model)

Dependent Variable: Log of FDI Inflows

	(1)	*(2)*	*(3)*	*(4)*	*(5)*
Economic Freedom	0.741a	0.652a	0.572a	0.585a	0.572a
	(0.041)	(0.033)	(0.036)	(0.041)	(0.041)
ln GDP per capita	1.032a	0.941a	0.953a	0.929a	0.954a
	(0.023)	(0.019)	(0.020)	(0.023)	(0.024)
ln GDP market price		0.820a	0.814a	0.837a	0.824a
		(0.016)	(0.017)	(0.019)	(0.018)
ln Real Interest Rate			0.236	0.012	0.013
			(0.165)	(0.213)	(0.226)
Secondary School Enrolment Ratio				1.818a	1.844a
				(0.152)	(0.154)
ln Domestic Investment					0.791a
					(0.167)
Constant	16.069a	16.368a	16.350a	16.450a	16.233a
	(0.196)	(0.161)	(0.175)	(0.197)	(0.212)
Number of Observations	3,868	3,866	3,313	2,581	2,551
R-squared	0.432	0.672	0.690	0.701	0.706
Root Mean Square Error (RMSE)	2.019	1.535	1.524	1.484	1.472

Notes: Robust standard errors are reported in parentheses. In this table, “a” indicates statistical significance at the 1% level.

Table 4.1b

Effect of Economic Freedom on Foreign Direct Investment

(Benchmark Model)

Dependent Variable: Log of FDI Inflows

	(2')	*(3')*	*(4')*	*(5')*
Economic Freedom	0.514a	0.453a	0.478a	0.460a
	(0.033)	(0.035)	(0.039)	(0.039)
ln GDP per capita	0.811a	0.809a	0.761a	0.784a
	(0.021)	(0.023)	(0.027)	(0.028)
ln GDP market price	0.800a	0.799a	0.811a	0.797a
	(0.015)	(0.016)	(0.018)	(0.018)
ln Foreign Market Potential	0.384a	0.409a	0.426a	0.436a
	(0.023)	(0.026)	(0.030)	(0.030)
ln Real Interest Rate		0.201	0.033	0.037
		(0.156)	(0.212)	(0.225)
Secondary School Enrolment Ratio			1.282a	1.291a
			(0.151)	(0.153)
ln Domestic Investment				0.848a
				(0.164)
Constant	12.222a	11.929a	12.003a	11.658a
	0.269	(0.300)	(0.336)	(0.343)
Number of Observations	3,866	3,313	2,581	2,551
R-squared	0.691	0.709	0.722	0.728
Root Mean Square Error (RMSE)	1.489	1.476	1.431	1.416

Notes: Robust standard errors are reported in parentheses. In this table, "a" indicates statistical significance at the 1% level.

As shown in Table 4.1a and Table 4.1b, improvements in the overall EF index lead to increases the inflows of FDI and this is consistent with some initial empirical findings (e.g., Bengoa and Sanchez-Robbles, 2003; Quazi, 2007; Azman-Saini et al., 2010). The magnitude for the estimated coefficients on EF ranges from 0.453 to 0.741 across Table 4.1a and Table 4.1b. Concentrating on the estimated coefficient of EF for model

specification that corresponds to column *(5)* with magnitude 0.572, we can say that a unit increase in the EF index of a host country would lead to increases in the inflows of FDI by 57.2%, ceteris paribus. Similarly, a unit increase in EF index of a host country would lead to increases in the inflows of FDI by 46.0% for model specification that corresponds to column *(5').* For example, the EF index for Argentina was 5.18 in 2013 and the value of FDI inflows was 9.30 billion of constant 2010 US$ in 2013. Using model *(5')*, an increase in the EF index from 5.18 to 6.18 implies that FDI inflows will increase from about 9.30 billion of constant 2010 US$ to approximately 13.58 billion of constant 2010 US$ (*i.e.*, a significant increase of 4.28 billion of constant 2010 US$). These results indicate that countries that are economically free stand to benefit from an increased inflow of FDI. Thus, they could highlight few conditions for the FDI inflows to increase.

(i) The spending of individuals, households and businesses must increase relative to government spending. Also, transfers and subsidies must be minimized. This is because when personal and private choices are substituted for political choices by government imposing heavy taxes on some sections of individuals, households and businesses and transfer these taxes in the form of government spending to others, they decrease the liberty of other individuals, households and businesses from keeping what they earn (Gwartney, et al., 2015). This discourages private spending further discouraging the inflows of FDI.

(ii) Individuals, household and firms should be able to rightfully acquire and protect personal property. This will encourage MNEs to undertake investments in host countries that satisfy these conditions.

(iii) Individuals, households and firms should increasingly be able to have access to sound money. Sound monetary policy, low and stable inflation and access to other credible alternative currencies preserve the value of investments which promote MNEs to increase investments in host countries that satisfy these conditions.

(iv) Countries must be given the freedom to trade internationally. Lower tariffs and export taxes, minimal trade quotas and less bureaucratic custom procedures give MNEs more freedom with their investment choices and promises greater profits, hence leading to increase in the inflows of FDI to the corresponding host countries.

(v) Fewer market regulations give MNEs the freedom to move or exchange physical and human capital as well as final goods and services. Hence, MNEs identifying sectors with potentially bigger profits can move or exchange such capital to maximise profits. The ease of movement or exchange encourages the inflows of FDI.

There are other interesting results in Table 4.1a and Table 4.1b. For instance, GDP per capita, which is a proxy for the quality of infrastructure, is seen to have a positive impact on the inflows of FDI. This is consistent with some previous empirical findings (e.g., Schneider and Frey, 1985; Tsai, 1994; Lipsey, 1999). The estimated coefficient on *ln GDP per capita* ranges from 0.761 to 1.032 across Table 4.1a and 4.1b. For example, using the results in column *(5)* of Table 4.1a, a 1% increase in GDP per capita (proxying the quality

of infrastructure, among others)[10] would lead to increases in the inflows of FDI by 0.954%. As an illustration using statistics for Argentina in 2013, a 10% increase in GDP per capita from approximately 13,674.1 constant 2010 US$ to approximately 15,041.5 constant 2010 US$ will increase the inflows of FDI from 9.30 billion of constant 2010 US$ to about 10.19 billion of constant 2010 US$. Also, using the estimates obtained from the alternative empirical specification in column *(5')* in Table 4.1b, we find that a 1% increase in GDP per capita increases the inflows of FDI by 0.784%.

The natural log of GDP at market price, which is a proxy for domestic market size also has a positive effect on FDI. This result is consistent with previous empirical findings (e.g., Edwards, 1990; Chowdhury and Mavrotas, 2006; Pao and Tsai, 2010). Using the results presented in column *(5)* in Table 5.1a, we find that a 1% increase in domestic market size would lead to increases in the inflows of FDI by 0.824%. A similar result in terms of direction and magnitude of the effect of domestic market size on FDI is obtained from the empirical specification that produces the results obtained in column *(5')* of Table 4.1b.

The effect of cost of borrowing in the host country for FDI inflows, which is depicted by the real interest rate, is not statistically significant for all the specifications in both tables. The economic significance of this result is that MNEs do not rely on the host countries for loans to finance their investments but rather obtain funds from their home countries and/or from alternative sources. Hence, MNEs are not bothered by the cost of borrowing in their host countries, which does not affect the inflow of FDI in effect. In this

[10] As previously mentioned, GDP per capita also proxies for the purchasing power of individuals in the host country.

context, Liu *et al.* (1997) similarly found that the cost of borrowing in the host country of FDI is statistically and economically insignificant.

When MNEs are taking decisions on where to set up their foreign affiliates, the availability of skilled labour is often an essential requirement. From our tables, we find that an increase in the quality of human capital, which is proxied by *Secondary School Enrolment Ratio*, significantly promotes the inflows of FDI. Specifically, an increase in the *Secondary School Enrolment Ratio* by 0.1 (*i.e.*, 10 percentage points) is associated with increases in the inflows of FDI by 18.4% and 12.9% in column *(5)* of Table 4.1a and column *(5')* in Table 4.1b, respectively. This is similar to the findings of Schneider and Frey (1985), and Hanson (1996), Noorbakhsh et al (2001).

Domestic investment is an important factor that MNEs consider when making their investment decisions. Specific advantage of a firm as depicted through the Eclectic Paradigm Theory by Dunning (1988) that identifies market imperfections as a factor that gives a firm competitive advantage over rival firms. MNEs will increase their foreign investment to follow increases in domestic investment. Domestic firms may have competitive advantages in terms of domestic market knowledge, which promotes their investments in the domestic market. Despite this advantage, MNEs could raise their foreign investments because MNEs may have specific advantages in terms of brand, scale and technology (Lautier and Moreaub, 2012). Also, there are other (mostly intangible) assets that characterize many MNEs, including management skills, channels for marketing products on international markets, and quality characteristics of products. These assets often given MNEs an important advantage over local firms (Agosin and Machado, 2005). As previously mentioned, DI can reflect increases in overall investment opportunities in

the host country, which could promote increases FDI inflows. Meanwhile, disproportionate increases in DI could reduce the investment opportunities for MNEs, leading to decreases in FDI inflows. The results show a positive effect of DI on FDI inflows. They indicate that overall increases in investment opportunities are associated with increases in FDI inflows. Specifically, column *(5)* in Table 4.1a show that a 1% increase in DI is associated with 0.791% increase in FDI inflows, ceteris paribus. Also, column *(5')* of Table 4.1b indicates that a 1% increase in DI corresponds to 0.848% increase in FDI inflows, ceteris paribus. These results are consistent with some previous empirical findings (e.g., Lautier and Moreaub, 2012).

