FOREIGN DIRECT INVESTMENT, ENVIRONMENTAL QUALITY AND ECONOMIC GROWTH IN DEVELOPING COUNTRIES

AYUB MUHAMMAD

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By

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Abstract of thesis presented to the Senate of University Putra Malaysia in fulfilment of the requirement for the degree of Doctor of Philosophy

FOREIGN DIRECT INVESTMENT, ENVIRONMENTAL QUALITY AND ECONOMIC GROWTH IN DEVELOPING COUNTRIES

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August 2019

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In the past few decades, foreign direct investment (FDI) appears to be instrumental for development strategies in many developing countries. FDI is believed to have an important role in promoting economic development of the host countries via technology transfer. As a result, many countries have attempted to attract more FDI inflows by relaxing regulations that limit free flows of foreign capital and providing various incentives to foreign firms. Nevertheless, not all countries have seen successful in attracting FDI inflows. Moreover, some economists are sceptical about the full impact of FDI as it may also have negative impacts on environmental quality. They argue that ignoring the potential impact of FDI on the environment may underestimate the overall effect of FDI on the host economies.

The general objective of this study is to investigate the dynamic links between FDI and key macroeconomic indicators such as institutional and environmental quality as well as output growth. A battery of institutional quality indicator is employed using a sample of developing countries for the 1984-2016 period. There are three important objectives addressed in this thesis. Methodologically, a system generalized method of moments (GMM) estimator is applied to test the three objectives.

The first objective of this study is to assess the determinants of FDI with a special emphasis on the complementarity effect between democracy and natural resources. This study investigates whether different types of natural resource export will have the ability to change the relationship between democracy and FDI inflows. The objective is tested using a system GMM estimator for 80 developing countries covering the 1984-2016 period. The findings reveal that democracy promotes FDI inflows in countries which exports minerals, food and agriculture raw material. Meanwhile, it reduces FDI inflows in countries that exports fuel. The finding is consistent with the

view that the impact of democracy on FDI inflows depends on different type of natural resources.

The second objective investigates the effect of FDI on environmental degradation with a special emphasis on the role of institutions in mitigating the environmental repercussion of FDI. A system generalized method of moments (GMM) estimator is applied to a panel of 63 developing countries using data for the 1984-2016 period. Interestingly, two important conclusions emerge. First, both pollution haven hypothesis (PHH) and environmental Kuznets curve (EKC) are valid. Secondly, the impact of FDI on environmental quality is contingent on institution such that countries with better institutional quality are able to reduce the impact of FDI on the environment. This finding is consistent with the view that attracting FDI for improving economic growth will be harmful to the environment if a proper institutional framework is not maintained. This suggests that the benefits of having more FDI inflows depend on the ability of policymakers to improve and regulate the efficiency of institutions. Moreover, the results are robust to various alternative indices for institutional quality such as index constructed by principle component analysis and exclude outlier observations.

The final objective focuses on the growth-effect of FDI in 67 developing countries during 1984-2016 period, with a special attention given to the role of regime durability and regime types. Using two indicators of regime durability and three indicators of regime type, this study investigates the role of regime durability and regime types in the FDI-growth relationship. The results obtained from GMM estimation demonstrate that regime durability and regime type play crucial roles in moderating the positive effect of FDI on output growth. This suggests that marginal effect of FDI on economic growth depends on regime durability and regime type. The empirical results are robust to alternative measures of regime durability and regime type such as an index constructed using principle component analysis and average value, as well as FDI stock as an alternative measure of FDI. By and large, countries that have durable regime got more benefits from multinational corporations (MNCs) presence. This finding is consistent with the view that host countries must be able to absorb and internalize new knowledge linked to MNCs which will translate into higher output growth.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