As already indicated, Table 4.1b presents the results from empirical specifications that include a supplementary independent variable reflecting Foreign Market Potential. The GDP of the host country describes the domestic market size and, hence, it reflects potential sales/returns for MNEs in host countries. Foreign Market Potential depicts capacity of MNEs to get access to a wider market based on the location of their host country. This is because MNEs can have access to neighbouring markets by setting up in a host country. The estimated coefficient of *ln Foreign Market Potential* ranges between 0.384 and 0.436 across the columns of Table 4.1b. The estimated coefficient of 0.436 in column *(5')* indicates that a 1% increase in Foreign Market Potential leads to increases in the inflows of FDI by 0.436%, ceteris paribus.

Table 4.2a and Table 4.2b (shown below) display the results from a random effect model using the empirical specification without and with Foreign Market Potential, respectively. The empirical specification across the columns of these tables correspond to

those in Table 4.1a and Table 4.1b, respectively. The results are found to be comparable to those obtained through the benchmark model.

Table 4.2a

Effect of Economic Freedom on Foreign Direct Investment

(Random Effect Model)

Dependent Variable: Log of FDI Inflows

	(1)	(2)	(3)	(4)	(5)
Economic Freedom	0.883a	0.653a	0.581a	0.554a	0.523a
	(0.033)	(0.032)	(0.035)	(0.043)	(0.043)
ln GDP per capita	1.284a	1.006a	1.040a	1.083a	1.089a
	(0.049)	(0.042)	(0.044)	(0.047)	(0.047)
ln GDP market price		1.279a	1.181a	1.051a	1.032a
		(0.052)	(0.056)	(0.059)	(0.059)
ln Real Interest Rate			0.527a	0.299c	0.221
			(0.129)	(0.161)	(0.160)
Secondary School Enrolment Ratio				1.913a	2.166a
				(0.225)	(0.228)
ln Domestic Investment					0.811a
					(0.104)
Constant	13.944a	15.647a	15.493a	15.112a	15.059a
	(0.431)	(0.355)	(0.374)	(0.404)	(0.403)
Number of Observations	3,868	3,866	3,313	2,581	2,551
R-squared	0.432	0.653	0.679	0.699	0.704

Notes: Robust standard errors are reported in parentheses. In this table, “a” indicates statistical significance at the 1% level.

Table 4.2b

Effect of Economic Freedom on Foreign Direct Investment

(Random Effect Model)

Dependent Variable: Log of FDI Inflows

	(2')	*(3')*	*(4')*	*(5')*
Economic Freedom	0.422a	0.350a	0.402a	0.349a
	(0.033)	(0.036)	(0.043)	(0.043)
ln GDP per capita	0.765a	0.783a	0.761a	0.738a
	(0.041)	(0.044)	(0.051)	(0.051)
ln GDP market price	0.909a	0.922a	0.870a	0.834a
	(0.053)	(0.055)	(0.057)	(0.057)
ln Foreign Market Potential	0.645a	0.669a	0.642a	0.702a
	(0.032)	(0.037)	(0.046)	(0.046)
ln Real Interest Rate		0.337a	0.184	0.083
		(0.123)	(0.156)	(0.154)
Secondary School Enrolment Ratio			0.496b	0.667a
			(0.239)	(0.239)
ln Domestic Investment				0.986a
				(0.100)
Constant	8.984a	8.518a	9.054a	8.435a
	(0.472)	(0.528)	(0.581)	(0.580)
Number of Observations	3,866	3,313	2,581	2,551
R-squared	0.685	0.703	0.717	0.721

Notes: Robust standard errors are reported in parentheses. In this table, "a" indicates statistical significance at the 1% level.

4.2. Effect of EF on FDI – 2000 and beyond

The results in Section 4.1 are obtained from a panel dataset spanning over the time period 1970-2013. It would be interesting to find out whether restricting the data to the time period 2000-2013 will reveal any recent trends on the importance of EF and other determinants in terms of FDI inflows. We carry out the regressions for the time period

indicated above and come out with the results displayed in Table 4.3a and Table 4.3b that are presented below. Concentrating on model specifications that correspond to columns *(5)* of Table 4.3a and *(5')* of Table 4.3b, we realize that the signs of the estimated coefficients of EF and other determinants do not change when compared with their corresponding specifications in Table 4.1a and 4.1b, respectively. The magnitude of all the estimated coefficients of EF and other determinants in columns *(5)* and *(5')* exhibit limited variation, except for the estimated coefficients of the real interest rate, which become statistically significant at the 5% level and stand at 1.166 in column *(5)* of Table 4.3a and 1.118 in column *(5')* of Table 4.3b.

The other notable difference is the diminished prominence of *Secondary School Enrolment ratio* as the estimated coefficient becomes statistically insignificant in column *(5)* of Table 4.3a and statistically significant at the 5% level in column *(5')* of Table 4.3b. This is because countries (particularly developing countries) over the years especially in recent times (2000 and beyond) have strived to improve enrolment of students in schools causing high secondary school enrolment ratios in most countries, thus reducing the variability in the secondary school enrolment ratio variable. This result could indicate that MNEs have been meeting their requirements in terms of skilled labour more easily over recent years across host countries. Finally, the results suggest that the effect of DI on FDI inflows have decreased over time. Increase in DI reflects increases in overall investment opportunities in the host country, which would promote FDI inflows. The implications of these opportunities appear to have slowed down in the second sub-period. This outcome could be indicative of increases in crowd-out factor associated with increase in DI, which would reduce investment opportunities for MNEs.

Table 4.3a

Effect of Economic Freedom and Foreign Direct Investment

(Time period 2000-2013)

Dependent Variable: Log of FDI Inflows

	(1)	*(2)*	*(3)*	*(4)*	*(5)*
Economic Freedom	0.235a	0.305a	0.374a	0.403a	0.383a
	(0.076)	(0.055)	(0.060)	(0.074)	(0.074)
ln GDP per capita	0.937a	0.875a	0.890a	0.882a	0.896a
	(0.035)	(0.028)	(0.030)	(0.037)	(0.037)
ln GDP market price		0.784a	0.785a	0.787a	0.783a
		(0.021)	(0.021)	(0.026)	(0.026)
ln Real Interest Rate			0.769a	1.082b	1.179b
			(0.230)	(0.494)	0.512
Secondary School Enrolment Ratio				0.526	0.469
				(0.335)	(0.334)
ln Domestic Investment					0.437b
					(0.178)
Constant	17.955a	18.092a	17.911a	17.965a	17.823a
	(0.313)	(0.246)	(0.275)	(0.345)	(0.349)
Number of Observations	1,127	1,127	1,087	840	831
R-squared	0.435	0.736	0.737	0.713	0.716
Root Mean Square Error (RMSE)	1.710	1.169	1.179	1.208	1.202

Notes: Robust standard errors are reported in parentheses. In this table, “a” and “b” indicate statistical significance at the 1% level and 5% level, respectively.

Table 4.3b

Effect of Economic Freedom on Foreign Direct Investment

(Time Period 2000-2013)

Dependent Variable: Log of FDI Inflows

	(2')	*(3')*	*(4')*	*(5')*
Economic Freedom	0.297a	0.367a	0.417a	0.397a
	(0.056)	(0.061)	(0.075)	(0.075)
ln GDP per capita	0.813a	0.824a	0.785a	0.802a
	(0.031)	(0.034)	(0.042)	(0.042)
ln GDP market price	0.783a	0.784a	0.787a	0.783a
	(0.021)	(0.021)	(0.026)	(0.026)
ln Foreign Market Potential	0.164a	0.169a	0.223a	0.217a
	(0.043)	(0.044)	(0.048)	(0.048)
ln Real Interest Rate		0.753a	1.052b	1.155b
		(0.234)	(0.496)	(0.516)
Secondary School Enrolment Ratio			0.811b	0.747b
			(0.339)	(0.338)
ln Domestic Investment				0.441b
				(0.178)
Constant	16.264a	16.052a	15.588a	15.505a
	(0.551)	(0.560)	(0.619)	(0.625)
Number of Observations	1,127	1,087	840	831
R-squared	0.739	0.741	0.720	0.723
Root Mean Square Error (RMSE)	1.162	1.172	1.195	1.190

Notes: Robust standard errors are reported in parentheses. In this table, “a” and “b” indicate statistical significance at the 1% level and 5% level, respectively.

4.3. Effects of Sub-Components of EF on FDI

The following Table 4.4a and Table 4.4b present the results from the empirical equation (2) that examines the implications of the sub-components of EF on FDI inflows. Table 4.4a shows the effects of Free Trade, Legal System and Property Rights, and Regulation on FDI inflows, whereas Table 4.4b shows the effects of Size of Government and Sound Money on FDI inflows. As previously indicated, each sub-component of EF is orthogonalized with respect to *ln GDP per capita* to remove collinearity issues and account for endogeneity, following Bénassy-Quéré et al. (2007).

In Table 4.4c, we present the results from an alternative empirical specification that includes all sub-components of EF in one model, and examine their effect on FDI inflows. There are relatively high levels of correlation between the sub-components of EF. Hence, since we include all sub-components in a single model, we go a step further to orthogonalize each sub-component with respect to *ln GDP per capita,* and the other sub-components of EF. This inclusion of these orthogonalized sub-components allows us to disentangle the effect of each sub-component of FDI inflows.

Columns *(1)* through *(5)* of Table 4.4a and Table 4.4b present the results from the empirical specifications that exclude *ln Foreign Market Potential*, whereas columns *(1')* through *(5')* present the results from the empirical specifications that include *ln Foreign Market Potential*. Similarly, column *(1)* of Table 4.4c show the results from the empirical specification that excludes *ln Foreign Market Potential*, whereas column *(1')* present the results from the empirical specifications that include *ln Foreign Market Potential*. Through these tables, we find that the estimated coefficients on the sub-components of EF are positive and statistically significant, indicating that these sub-components of EF have

promoting implications for FDI inflows. The estimated coefficients on the non-EF determinants of FDI inflows are similar in terms of sign and magnitude to those produced by the benchmark models in Table 4.1a and Table 4.1b. Therefore, the discussion will focus on the estimated coefficients of the sub-components of EF.