PELABURAN LANGSUNG ASING, KUALITI ALAM SEKITAR DAN PERTUMBUHAN EKONOMI DI NEGARA-NEGARA YANG MEMBANGUN

Oleh

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Dalam beberapa dekad yang lalu, pelaburan langsung asing (FDI) nampaknya berperanan untuk strategi pembangunan di banyak negara membangun. FDI dipercayai mempunyai peranan penting dalam mempromosikan pembangunan ekonomi negara-negara tuan rumah melalui pemindahan teknologi. Akibatnya, banyak negara telah cuba menarik lebih banyak aliran masuk FDI dengan peraturan santai yang membatasi aliran modal asing bebas dan memberikan pelbagai insentif kepada firma asing. Walau bagaimanapun, tidak semua negara telah berjaya berjaya menarik aliran masuk FDI. Selain itu, sesetengah ahli ekonomi ragu-ragu mengenai impak penuh FDI kerana ia juga mungkin mempunyai kesan negatif terhadap kualiti alam sekitar. Mereka berpendapat bahawa mengabaikan potensi potensi FDI terhadap alam sekitar boleh memandang rendah kesan keseluruhan FDI ke atas ekonomi tuan rumah.

Objektif umum kajian ini adalah untuk menyelidik hubungan dinamik antara FDI dan petunjuk makroekonomi utama seperti kualiti institusi dan alam sekitar serta pertumbuhan output. Penunjuk kualiti institusi bateri digunakan menggunakan contoh negara-negara membangun untuk tempoh 1984-2016. Terdapat tiga objektif penting yang ditangani dalam tesis ini. Secara metodologi, kaedah pengiraan momen sistem umum (GMM) digunakan untuk menguji ketiga-tiga objektif.

Objektif pertama kajian ini adalah untuk menilai penentu FDI dengan penekanan khusus terhadap kesan komplementar antara demokrasi dan sumber semula jadi. Kajian ini menyiasat sama ada jenis eksport sumber asli yang berbeza akan mempunyai keupayaan untuk menukar hubungan antara aliran masuk demokrasi dan FDI. Objektif ini diuji menggunakan sistem penganggar GMM untuk 80 negara

membangun yang meliputi tempoh 1984-2016. Penemuan menunjukkan bahawa demokrasi mempromosikan aliran masuk FDI di negara-negara yang mengeksport mineral, makanan dan bahan mentah pertanian. Sementara itu, ia mengurangkan aliran masuk FDI di negara-negara yang mengeksport bahan bakar. Temuan ini konsisten dengan pandangan bahawa kesan demokrasi terhadap aliran masuk FDI bergantung kepada jenis sumber semula jadi yang berlainan.

Objektif kedua menyiasat kesan FDI terhadap degradasi alam sekitar dengan penekanan khusus terhadap peranan institusi dalam mengurangkan kesan alam sekitar FDI. Pengiraan kaedah umum pengiraan masa (GMM) sistem diterapkan kepada panel 63 negara membangun menggunakan data untuk tempoh 1984-2016. Menariknya, dua kesimpulan penting muncul. Pertama, kedua-dua hipotesis haus pencemaran (PHH) dan keluk Kuznets alam sekitar (EKC) adalah sah. Kedua, kesan FDI terhadap kualiti alam sekitar adalah bergantung kepada institusi seperti negara-negara yang mempunyai kualiti institusi yang lebih baik dapat mengurangkan kesan FDI ke atas alam sekitar. Temuan ini konsisten dengan pandangan bahawa menarik FDI untuk meningkatkan pertumbuhan ekonomi akan membahayakan alam sekitar jika rangka kerja institusi yang betul tidak dikekalkan. Ini menunjukkan bahawa manfaat mempunyai lebih banyak aliran masuk FDI bergantung kepada keupayaan pembuat dasar untuk memperbaiki dan mengawal kecekapan institusi. Lebih-lebih lagi, hasilnya mantap kepada pelbagai indeks alternatif untuk kualiti institusi seperti indeks yang dibina oleh analisis komponen prinsip dan tidak termasuk pemerhatian luar.

Objektif akhir memberi tumpuan kepada kesan pertumbuhan FDI di 67 negara membangun sepanjang tempoh 1984-2016, dengan perhatian khusus diberikan kepada peranan ketahanan dan jenis rejim. Menggunakan dua indikator ketahanan rejim dan tiga petunjuk jenis rejim, kajian ini menyiasat peranan ketahanan dan rejim rejim dalam hubungan pertumbuhan FDI. Keputusan yang diperolehi daripada anggaran GMM menunjukkan bahawa ketahanan rejim dan jenis rejim memainkan peranan penting dalam menyederhanakan kesan positif FDI terhadap pertumbuhan output. Ini menunjukkan bahawa kesan marginal FDI terhadap pertumbuhan ekonomi bergantung kepada ketahanan rejim dan jenis rejim. Keputusan empirik yang mantap kepada langkah alternatif ketahanan rejim dan jenis rejim seperti indeks yang dibina menggunakan analisa komponen prinsip dan nilai purata, serta saham FDI sebagai langkah alternatif FDI. Secara keseluruhannya, negara-negara yang mempunyai rejim tahan lama mendapat lebih banyak faedah daripada kehadiran syarikat multinasional (MNC). Temuan ini konsisten dengan pandangan bahawa negara-negara tuan rumah harus dapat menyerap dan menginternetkan pengetahuan baru yang berkaitan dengan MNC yang akan menghasilkan pertumbuhan output yang lebih tinggi.

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This is to confirm that:

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LIST OF ABBREVIATIONS

FDI	Foreign Direct Investment
GDP	Gross Domestic Production
GHG	Green House Gas
GMM	Generalized-Method-of-Moment
MNCs	Multinational Corporations
OECD	Organization for Economic Co-operation and Development
PHH	Pollution Heaven Hypothesis
SSA	Sub-Saharan Africa
UNCTAD	United Nations Conference on Trade and Development
EKC	Environmental Kuznets Curve
LDCs	Less Developed Countries
WBMIGA	World Banks' Multilateral Investment Guarantee Agency
WDI	World Banks Indicators
CO_2	Carbon Dioxide missions
PHH	Pollution Hallo Hypothesis
EIU	Economist Intelligence Unit
ICRG	International Country Risk Guide
FH	Freedom House
MBIs	Market Based Instruments
WTR	World Trade Report
CCS	Centre for Chinese Studies
MNEs	Multinational Enterprises
PRS	Political Risk Services

CHAPTER 1

INTRODUCTION

1.1 Introduction

This study aims to explore the determinants of foreign direct investment (FDI) and to investigate the impact of FDI on environmental quality and economic growth, focusing specifically on the roles of formal institutions and regime durability in developing countries. This study examines four types of natural resources, seven dimensions of institutions, two dimensions of regime durability, and four types of regime to identify the FDI determinants and effects of FDI on environmental quality and economic growth. The present chapter is organized into several sections as follows. The next section explains the background of the present study, followed by the problem statement. Subsequently, the objectives and significance of the study are presented. The last section describes the organization of the thesis.

1.2 Background of the Study

The economic literature is filled with a lot of studies which seek to enhance our understanding about why some countries are able to grow faster than the others. Several studies have highlighted that there are more than sixty variables that may help to explain the variations in growth performance across countries (see for example Durlauf, Johnson and Temple, 2005 and Sala-i-Martin, 1997). One of the factors which may contribute to better economic performance (especially for developing countries) is foreign direct investment (FDI). FDI is defined as a process through which residents of source country occupies ownership of assets for the purpose of controlling distribution, production and other economic activities of a firm in host country (Moosa, 2002)[1]. FDI by multinational corporations (MNCs) is widely accepted as an important component for economic development and productive capacity building in many countries. FDI is viewed as a way for local firms to improve their productive capacity and efficiency because it allows them to learn from, adopt from and imitate MNCs.

The adoption of pro-FDI policies and provision of incentives (i.e. both tax and fiscal incentives) to MNCs by many countries are based on the belief that MNCs will bring tremendous benefits to the host countries mainly in terms of new technology which may spillover to local firms. MNCs presence may also raise employment, exports and tax revenue. All these positive externalities are expected to improve the productivity and lead to higher economic growth (De Mello, 1999). FDI is widely known for their superior technologies as MNCs invest significant amount of capitals in research and development (R&D) activities. Additionally, they recruit a large number of technical

[1] Moosa (2002) states that the source country is considered as the 'home country' where investing firm is located, whereas the host country is considered as the 'foreign country' where the investing firm's foreign establishment is located.

and professional workers and provide extensive trainings for their workforce (Dunning, 1998). Apart from technology transfer, FDI is expected to play important roles in improving balance of payment position and reducing the foreign exchange shortage. Once MNCs have set up their subsidiary in host countries, some of the positive externalities associated with MNCs will be transferred to local firms because knowledge cannot be completely internalized. In addition, FDI is also viewed as a key source for creating new opportunities of employment, raising additional tax revenue, human capital development, increasing exports and trade and complementing domestic investment (Jenkins and Thomas, 2002).