Table 4.4a

Effects of Sub-Components of Economic Freedom on Foreign Direct Investment
(Benchmark Model)

Dependent Variable: Log of FDI Inflows

	Free Trade		Legal System and Property Rights		Regulation	
	(1)	*(1')*	*(2)*	*(2')*	*(3)*	*(3')*
EF Sub Component	0.395a	0.300a	0.375a	0.271a	0.327a	0.336a
	(0.029)	(0.028)	(0.037)	(0.037)	(0.034)	(0.034)
ln GDP per capita	0.952a	0.781a	0.957a	0.782a	0.956a	0.752a
	(0.026)	(0.032)	(0.024)	(0.028)	(0.025)	(0.029)
ln GDP market price	0.811a	0.789a	0.831a	0.805a	0.866a	0.826a
	(0.019)	(0.018)	(0.018)	(0.018)	(0.019)	(0.018)
ln Foreign Market		0.414a		0.447a		0.514a
Potential		(0.032)		(0.030)		(0.030)
ln Real Interest Rate	-0.116	-0.024	0.359	0.323a	0.312a	0.219a
	(0.231)	(0.232)	(0.223)	(0.220)	(0.248)	(0.242)
Secondary School	1.519a	1.057a	1.941a	1.370a	2.122a	1.383a
Enrolment Ratio	(0.161)	(0.159	(0.151)	(0.152)	(0.157)	(0.154)
ln Domestic Investment	0.747a	0.802a	0.801a	0.860a	0.926a	0.966a
	(0.175)	(0.173)	(0.162)	(0.161)	(0.172)	(0.168)
Constant	16.265a	12.013a	16.236a	11.541a	16.204a	10.832a
	(0.229)	(0.347)	(0.212)	(0.351)	(0.217)	(0.342)
Number of Observations	2,413	2,413	2,556	2,556	2,552	2,552
R-squared	0.689	0.710	0.698	0.721	0.693	0.725
Root Mean Square Error (RMSE)	1.469	1.420	1.491	1.433	1.504	1.424

Notes: Robust standard errors are reported in parentheses. In this table, "a" indicates statistical significance at the 1% level.

Table 4.4b

Effects of Sub-Components of Economic Freedom on Foreign Direct Investment

(Benchmark Model)

Dependent Variable: Log of FDI Inflows

	Size of Government		Sound Money	
	(4)	*(4')*	*(5)*	*(5')*
EF Sub-Component	0.154a	0.153a	0.192a	0.117a
	(0.023)	(0.022)	(0.032)	(0.030)
ln GDP per capita	0.965a	0.769a	0.963a	0.768a
	(0.025)	(0.028)	(0.025)	(0.029)
ln GDP market price	0.863a	0.824a	0.842a	0.811a
	(0.019)	(0.018)	(0.019)	(0.018)
ln Foreign Market Potential		0.504a		0.495a
		(0.030)		(0.031)
ln Real Interest Rate	0.242	0.152	0.450	0.276
	(0.224)	(0.223)	(0.347)	(0.330)
Secondary School Enrolment Ratio	2.145a	1.366a	2.144a	1.456a
	(0.161)	(0.159)	(0.166)	(0.162)
ln Domestic Investment	0.890a	0.946a	0.830a	0.905a
	(0.167)	(0.163)	(0.172)	(0.167)
Constant	16.153a	10.872a	16.180a	10.999a
	(0.213)	(0.343)	(0.223)	(0.357)
Number of Observations	2,611	2,611	2,517	2,517
R-squared	0.687	0.719	0.685	0.713
Root Mean Square Error (RMSE)	1.513	1.435	1.524	1.454

Notes: Robust standard errors are reported in parentheses. In this table, “a” indicates statistical significance at the 1% level.

Table 4.4c

Effects of Sub-Components of Economic Freedom on Foreign Direct Investment

(Alternative Model)

Dependent Variable: Log of FDI Inflows

	(1)	*(1')*
Regulation	0.636a	0.627a
	(0.058)	(0.057)
Sound Money	0.316a	0.215a
	(0.046)	(0.043)
Size of Government	0.151a	0.173a
	(0.038)	(0.037)
Property Rights	0.565a	0.436a
	(0.053)	(0.051)
Free Trade	0.667a	0.511a
	(0.047)	(0.046)
ln GDP per capita	0.938a	0.766a
	(0.026)	(0.031)
ln GDP market price	0.804a	0.792a
	(0.019)	(0.019)
ln Foreign Market Potential		0.420a
		(0.031)
ln Real Interest Rate	-0.345	-0.322
	(0.338)	(0.338)
Secondary School Enrolment Ratio	1.438a	1.005a
	(0.156)	(0.155)
ln Domestic Investment	0.729a	0.831a
	(0.179)	(0.173)
Constant	15.970a	11.703a
	(0.240)	(0.360)
Number of Observations	2,379	2,379
R-squared	0.699	0.719
Root Mean Square Error (RMSE)	1.447	1.398

Notes: Robust standard errors are reported in parentheses. In this table, "a" indicates statistical significance at the 1% level.

From Table 4.4a and Table 4.4b, all sub-components of EF from all the models being considered are statistically significant at 1% level. This is consistent with the results in Table 4.1a and Table 4.1b since the coefficient of the overall EF index is also found to be statistically significant at 1% level. It can be noted that the implications of Free Trade, Legal System and Property Rights, and Regulation have higher impacts on FDI inflows compared to Size of Government and Sound Money. For instance, columns (1'), (2'), and (3') of Table 4.4a show that a one-unit increase in the Free Trade, Legal System and Property Rights, and Regulation indices would lead to an increase in FDI inflows by 30.0%, 27.1%, and 33.6%, respectively, ceteris paribus. Meanwhile, columns *(4')* and *(5')* of Table 4.4b show that a one-unit increase in the Size of Government and Sound Money indices would lead to an increase in FDI inflows by 15.3% and 11.7%, respectively, ceteris paribus. Based on the magnitudes of the estimated coefficients, we can say that governments trying to attract FDI inflows are recommended to emphasize Free Trade, and to insure robust Legal System and Property Rights and efficient and liberalized Regulations.

As an illustration from 2013, Ukraine recorded a Free Trade index of 6.66, a Legal System and Property Rights index of 4.51, a Regulation index of 6.33, a Size of Government index of 6.75, and a Sound Money index of 6.47. In the same year, FDI inflows was 4.27 billion of constant 2010 US$. Using the estimates in columns *(1')* through *(5')* of Table 4.4b, we find that a one unit increase in the Free Trade, Legal System and Property Rights and, Regulation indices are associated with increases in FDI inflows to 5.55, 5.43, and 5.70 billion of constant 2010 US$, respectively (*i.e.*, increases in FDI inflows by 1.28, 1.16, and 1.43 billion of constant 2010 US$, respectively). Also, a one unit increase in the Size of Government and Sound Money indices are associated with increases in FDI inflows

to 4.92 and 4.77 billion of constant 2010 US$, respectively (*i.e.*, increases in FDI inflows by 0.65 and 0.50 billion of constant 2010 US$, respectively). Hence, these results suggest that the government should ensure free trade, minimize regulation of markets, ensure proper legal system and enforceable property rights, reduce government size in terms of lowering public spending relative to private spending and minimize tax and subsidy interventions, and implement sound monetary policy to promote an efficient monetary system and ensure a less volatile inflation rate.

As mentioned earlier, Table 4.4c show the results from an alternative empirical specification that includes all sub-components of EF in one model according to equation (3). All the estimated coefficients of the sub-components of EF are statistically significant at 1% level. The signs of the estimated coefficients of the sub-components in Table 4.4c do not change when compared to their corresponding estimated coefficients in Tables 4.4a and Table 4.4b. The notable differences are moderate increases in the magnitude of the estimated coefficients. For example, in Table 4.3c, the estimated coefficients of *Free Trade* are 0.667 and 0.511 from the empirical specification that excludes *ln Foreign Market Potential* and that includes *ln Foreign Market Potential*, respectively. The estimates are compared to 0.395 and 0.300 for in columns *(1)* and *(1')* of Table 4.4a, respectively.

CHAPTER FIVE

5. SUPPLEMENTARY EMPIRICAL RESULTS

5.1. Interaction between EF and DI

The empirical analysis examines next the implications of the EF for the effect of DI on FDI inflows. As discussed earlier, DI can reflect increases in overall investment opportunities in the host country, which could promote increases FDI inflows. Meanwhile, increases in DI could reduce the investment opportunities for MNEs, leading to decreases in FDI inflows. This is when increases in DI disproportionately capture the investment opportunities in the host country. Hence, we investigate how higher levels of EF would affect the implications of DI for FDI inflows. Hence, an interaction term between EF and DI is introduced as specified through the empirical equation (4). Table 5.1 shows the results from the empirical specification that does not include *ln Foreign Market Potential* in column *(1)*, and the results from the empirical specification that includes *ln Foreign Market Potential* in column *(1')*.

We find that the interactions between EF and DI for both empirical specifications *(1)* and *(1')* are statistically insignificant. We also note that the estimated coefficients of EF and DI in column *(5)* of Table 4.1a and in column *(5')* of Table 4.1b are not significantly different in magnitude from their corresponding estimated coefficients in columns *(1)* and *(1')* of Table 5.1, respectively. These results imply that EF does not have a statistically significant effect of DI on FDI inflows. Hence, these results are consistent with a situation where higher levels of EF have proportionate (similar) implications for FDI and DI in capturing investment opportunities in the host country.

Table 5.1

The Effect of Interaction between Economic Freedom and Domestic Investment on Foreign Direct Investment

Dependent Variable: Log of FDI Inflows

	(1)	*(1')*
Economic Freedom	0.572a	0.459a
	(0.042)	(0.040)
ln GDP per capita	0.954a	0.785a
	(0.025)	(0.029)
ln GDP market price	0.824a	0.797a
	(0.018)	(0.018)
ln Foreign Market Potential		0.436a
		(0.030)
ln Real Interest Rate	0.013	0.040
	(0.223)	(0.221)
Secondary School Enrolment Ratio	1.844a	1.288a
	(0.153)	(0.151)
ln Domestic Investment	0.791a	0.850a
	(0.163)	(0.159)
EF × ln Domestic Investment	0.001	0.028
	(0.193)	(0.184)
Constant	16.233a	11.650a
	(0.215)	(0.343)
Number of Observations	2,551	2,551
R-squared	0.706	0.728
Root Mean Square Error (RMSE)	1.472	1.416

Notes: Robust standard errors are reported in parentheses. In this table, “a” indicates statistical significance at the 1% level.

5.2. Interactions between Sub-Components of EF and DI

Interactions between each sub-component of EF and DI are also constructed and included as specified through equation (5), to examine the implications for the effect of DI on FDI inflows. The results are presented in Table 5.2a and in Table 5.2b, covering the empirical specifications without *ln Foreign Market Potential* (columns *(1)* through *(5)*) and the empirical specifications with *ln Foreign Market Potential* (columns *(1')* through *(5')*).

All the estimated coefficients of the interaction between the DI and each sub-component are statistically insignificant, except for the estimated coefficients of *Sound Money* which is statistically significant at 5% level for the model specification that includes *ln Foreign Market Potential* in column *(5')* in Table 5.2b. This is where the estimated coefficient of DI is now 0.935 + 0.288*Sound Money* compared to estimated coefficient on DI of 0.905 in column *(5')* of Table 4.4b. Hypothetically, when the *Sound Money* index is 0, the estimated coefficient of *DI* becomes 0.935 which is not too different from 0.905 magnitude-wise. When *Sound Money* index is 1, the estimated coefficient of *DI* attains 1.223, an increment of 0.288. Hence, we can say that the DI Elasticity of FDI inflows increases by 0.288 for a full unit increase in the Sound Money index. Higher levels of Sound Money index make FDI more elastic to DI. In other words, higher levels of the Sound Money index make percentage increases in FDI more responsive to a 1% increase in DI. A one percent increase in DI attracts larger percentage increases in FDI inflows for higher levels than for lower levels of the Sound Money index.

Table 5.2a

The Effect of Interactions between Sub-Components of Economic Freedom and Domestic Investment on Foreign Direct Investment

Dependent Variable: Log of FDI Inflows

	Free Trade		Legal System and Property Rights		Regulation	
	(1)	*(1')*	*(2)*	*(2')*	*(3)*	*(3')*
EF Sub-Component	0.392a	0.299a	0.376a	0.265a	0.335a	0.347a
	(0.029)	(0.029)	(0.038)	(0.038)	(0.036)	(0.035)
ln GDP per capita	0.960a	0.788a	0.956a	0.785a	0.953a	0.746a
	(0.025)	(0.030)	(0.026)	(0.029)	(0.025)	(0.029)
ln GDP market price	0.811a	0.789a	0.832a	0.801a	0.865a	0.824a
	(0.019)	(0.018)	(0.019)	(0.018)	(0.019)	(0.018)
ln Foreign Market		0.411a		0.453a		0.517a
Potential		(0.032)		(0.030)		(0.030)
ln Real Interest Rate	-0.072	0.009	0.362	0.310	0.288	0.184
	(0.222)	(0.226)	(0.223)	(0.221)	(0.246)	(0.245)
Secondary School	1.512a	1.054a	1.937a	1.378a	2.143a	1.410a
Enrolment Ratio	(0.160)	(0.159)	(0.150)	(0.152)	(0.155)	(0.152)
ln Domestic Investment	0.760a	0.813a	0.806a	0.838a	0.918a	0.954a
	(0.164)	(0.163)	(0.160)	(0.163)	(0.176)	(0.175)
EF Sub-Component ×	0.189c	0.145	-0.034	0.165	-0.171	-0.249
ln Domestic Investment	(0.110)	(0.109)	(0.149)	(0.155)	(0.205)	(0.207)
Constant	16.190a	11.978a	16.245a	11.440a	16.229a	10.841a
	(0.219)	(0.345)	(0.223)	(0.370)	(0.215)	(0.341)
Number of Observations	2,413	2,413	2,556	2,556	2,552	2,552
R-squared	0.690	0.710	0.698	0.721	0.693	0.725
Root Mean Square Error (RMSE)	1.468	1.419	1.491	1.433	1.503	1.423

Notes: Robust standard errors are reported in parentheses. In this table, “a” indicates statistical significance at the 1% level.

Table 5.2b

The Effect of Interactions between Sub-Components of Economic Freedom and Domestic Investment on Foreign Direct Investment

Dependent Variable: Log of FDI Inflows

	Size of Government		Sound Money	
	(4)	*(4')*	*(5)*	*(5')*
EF Sub-Component	0.151a	0.155a	0.199a	0.125a
	(0.024)	(0.022)	(0.032)	(0.029)
ln GDP per capita	0.966a	0.768a	0.972a	0.778a
	(0.024)	(0.028)	(0.027)	(0.030)
ln GDP market price	0.863a	0.824a	0.838a	0.805a
	(0.019)	(0.018)	(0.019)	(0.018)
ln Foreign Market Potential		0.506a		0.497a
		(0.030)		(0.031)
ln Real Interest Rate	0.252	0.146	0.505	0.341
	(0.219)	(0.225)	(0.324)	(0.307)
Secondary School Enrolment Ratio	2.118a	1.376a	2.100a	1.400a
	(0.156)	(0.155)	(0.168)	(0.164)
ln Domestic Investment	0.919a	0.930a	0.854a	0.935a
	(0.159)	(0.160)	(0.166)	(0.162)
EF Sub-Component ×	0.089	-0.047	0.240	0.288b
ln Domestic Investment	(0.096)	(0.098)	(0.148)	(0.139)
Constant	16.145a	10.851a	16.098a	10.877a
	(0.211)	(0.348)	(0.232)	(0.365)
Number of Observations	2,611	2,611	2,517	2,517
R-squared	0.687	0.719	0.685	0.714
Root Mean Square Error (RMSE)	1.513	1.435	1.523	1.452

Notes: Robust standard errors are reported in parentheses. In this table, “a” indicates statistical significance at the 1% level.

5.3. Relationship between EF and FDI - Alternative Specifications

Next, we examine the relationship between EF and FDI by EF category. A more flexible specification is adopted by including dummy variables that are defined for different levels of EF, as determined through the empirical equation (6). These dummy variables are defined as follows: $LowEF$ (for low EF index), which takes a value of 1 when $0 \leq$ EF < 4 and 0 otherwise; $MedEF$ (for medium EF index), which takes a value of 1 when $4 \leq$ EF $<$ 7 and 0 otherwise; and $HighEF$ (for high EF index), which takes a value of 1 when EF ≥ 7 and 0 otherwise. The medium EF and high EF dummy variables are included in the two empirical specifications without and with *ln Foreign Market Potential*. The low EF dummy variable is dropped since we aim to ascertain how medium EF and high EF affects FDI relative to the effect of low EF on FDI (i.e., we set low EF dummy vairable as the reference). Dummy variables with similar categorizations are also created for all sub-components of EF. Hence, the empirial specification (4) is modified as:

$$(14) \qquad lnFDI_{i,t} = \lambda_0 + \lambda_1 MedEF_{i,t} + \lambda_2 HighEF_{i,t} + \boldsymbol{\lambda_3 X_{i,t}} + \nu_{i,t}$$

As mentioned earlier, $LowEF$ has been set as the reference. Also, $MEdEF$ is a dummy variable that equals one for countries characterized by medium level of EF (and equals zero otherwise). Similarly, $HighEF$ is a dummy variable that equals one for countries characterized by high level of EF (and equals zero otherwise). Letting $\boldsymbol{X} = \widetilde{\boldsymbol{X}}$, the predicted value of the dependent variable for the low EF category is:

$$(15) \qquad \widehat{lnFDI}_{\substack{MedEF \\ HighEF=0}} = \hat{\lambda}_0 + \hat{\boldsymbol{\lambda}}_{\boldsymbol{3}} \widetilde{\boldsymbol{X}}$$

The predicted value of the dependent variable for the medium EF category and high EF category respectively is determined as:

(16) $\widehat{lnFDI}_{\substack{MedEF=1 \\ HighEF=0}} = \hat{\lambda}_0 + \hat{\lambda}_1 + \hat{\boldsymbol{\lambda}}_3 \widetilde{\boldsymbol{X}}$, and

(17) $\widehat{lnFDI}_{\substack{MedEF \\ HighEF=1}} = \hat{\lambda}_0 + \hat{\lambda}_2 + \hat{\boldsymbol{\lambda}}_3 \widetilde{\boldsymbol{X}}$

Hence, the difference in the predicted values between the host countries belonging to the high EF category and those belonging to the low EF category amounts to $\hat{\lambda}_2$, ceteris paribus. Meanwhile, the difference in the predicted values between the host countries belonging to the medium EF category and those belonging to the low EF category is equal to $\hat{\lambda}_1$, ceteris paribus. Finally, the difference between the host countries belonging to the high EF category and those belonging to the medium EF category amounts to $\hat{\lambda}_2 - \hat{\lambda}_1$, ceteris paribus. These outcomes imply that:

(18) $\widehat{FDI}_{\substack{MedEF=0 \\ HighEF=1}} / \widehat{FDI}_{\substack{MedEF=0 \\ HighEF=0}} = e^{(\hat{\lambda}_2)}$,

(19) $\widehat{FDI}_{\substack{MedEF=1 \\ HighEF=0}} / \widehat{FDI}_{\substack{MedEF=0 \\ HighEF=0}} = e^{(\hat{\lambda}_1)}$, and

(20) $\widehat{FDI}_{\substack{MedE \\ HighEF=1}} / \widehat{FDI}_{\substack{MedEF=1 \\ HighEF=0}} = e^{(\hat{\lambda}_2 - \hat{\lambda}_1)}$

The equations above indicate that the predicted FDI inflows for the high EF category is $e^{(\hat{\lambda}_2)}$ times the predicted FDI inflows for the benchmark low EF category, ceteris paribus. Also, the predicted FDI inflows for medium EF category is $e^{(\hat{\lambda}_1)}$ times the predicted FDI inflows in the low EF category, ceteris paribus. These equations can be expressed as percentages as follows:

(21) $\left[\left(\widehat{FDI}_{\substack{MedEF=0 \\ HighEF=1}} / \widehat{FDI}_{\substack{MedEF=0 \\ HighEF=0}}\right) - 1\right]\% = \left[(e^{(\hat{\lambda}_2)} - 1\right]\%$,

(22) $$\left[\left(\widehat{FDI}_{\substack{MedEF \\ HighEF=0}} / \widehat{FDI}_{\substack{MedEF=0 \\ HighEF=0}}\right) - 1\right]\% = \left[e^{(\hat{\lambda}_1)} - 1\right]\%, \text{ and}$$

(23) $$\left[\left(\widehat{FDI}_{\substack{MedEF \\ HighEF=1}} / \widehat{FDI}_{\substack{MedEF \\ HighEF=0}}\right) - 1\right]\% = \left[e^{(\hat{\lambda}_2 - \hat{\lambda}_1)} - 1\right]\%$$

Hence, we can say that the predicted value of FDI inflows in the case of the high EF category is $\left[e^{(\hat{\lambda}_2)} - 1\right]\%$ more (or less) than the predicted value of FDI inflows in the case of the benchmark low EF category, ceteris paribus. Also, the predicted value of FDI inflows in the case of medium EF category is $\left[e^{(\hat{\lambda}_1)} - 1\right]\%$ more (or less) than the predicted value of FDI inflows in the case of the benchmark low EF category, ceteris paribus. Finally, the predicted value of FDI inflows in the case of the high EF category is $\left[e^{(\hat{\lambda}_2 - \hat{\lambda}_1)} - 1\right]\%$ more (or less) than the predicted value of FDI inflows in the case of the medium EF category, ceteris paribus.

Table 5.3 below displays results from the empirical specification that includes the dummy variables for medium EF and high EF, replacing the basic EF variable. The estimated coefficients of medium EF and high EF dummy variables are both positive and statistically significant, in both specifications presented in columns *(1)* and *(1')* of Table 5.3. Column *(1)* of Table 5.3 indicates that the predicted FDI inflows for the medium EF category is 79.3% higher than the predicted FDI inflows for the low EF category, ceteris paribus. Also, the predicted FDI inflows for the high EF category is 244.9% higher than the predicted FDI inflows for the low EF category, ceteris paribus. Correspondingly, the predicted FDI inflows for the high EF category is 92.3% higher than the predicted FDI inflows for the medium EF category, ceteris paribus.

Column *(1')* of Table 5.3 shows that the predicted FDI inflows for the medium EF category is 53.1% higher than the predicted FDI inflows for the low EF category, ceteris paribus. Also, the predictions show that host countries with high EF category receives 143.8% more FDI inflows compared to countries with low EF category, ceteris paribus. Correspondingly, the predicted FDI inflows for the high EF category is 59.2% higher than the predicted FDI inflows for the medium EF category, ceteris paribus. These results suggest that the impact of EF on FDI inflows is larger when EF is higher.[11]

Next, we examine the effect of EF on FDI through the inclusion of a non-linear (quadratic) function of EF into the basic empirical specification according to the empirical equation (8). This empirical specification allows us to investigate whether a higher or lower effect of EF on FDI occurs with increases in EF. The results are presented in Table 5.4. In this table, column *(1)* shows the estimates from the empirical equation that excludes *ln Foreign Market Potential*, whereas column *(1')* shows the estimates from the empirical equation that includes *ln Foreign Market Potential*. We find that the estimated coefficients on EF and on EF squared are both positive and statistically significant at the 1% level. These results indicate that the effect of EF on FDI inflows is larger at higher levels of EF. Hence, the EF effect appears to increase at increasing rate with the basic level of EF. This means that at no point does the effect of EF on FDI inflows slow down. Rather, achieving greater EF accelerate the attraction of FDI inflows by a greater margin.

[11] The coefficients of the control variables have their expected signs and magnitudes. The effect of changes in the *Real Interest Rate* on FDI inflows is now significant at 10% level for specification *(1)* as compared to the other results where they were statistically insignificant.

Table 5.3

The Effect of Economic Freedom on Foreign Direct Investment by EF Category

Dependent Variable: Log of FDI Inflows

	(1)	*(1')*
Medium EF	0.584a	0.426b
	(0.191)	(0.192)
High EF	1.238a	0.891a
	(0.198)	(0.200)
ln GDP per capita	0.872a	0.735a
	(0.025)	(0.027)
ln GDP market price	0.849a	0.811a
	(0.016)	(0.015)
ln Foreign Market Potential		0.430a
		(0.028)
ln Real Interest Rate	0.378c	0.326
	(0.228)	(0.221)
Secondary School Enrolment Ratio	1.717a	1.280a
	(0.138)	(0.138)
ln Domestic Investment	0.971a	1.064a
	(0.139)	(0.140)
Constant	16.169a	11.630a
	(0.233)	(0.347)
Number of Observations	3,063	3,008
R-squared	0.700	0.723
Root Mean Square Error (RMSE)	1.482	1.431

Notes: Robust standard errors are reported in parentheses. In this table, “a” and “c” indicate statistical significance at the 1% level and 10% level respectively.

Table 5.4

The Effect of Economic Freedom on Foreign Direct Investment

(Empirical Specification with Quadratic EF Function)

Dependent Variable: Log of FDI Inflows

	(1)	*(2)*
EF	0.575a	0.462a
	(0.040)	(0.038)
EF squared	0.163a	0.185a
	(0.038)	(0.037)
ln GDP per capita	0.965a	0.793a
	(0.025)	(0.028)
ln GDP market price	0.823a	0.796a
	(0.018)	(0.018)
ln Foreign Market Potential		0.443a
		(0.029)
ln Real Interest Rate	0.178	0.225
	(0.223)	(0.226)
Secondary School Enrolment Ratio	1.820a	1.256a
	(0.154)	(1.256)
ln Domestic Investment	0.769a	0.824a
	(0.167)	(0.164)
Constant	16.038a	11.366a
	(0.224)	(0.348)
Number of Observations	2,551	2,551
R-squared	0.708	0.731
Root Mean Square Error (RMSE)	1.467	1.409

Notes: Robust standard errors are reported in parentheses. In this table, “a” indicates statistical significance at the 1% level.

5.4. Relationships between Sub-Components of EF and FDI - Alternative Specifications

This sub-section presents the results from the empirical specifications that include dummy variables covering high, medium, and low levels of the sub-components of EF according to equation (7). The boundaries of the sub-components of the EF used in generating the dummy variables are equivalent to those used in the construction of the dummy variables for the overall EF index as presented in Section 5.2. The results are presented in Table 5.4a and in Table 5.4b, covering the empirical specifications without *ln Foreign Market Potential* (columns *(1)* through *(5)*) and the empirical specifications with *ln Foreign Market Potential* (columns *(1')* through *(5')*). The estimated coefficients on these dummy variables are consistent with the benchmark results.

Columns *(1)* and *(1')* of Table 5.5a indicate that FDI inflows for host countries belonging to medium Free Trade category are 165.3% and 116.8% higher than FDI inflows for host countries belonging to low Free Trade category, respectively, ceteris paribus. Also, FDI inflows for host countries belonging to high Free Trade category are 269.9% and 155.5% higher than FDI inflows for host countries belonging to low Free Trade category, respectively, ceteris paribus. Then, FDI inflows for host countries belonging to high Free Trade category are 39.4% and 17.8% higher than FDI inflows for host countries belonging to medium Free Trade category, respectively, ceteris paribus. These results suggest that policies that promote Free Trade would accelerate FDI inflows. Also, columns *(2)* and *(2')* of Table 5.5a show that FDI inflows are higher in the case of medium and high Legal System and Property *Rights* index increases by 81.1% and 100.9% compared to FDI inflows in the case of low Legal System and Property Rights index, ceteris paribus.

Correspondingly, FDI inflows in the case of high Legal System and Property Rights index are higher than FDI inflows in the case of medium Legal System and Property Rights index by 11.0%. Using the estimates in Column *(2')* of Table 5.5a, the above percentage become 66.5%, 60.6%, and 3.7%, respectively.

Columns *(3)* and *(3')* of Table 5.5a show that medium Regulation categorization increases FDI inflows by 96.2% and 77.4% more than a low Regulation categorization, respectively. We find that a high Regulation categorization increases FDI inflows by 216.1% and 158.8% more than a low Regulation categorization, respectively. Then, a high Regulation categorization increases FDI inflows by 61.1% and 45.9% more than a medium Regulation categorization, respectively.