One of the strongest arguments in favor of various incentives given to MNCs are based on the prospect for knowledge spillovers. Given that technology is a public good, investment by MNCs may result in benefits for host countries even if their activities are carried out in the form of wholly-owned affiliates. These benefits take the form of various types of externalities or "spillovers". For example, local firms may be able to improve their productive capacity by establishing forward or backward linkages with MNCs affiliates. Local firms may also imitate technologies adopted by MNCs or hire workers who were previously trained by MNCs. It has been widely known that MNCs spend significant amount of money for improving the quality of their workforce. The increase in competition brought by MNCs may also be considered as a positive externalities as it may force local firms to be more competitive by engaging in R&D activity and work harder. Additionally, local firms may explore the global market by following the MNCs footsteps since they are known for their extensive global network. All these benefits are expected to improve the productivity of local firms, leading to the expansion of economy.

In order to tap the benefits associated with FDI inflows, many countries are competing for this important component of foreign capitals by relaxing regulations surrounding foreign investments. Many governments have introduced various types of investment incentives to encourage MNCs to invest in their countries such as fiscal incentives (i.e. tax and tariff exemption and low corporate tax rates), financial incentives (i.e. loan and land subsidies) and others incentives (i.e. special economic zones, infrastructure subsidies, R&D subsidies and reducing bureaucracy). Table 1.1 provides the changes in national investment policies across the globe during the 1991-2016 period. Overall, the figures reveal that the numbers of investment policy changes directed towards liberalization of investment policies far outweighed the number of restrictive policies. On average, 57 countries change their foreign investment policy (both liberalization and restrictive) over the past 25 years. Additionally, 112 regulatory changes were implemented per year with 82% of the changes were made to facilitate foreign investment flows. These positive changes provide strong incentives for MNCs to expand their operations globally. The figure also reveals that the highest number of changes were made during 1996-2000 with 140 regulatory changes per year. Since then, the changes declined gradually. However, recent data for 2016 shows that the competition for foreign capital has intensified again as 124 regulatory changes were recorded that is exceeding than the 25 years average (i.e. 112) of regulatory changes.

Table 1.1 : Annual Changes in national investment policies (1991 – 2016)

	1991-1995	1996-2000	2001-2005	2006-2010	2011-2015	2016	Average
Number of countries that introduced changes	50	67	62	53	51	58	57
Number of regulatory changes	97	140	126	96	88	124	112
Liberalization/ Promotion	95	130	108	71	64	84	92
Restriction	2	10	14	24	18	22	15
Neutral/indeterminate	0	0	4	3	7	18	5

[Sources: UNCTAD, Investment Policy Monitor database (2005, 2017)]

As a result of these policy changes, global FDI pattern reveals a substantial improvement since 1970s. According to the data provided by United Nations Conference on Trade and Development (UNCTAD, 2005, 2017), global FDI inflows rose from $13.257 billion in 1970 to $1.4298 trillion in 2017, representing an improvement of 10,785% during the period. The increasing trend can be observed in both developing and developed countries (see figure 1.1). The highest amount of FDI flows was recorded at $1.9 trillion in 2007. As a matter of fact, global FDI growth rate is higher than the growth rates of world export and GDP. According to the World Investment Report by UNCTAD (2018), the global inflows of FDI has increased sevenfold as compared to the world export and GDP which grew by less than quadruple over the 1990-2015 period. The figure depicts that during the earlier periods (prior to 2012) most of the FDI flowed into developed countries. Nonetheless, developing economies are obviously becoming more attractive for MNCs investment as they are able to attract more FDI flows in recent period (after 2012). For the first time in 2012, the amount of FDI flows into developing countries are more than developed countries with the highest proportion was recorded in 2014 (i.e. 54.75% of global FDI flows). One of the reasons for the changes of this trend is because of slowdown in developed economies and therefore developing countries appear to be the best alternative. Moreover, the rate of return on investment is high in developing economies than in developed economies.