Columns *(4)* and *(4')* of Table 5.5b show that the difference between medium and low *Size of Government* categorization in terms of the effects on FDI inflows are not statistically significant. Similarly, columns *(5)* and *(5')* of Table 5.5b show that the difference between medium and low *Sound Money* categorization in terms of the effects on FDI inflows are not statistically significant. Meanwhile, columns *(4)* and *(4')* of Table 5.5b indicate that high Size of Government categorization increases FDI inflows by 195.4% and 179.1%, respectively, more than both low and medium Size of Government categorization. Also, column *(5)* of Table 5.5b shows that high Sound Money categorization increases FDI inflows by 59.7%, respectively, more than both low and medium Sound Money categorization. The results from the alternative empirical specification in column *(5')* of Table 5.5b indicate that the differences between the *Sound Money* categories in terms of the impact on FDI inflows are not statistically significant.

Next, we examine the effect of the sub-components of EF on FDI inflows through the inclusion of a non-linear (quadratic) function of the sub-components of EF into the basic empirical specification according to equation (9). This empirical specification allows us to investigate whether a higher or lower effects of the sub-components of EF on FDI inflows occur with increases in the sub-components of EF level. The results are presented in Table 5.6a and Table 5.6b. In these tables, column *(1)* through *(5)* show the estimates from the empirical equation that excludes *ln Foreign Market Potential*, whereas column *(1')* through *(5')* show the estimates from the empirical equation that includes *ln Foreign Market Potential*.

We find that the estimated coefficients on the sub-components of EF and on the sub-components of EF squared are both positive and statistically significant at the 1% level in the case of *Free Trade* and *Regulation* indices. These results indicate that the effects of the Free Trade and Regulation indices on FDI inflows become larger at higher levels of Free Trade and Regulation indices. The squared variables of the *Legal System and Property Rights* and *Size of Government* indices are not statistically significant, suggesting that there are not statistically significant quadratic relationships between these indices and FDI inflows. These results indicate that the significant quadratic relationship between the overall EF index and FDI inflows is principally driven by the *Free Trade* and *Regulation* sub-components of EF. Hence, the effects of these sub-components of EF on FDI inflows appear to rise at accelerating rates with increases in the basic levels of these sub-components of EF. These results indicate that attaining greater Free Trade and Regulation indices would promote the attraction of FDI inflows by a greater margin.

Table 5.5a

The Effects of Sub-Components of Economic Freedom on Foreign Direct Investment by EF Category

Dependent Variable: Log of FDI Inflows

	Free Trade		Legal System and Property Rights		Regulation	
	(1)	*(1')*	*(2)*	*(2')*	*(3)*	*(3')*
Medium EF	0.976a	0.774a	0.594a	0.510a	0.674a	0.573a
Sub-Component	(0.120)	(0.124)	(0.086)	(0.085)	(0.203)	(0.197)
High EF Sub-Component	1.308a	0.938a	0.698a	0.474a	1.151a	0.951a
	(0.124)	(0.131)	(0.097)	(0.096)	(0.208)	(0.202)
ln GDP per capita	0.875a	0.744a	0.904a	0.749a	0.924a	0.756a
	(0.022)	(0.025)	(0.024)	(0.027)	(0.023)	(0.026)
ln GDP market price	0.844a	0.807a	0.835a	0.794a	0.858a	0.818a
	0.015	0.015	0.016	0.015	0.016	0.015
ln Foreign Market Potential		0.420a		0.470a		0.463a
		(0.030)		(0.028)		(0.0280
ln Real Interest Rate	0.343	0.306	0.496b	0.397c	0.466b	0.367c
	(0.212)	(0.209)	(0.213)	(0.205)	(0.227)	(0.217)
Secondary School	1.733a	1.318a	1.958a	1.401a	1.907a	1.352a
Enrolment Ratio	(0.138)	(0.137)	(0.132)	(0.134)	(0.133)	(0.135)
ln Domestic Investment	1.022a	1.088a	0.990a	1.077a	1.043a	1.120a
	(0.130)	(0.132)	(0.134)	(0.134)	(0.138)	(0.138)
Constant	15.923a	11.513a	16.212a	11.158a	15.720a	10.891a
	(0.202)	(0.338)	(0.198)	(0.333)	(0.255)	(0.356)
Number of Observations	3,063	3,008	3,063	3,008	3,063	3,008
R-squared	0.703	0.724	0.693	0.721	0.695	0.722
Root Mean Square Error (RMSE)	1.475	1.428	1.498	1.437	1.494	1.433

Notes: Robust standard errors are reported in parentheses. In this table, “a”, “b”, and “c” indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Table 5.5b

The Effects of Sub-Components of Economic Freedom on Foreign Direct Investment by EF Category

Dependent Variable: Log of FDI Inflows

	Size of Government		Sound Money	
	(4)	*(4')*	*(5)*	*(5')*
Medium EF Sub-Component	0.125	0.087	-0.018	-0.143
	(0.088)	(0.084)	(0.128)	(0.123)
High EF Sub-Component	0.670a	0.583a	0.468a	0.180
	(0.095)	(0.093)	(0.126)	(0.123)
ln GDP per capita	1.002a	0.818a	0.917a	0.759a
	(0.023)	(0.026)	(0.024)	(0.027)
ln GDP market price	0.853a	0.813a	0.831a	0.796a
	(0.016)	(0.015)	(0.015)	(0.015)
ln Foreign Market Potential		0.476a		0.464a
		(0.029)		(0.029)
ln Real Interest Rate	0.467b	0.361c	0.577a	0.467b
	(0.218)	(0.211)	(0.208)	(0.204)
Secondary School Enrolment Ratio	1.920a	1.327a	1.842a	1.316a
	(0.135)	(0.137)	(0.141)	(0.140)
ln Domestic Investment	0.968a	1.046a	1.011a	1.119a
	(0.138)	(0.137)	(0.145)	(0.144)
Constant	15.610a	10.642a	16.331a	11.472a
	(0.213)	(0.340)	(0.210)	(0.343)
Number of Observations	3,063	3,008	3,063	3,008
R-squared	0.695	0.723	0.692	0.719
Root Mean Square Error (RMSE)	1.494	1.430	1.501	1.442

Notes: Robust standard errors are reported in parentheses. In this table, “a”, “b”, and “c” indicate statistical significance at the 1%, 5%, and 10% level, respectively.

Table 5.6a

The Effects of Sub-Components of Economic Freedom on Foreign Direct Investment

(Empirical Specification with Quadratic EF Function)

Dependent Variable: Log of FDI Inflows

	Free Trade		Legal System and Property Rights		Regulation	
	(1)	*(1')*	*(2)*	*(2')*	*(3)*	*(3')*
EF Sub-Component	0.417a	0.324a	0.360a	0.259a	0.368a	0.384a
	(0.028)	(0.028)	(0.033)	(0.033)	(0.034)	(0.033)
EF Sub-Component	0.076a	0.084a	-0.063c	-0.051	0.101a	0.117a
squared	(0.016)	(0.016)	(0.036)	(0.035)	(0.027)	(0.026)
ln GDP per capita	0.980a	0.810a	0.954a	0.781a	0.960a	0.754a
	(0.027)	(0.033)	(0.025)	(0.028)	(0.025)	(0.029)
ln GDP market price	0.816a	0.795a	0.831a	0.805a	0.855a	0.813a
	(0.019)	(0.019)	(0.018)	(0.018)	(0.019)	(0.018)
ln Foreign Market		0.420a		0.445a		0.520a
Potential		(0.032)		(0.030)		(0.030)
ln Real Interest Rate	-0.046	0.056	0.318	0.290	0.346	0.258
	(0.235)	(0.236)	(0.222)	(0.219)	(0.245)	(0.239)
Secondary School	1.375a	0.890a	1.903a	1.342a	2.052a	1.294a
Enrolment Ratio	(0.163)	(0.162)	(0.150)	(0.152)	(0.158)	(0.155)
ln Domestic Investment	0.767a	0.826a	0.823a	0.877a	0.909a	0.947a
	(0.178)	(0.176)	(0.163)	(0.162)	(0.170)	(0.166)
Constant	15.909a	11.550a	16.321a	11.636a	16.095a	10.640a
	(0.252)	(0.362)	(0.223)	(0.360)	(0.218)	(0.342)
Number of Observations	2,413	2,413	2,556	2,556	2,552	2,552
R-squared	0.692	0.713	0.699	0.722	0.695	0.727
Root Mean Square Error (RMSE)	1.464	1.413	1.489	1.432	1.499	1.417

Notes: Robust standard errors are reported in parentheses. In this table, “a” and “c” indicate statistical significance at the 1% and 10% level, respectively.

Table 5.6b

The Effects of Sub-Components of Economic Freedom on Foreign Direct Investment

(Empirical Specification with Quadratic EF Function)

Dependent Variable: Log of FDI Inflows

	Size of Government		Sound Money	
	(4)	*(4')*	*(5)*	*(5')*
EF Sub-Component	0.156a	0.155a	0.293a	0.210a
	(0.024)	(0.023)	(0.033)	(0.031)
EF Sub-Component squared	0.007	0.011	0.130a	0.118a
	(0.015)	(0.014)	(0.024)	(0.022)
ln GDP per capita	0.966a	0.770a	0.970a	0.777a
	(0.025)	(0.029)	(0.026)	(0.029)
ln GDP market price	0.864a	0.825a	0.839a	0.808a
	(0.019)	(0.018)	(0.019)	(0.018)
ln Foreign Market Potential		0.505a		0.489a
		(0.030)		(0.030)
ln Real Interest Rate	0.248a	0.162a	0.363a	0.198a
	(0.223)	(0.222)	(0.348)	(0.331)
Secondary School Enrolment Ratio	2.147a	1.367a	1.969a	1.304a
	(0.160)	(0.159)	(0.167)	(0.163)
ln Domestic Investment	0.884a	0.937a	0.859a	0.931a
	(0.167)	(0.163)	(0.173)	(0.168)
Constant	16.134a	10.832a	16.003a	10.898a
	(0.224)	(0.342)	(0.230)	(0.357)
Number of Observations	2,611	2,611	2,517	2,517
R-squared	0.687	0.719	0.689	0.717
Root Mean Square Error (RMSE)	1.514	1.435	1.514	1.446

Notes: Robust standard errors are reported in parentheses. In this table, “a” indicates statistical significance at the 1% level.

5.5. Empirical Analysis by Region

Next, we analyze the effects of EF when disaggregating the corresponding variables across different developing regions. The empirical equation is already specified in Section 3 through equation (10) as:

$$(24) \quad lnFDI_{i,t} = \theta_0 + \theta_1 LowerEF_{i,t} + \theta_2 LowerEF_{i,t}^{(R)} + \boldsymbol{\theta_3 X_{i,t}} + \xi_{i,t}$$

There are two categories covering higher EF level and lower EF level according to the median. In this equation, $HigherEF$ is set as the reference. $LowerEF$ is a dummy variable that equals one for countries belonging to the lower EF category (including the developing region R under consideration) and that equals zero otherwise, as defined in the previous chapter. $LowerEF^{(R)}$ is a corresponding dummy variable that equals one for countries belonging to the developing region R and that equals zero, otherwise. Letting $\boldsymbol{X} = \widetilde{\boldsymbol{X}}$, the predicted value of the dependent variable for the higher EF category is:

$$(25) \quad \widehat{lnFDI}_{\substack{LowerEF=0 \\ LowerEF^R=0}} = \hat{\theta}_0 + \widehat{\boldsymbol{\theta}}_{\boldsymbol{3}} \widetilde{\boldsymbol{X}}$$

The benchmark predicted value of the dependent variable for developing countries with lower EF, and the predicted value of the dependent variable for the developing region R with lower EF are respectively determined as:

$$(26) \quad \widehat{lnFDI}_{\substack{LowerEF=1 \\ LowerEF^R=0}} = \hat{\theta}_0 + \hat{\theta}_1 + \widehat{\boldsymbol{\theta}}_{\boldsymbol{3}} \widetilde{\boldsymbol{X}}$$

$$(27) \quad \widehat{lnFDI}_{\substack{LowerEF=1 \\ LowerEF^R=1}} = \hat{\theta}_0 + \hat{\theta}_1 + \hat{\theta}_2 + \widehat{\boldsymbol{\theta}}_{\boldsymbol{3}} \widetilde{\boldsymbol{X}}$$

The benchmark difference in the predicted values between the countries belonging to the higher EF category and those belonging to the lower EF category (excluding

region R) amounts to $\hat{\theta}_1$. Meanwhile, the difference in the predicted values between the countries belonging to the high EF category and those belonging to the developing region R is equal to $\hat{\theta}_1 + \hat{\theta}_2$. These outcomes imply that:

(28) $$\widehat{FDI}_{\substack{LowerEF=0 \\ LowerEF^R=0}} \Big/ \widehat{FDI}_{\substack{LowerEF=1 \\ LowerEF^R=0}} = e^{-(\hat{\theta}_1)}$$

(29) $$\widehat{FDI}_{\substack{LowerEF=0 \\ LowerEF^R=0}} \Big/ \widehat{FDI}_{\substack{LowerEF=1 \\ LowerEF^R=1}} = e^{-(\hat{\theta}_1+\hat{\theta}_2)}$$

These equations indicate that the predicted inward FDI for the higher EF category is $e^{-(\hat{\theta}_1)}$ times the predicted FDI for the benchmark low EF category, ceteris paribus. Also, the predicted FDI for higher EF category is $e^{-(\hat{\theta}_1+\hat{\theta}_2)}$ times the predicted FDI for the lower EF category for Region *R*, ceteris paribus.

The equations can also be expressed as percentages as follows:

(30) $$\left(\widehat{FDI}_{\substack{LowerEF=0 \\ LowerEF^R=0}} \Big/ \widehat{FDI}_{\substack{LowerEF=1 \\ LowerEF^R=0}} - 1\right)\% = \left[e^{-(\hat{\theta}_1)} - 1\right]\%$$

(31) $$\left(\widehat{FDI}_{\substack{LowerEF=0 \\ LowerEF^R=0}} \Big/ \widehat{FDI}_{\substack{LowerEF=1 \\ LowerEF^R=1}} - 1\right)\% = \left[e^{-(\hat{\theta}_1+\hat{\theta}_2)} - 1\right]\%$$

Hence, we can then say that the predicted inward FDI for the higher EF category is $\left[e^{-(\hat{\theta}_1)} - 1\right]\%$ more (or less) than the predicted FDI for the benchmark lower EF category, ceteris paribus. Also, the predicted FDI for the higher EF category is $\left[e^{-(\hat{\theta}_1+\hat{\theta}_2)} - 1\right]\%$ more (or less) than the predicted FDI for the lower EF category for Region *R*, ceteris paribus. From these outcomes, we get:

(32) $$\widehat{FDI}_{\substack{LowerEF=1 \\ LowerEF^R=0}} \Big/ \widehat{FDI}_{\substack{LowerEF=1 \\ LowerEF^R=1}} = e^{-(\hat{\theta}_2)}$$

This equation indicates that the predicted FDI inflows for the benchmark lower EF category is $e^{-(\hat{\theta}_2)}$ times the predicted FDI inflows for the lower EF category for Region *R*, ceteris paribus. Therefore, this ratio reflects the deviation of countries of region *R* in terms of FDI inflows from the other countries belonging to the lower EF category, ceteris paribus.

Table 5.7 below displays the results of the empirical equation that is used through our regional analysis. The regions that are covered are Latin America and the Caribbean (LAC), Middle East and North Africa (MENA), South Asia (SA) and Sub-Saharan Africa (SSA). This table shows the results from the empirical specification that includes *ln Foreign Market Potential*.

Table 5.7

The Effect of Economic Freedom on Foreign Direct Investment by Region

Dependent Variable: Log of FDI Inflows

	LAC	MENA	SA	SSA
	(1)	*(2)*	*(3)*	*(4)*
Lower EF Category	-1.034a	-0.643a	-0.526a	-0.728a
	(0.142)	(0.145)	(0.140)	(0.151)
Lower EF Category (*R*)	0.356b	-0.422a	-0.470a	-0.095
	(0.150)	(0.160)	(0.158)	(0.177)
ln GDP per capita	0.712a	0.735a	0.718a	0.745a
	(0.027)	(0.028)	(0.028)	(0.028)
ln GDP market price	0.833a	0.813a	0.826a	0.831a
	(0.015)	(0.016)	(0.016)	(0.015)
ln Foreign Market Potential	0.448a	0.435a	0.418a	0.432a
	(0.028)	(0.028)	(0.028)	(0.028)
ln Real Interest Rate	0.312	0.341	0.350	0.309
	(0.224)	(0.228)	(0.226)	(0.235)
Secondary School Enrolment	1.195a	1.293a	1.384a	1.349a
Ratio	(0.140)	(0.135)	(0.141)	(0.148)
ln Domestic Investment	1.152a	1.095a	1.156a	1.152a
	(0.146)	(0.142)	(0.144)	(0.144)
Constant	11.921a	12.136a	12.419a	12.304a
	(0.352)	(0.359)	(0.360)	(0.365)
Number of Observations	3,008	3,008	3,008	3,008
R-squared	0.731	0.727	0.732	0.725

Notes: Robust standard errors are reported in parentheses. In this table, "a" and "b" indicate statistical significance at the 1% and 5% level, respectively.

The results from the empirical equation for *R=LAC* are presented in column *(1)* of Table 5.7. The estimated coefficient of $LowerEF$ is negative and statistically significant at the 1% level, and the estimated coefficient for $LowEF^{(R)}$ is positive and statistically significant at the 5% level. Setting the higher EF category as the reference, this result

indicates that, on average, the negative impact of lower EF level on FDI inflows for LAC countries is less important than the average impact, ceteris paribus. The ratio of FDI inflows for the higher EF category to FDI inflows for lower EF category that is specific to LAC region is 1.96 according to equation (29), ceteris paribus. That is, LAC countries with lower EF level receive, on average, a fraction of 0.51 (=1/1.96) of FDI inflows compared to countries with higher EF level, ceteris paribus. Meanwhile, other countries with lower EF level receive, on average, a fraction of 0.36 (=1/2.81) of FDI inflows compared to countries with higher EF level per equation (28), ceteris paribus. The ratio of FDI inflows of LAC countries with lower EF level to FDI inflows of other countries with lower EF level is 1.43 per equation (32), ceteris paribus. That is LAC countries with lower EF level receive, on average, 43% more FDI inflows compared to other countries with lower EF level.

In the case of *R=MENA*, the results are presented in column *(2)* of Table 5.7. The estimated coefficient of $LowerEF$ is negative and statistically significant at the 1% level. Also, the estimated coefficient on $LowerEF^{(R)}$ is negative and statistically significant at the 1% level. These results show that, on average, the negative impact of lower EF for MENA countries is more important compared to other countries, ceteris paribus. The ratio of FDI inflows for the higher EF category to FDI inflows for the lower EF category specific to the MENA region is 2.90 according to equation (29), ceteris paribus. That is, MENA countries with lower EF level receive, on average, a fraction of 0.34 (=1/2.90) of FDI inflows compared to countries with higher EF level, ceteris paribus. Meanwhile, other countries with lower EF level receive, on average, a fraction of 0.53 (=1/1.90) of FDI inflows compared to countries with higher EF level according to equation (28), ceteris paribus. The ratio of FDI inflows of MENA countries with lower EF level to FDI inflows

of other countries with lower EF level is 0.66 according to equation (32), ceteris paribus. That is MENA countries with lower EF level receive, on average, 34% less FDI inflows compared to other countries with lower EF level. These results emphasize important implications of lower EF levels in terms of lower FDI inflows for the MENA region.

The results from the empirical equation for *R=SA* are presented in column *(3)* of Table 5.7. The estimated coefficients of $LowerEF$ and $LowerEF^{(R)}$ are both negative and statistically significant at the 1% level. They indicate that, on average, the negative impact of lower EF level for SA countries is more important compared to other countries, ceteris paribus. The ratio of FDI inflows for the higher EF category to FDI inflows for the lower EF category that is specific to the SA region is 2.71 according to equation (29), ceteris paribus. That is, SA countries with lower EF level receive, on average, a fraction of 0.37 (=1/2.71) of FDI inflows compared to countries with higher EF level, ceteris paribus. Meanwhile, other countries with lower EF level receive, on average, a fraction of 0.59 (=1/1.69) of FDI inflows compared to countries with higher EF level according to equation (28), ceteris paribus. The ratio of FDI inflows of SA countries with lower EF level to FDI inflows of other countries with lower EF level is 0.63 according to equation (32), ceteris paribus. Hence, SA countries with lower EF level receive, on average, 37% less FDI inflows compared to other countries with lower EF level, ceteris paribus. These results emphasize significant implications of lower EF levels in terms of lower FDI inflows for the SA region.

Finally, column (4) of Table 5.7 shows the results for *R=SSA*. We find that the estimated coefficient of $LowerEF$ is negative and statistically significant at 1% level, and the estimated coefficient for $LowerEF^{(R)}$ is not statistically insignificant. This result

suggest that the SSA region does not exhibit statistically significant deviation from the average impact associated with the lower EF category, ceteris paribus.

CHAPTER 6

6. SUMMARY AND CONCLUSION

6.1. Summary

FDI promotes economic growth since it increases investment, provides foreign exchange, and increases government tax revenue. As a result, many governments have adopted direct pro-investment policies aimed at increasing both inward FDI flows and DI, and they are also creating conducive economic environments in their respective countries so as to promote FDI inflows (Azman-Saini et al., 2010). EF has been labelled as a momentous factor in the proliferation of inward FDI (e.g., Bengoa and Sanchez-Robles, 2003; Bénassy-Quéré et al., 2007; Quazi, 2007; Azman-Saini et al., 2010).

The Fraser Institute's EF index is adopted in this thesis to address the following six empirical inquiries on how EF affects inward FDI flows. First, the thesis carries out an overall empirical evaluation on the connection between EF and FDI inflows for 117 selected countries over the time period 1970 to 2013, after which an economic development level and a geo-economic development level assessments are executed. Second, the thesis finds out whether EF's effect on inward FDI flows changes over time by restricting the time period to the years 2000-2013. Third, this thesis determines whether the sub-components of EF also have direct impacts on FDI inflows and identify the sub-components with the strongest impacts. Fourth, the empirical analysis determines whether enhancements in EF (and EF sub-components) fortifies the influence of DI in promoting inward FDI flows. Fifth, the empirical analysis examines non-linear empirical relationship between EF (and sub-components of EF) and FDI inflows through a polynomial function of EF (and EF sub-components). This is done to determine whether the effect of EF as well

as it sub-components on inward FDI flows amplifies or decelerates at certain levels. Lastly, an empirical analysis is carried out to examine the effects of EF (and EF sub-components) by EF categories and probes whether variations in the effect of EF on inward FDI exists across developing regions (e.g., LAC, MENA, SA, and SSA).

This thesis contributes to the existing empirical literature by analyzing the impact of EF on FDI for a comprehensive dataset made up of both developed and developing countries across several geographical regions over a wide time period. Also, the thesis tackles the econometric issues of collinearity and endogeneity by adopting the three-step procedure used by Bénassy-Quéré et al. (2007), which orthogonalizes and instrumentalizes the variables of concern, namely, EF, the sub-components of EF and other key independent variables. Another important contribution is the introduction of interactions between EF and DI and between EF sub-components and DI, which helps investigating whether higher levels of EF drives increasing or decreasing consequences of DI on inward FDI. The last contribution has to do with the analysis of the varying implications of EF and sub-components of EF on FDI inflows across different economic categories and geo-economic categories. This contribution allows us to examine whether the variations in the effects of EF on FDI inflows.

The results of the empirical analyses carried out suggest that EF promotes inward FDI flows when considering a long time span (1970-2013). In recent years (2000-2013), we find that the effect of EF on FDI inflows has moderately decreased. All sub-components of EF also play a crucial role in the promotion of inward FDI flows. Free Trade and Regulation are found to have the largest effect in promoting FDI inflows whereas Sound Money has the least impact. Also, it is established that improvement in EF does not have

any positive or negative implications for the DI effect on the inflows of FDI. For the sub-components of EF, only higher levels of the Sound Money index strengthen the impact of DI in promoting inward FDI. Another result established shows that a non-linear empirical relationship between EF and FDI inflows exists such that higher levels of EF magnifies FDI inflows. Similarly, higher levels of the individual sub-components of EF also amplifies FDI inflows.

For the geo-economic level analyses, we find out that all selected developing regions benefit from improvements in EF as it enhances FDI inflows. However, we find significant variations in the impact of EF on FDI inflows across developing regions. Most notably, there are significant implications of lower EF levels in terms of lower FDI inflows for the MENA and SA regions compared to other regions. That is, countries in the MENA and SA region belonging to the lower EF category generally attract less FDI inflows when compared to other regions. Meanwhile, countries in the LAC region are found to be less impacted by lower EF levels compared to other countries. Hence, they perform better in attracting FDI inflows than their lower EF counterparts in other regions.

6.2. Policy Recommendations

The results of the empirical investigations recommend that governments must pursue EF to promote FDI inflows. Policies that governments should adopt can be categorized based on the sub-components of EF in somewhat the order of how they positively impact FDI inflows proposed by Gwartney et al. (2015):

- *Freedom to Trade Internationally* – Restraints on the global exchange of goods and services must be lessened. Low tariffs and little or no non-tariff trade barriers must

be pursued. Cost of compliance of exporting and importing goods and services must be lessened. Restrictions on foreign ownership and investment must be minimized or eliminated. Capital controls must also be minimized. Foreigners must be given the freedom to visit.

- *Regulation* – Although labour market regulations like minimum wage, hiring and firing regulations and labour hours regulation are necessary, governments should not set up such regulations in a way that will impede the efficient running of MNEs and domestic firms alike. Governments must allow the forces of demand and supply of labour to determine wages and the hiring and firing of labour and avoid the use conscription. Also, business regulations like tax compliance and bureaucracy regulations that increases cost, regulations associated with business start-ups, administrative and licensing requirements must be minimized. Also, corruption should be minimized to barest minimum so as not to scare away MNEs. Regulations on the credit market should also be lessened. Regulations that severely affect ownership and operation of banks and private sector credit should be minimized. Governments must also refrain from controlling interest rates and allow market forces to determine them.

- *Legal System and Property Rights* – Nations must ensure the rule of law; they must also ensure the property of individuals and firms are securely protected so that they can enjoy the fruit of their labour. There should be a self-regulating and impartial judicial system to ensure justice as well as a functional police to ensure enforcement of the law.

- *Size of Government* – Private spending relative to government spending must increase. This is to ensure that political choice due to the aim of the government to remain in power is not substituted for personal choice. Also, government taxing a section of the citizens to transfer to others if not done appropriately can discourage hard work and initiative. Hence, government must reduce taxes if they are high, and must find an appropriate and fair tax transfer system.

- *Sound Money* – Low and stable inflation must be pursued by the central bank and government. This is because high and volatile inflation eats away the value of income, profit and other monetary instruments such as bonds. It also changes the rudiments of long term contracts, and makes it difficult to financially plan for future payments and receipts. Also, creating money to finance government expenditure essentially expropriates property from private hands. Governments must also allow the opening of checking and savings accounts in foreign currencies and also allow citizens to open foreign bank account so as to increase the access to sound money.

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APPENDIX

Appendix A1: Selected Countries

Albania	Estonia
Algeria	Finland
Argentina	France
Australia	Gabon
Austria	Germany
Bahamas, The	Ghana
Bahrain	Greece
Bangladesh	Guatemala
Barbados	Guinea-Bissau
Benin	Guyana
Bolivia	Haiti
Botswana	Honduras
Brazil	Hong Kong SAR, China
Bulgaria	Hungary
Burundi	Iceland
Cameroon	India
Canada	Indonesia
Central African Republic	Iran, Islamic Rep.
Chad	Ireland
Chile	Israel
China	Italy
Colombia	Jamaica
Congo, Dem. Rep.	Japan
Congo, Rep.	Jordan
Costa Rica	Kenya
Cote d'Ivoire	Korea, Rep.
Croatia	Kuwait
Cyprus	Latvia
Czech Republic	Lithuania
Denmark	Madagascar
Dominican Republic	Malawi
Ecuador	Malaysia
Egypt, Arab Rep.	Mali
El Salvador	Malta

Appendix A1 - *Continued*

Mauritius	Singapore
Mexico	Slovak Republic
Morocco	Slovenia
Namibia	South Africa
Nepal	Spain
Netherlands	Sri Lanka
New Zealand	Sweden
Nicaragua	Switzerland
Niger	Syrian Arab Republic
Nigeria	Tanzania
Norway	Thailand
Oman	Togo
Pakistan	Trinidad and Tobago
Panama	Tunisia
Papua New Guinea	Turkey
Paraguay	Uganda
Peru	Ukraine
Philippines	United Arab Emirates
Poland	United Kingdom
Portugal	United States
Romania	Uruguay
Russian Federation	Venezuela, RB
Rwanda	Zambia
Senegal	Zimbabwe
Sierra Leone	