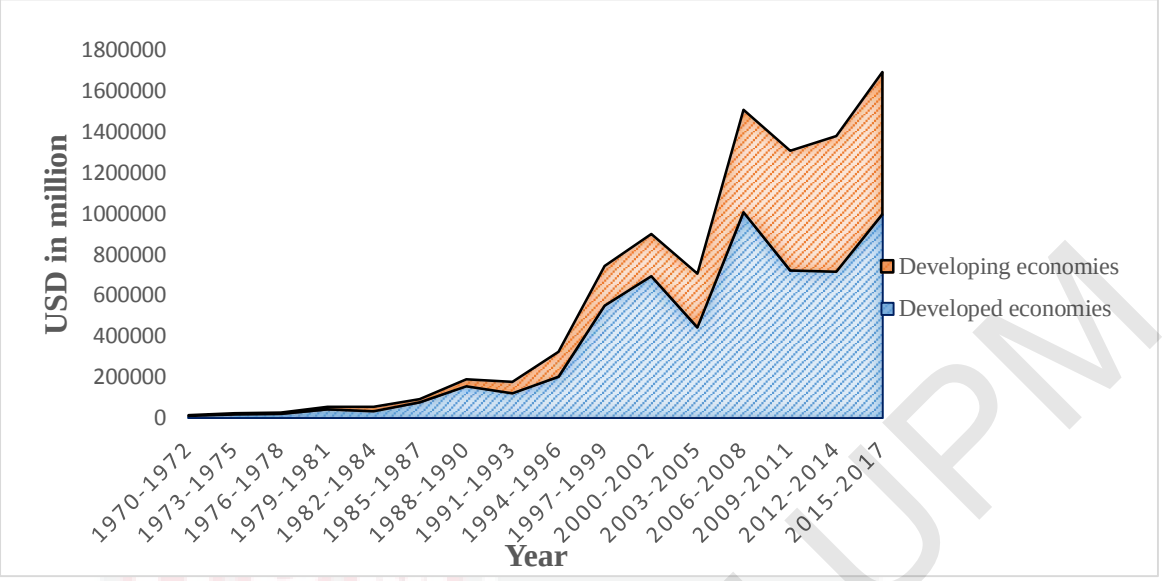


Figure 1.1 : FDI Inflows into developed and developing economies
(Source: UNCTAD statistical database)

1.2.1 An Overview of FDI, Democracy and Natural Resources

In the past two decades, the relationship between democracy and FDI has become one of the central issues discussed among policy makers, especially in developing economies. World Bank and many other international financial and development agencies consider FDI as one of the central dynamic components for starting economic activities and augmenting the economic growth and motivate less-developed countries to attract more FDI by making new policies. Most countries that need more FDI have nondemocratic governments and weak democracies. According to the theoretical perspective, the relationship between democracy and FDI is unclear (Li and Resnick, 2003; Jensen, 2003)[2]. FDI inflows are more attracted to countries with strong democratic institutions. Democratic institutions impose higher check and balance on elected political leaders and government officials, thus strengthening the property right protection, reducing the policy reversal and lowering the arbitrary government intervention (North and Weingast, 1989; Li, 2009)[3]. The FDI-democracy nexus is influenced by the level of natural resource endowment that differs between countries, as explained through two plausible justifications by Asiedu and Lien (2011). First, foreign investors and MNCs are more interested in extractive industries in rich natural resource countries and invest more in this sector. Exploration and extraction of natural resources require a higher initial investment and a stable economic environment in

[2] For more information about the effect of democracy on FDI, see Jensen (2003) and Li and Resnick (2003).

[3] Asiedu et al. (2009) argued that policy reversal risk (for example, variation in the royalty fees, taxes and laws) has a significant adverse effect on FDI due to its nature of irreversibility that is considered partial expropriation. Autocratic governments are more likely to expropriate FDI than democratic regimes (Li, 2009). Li (2009) also argued that autocratic governments were responsible for 520 incidents of expropriation transpired between 1960 and 1990, and about 80 percent of incidents of expropriation.

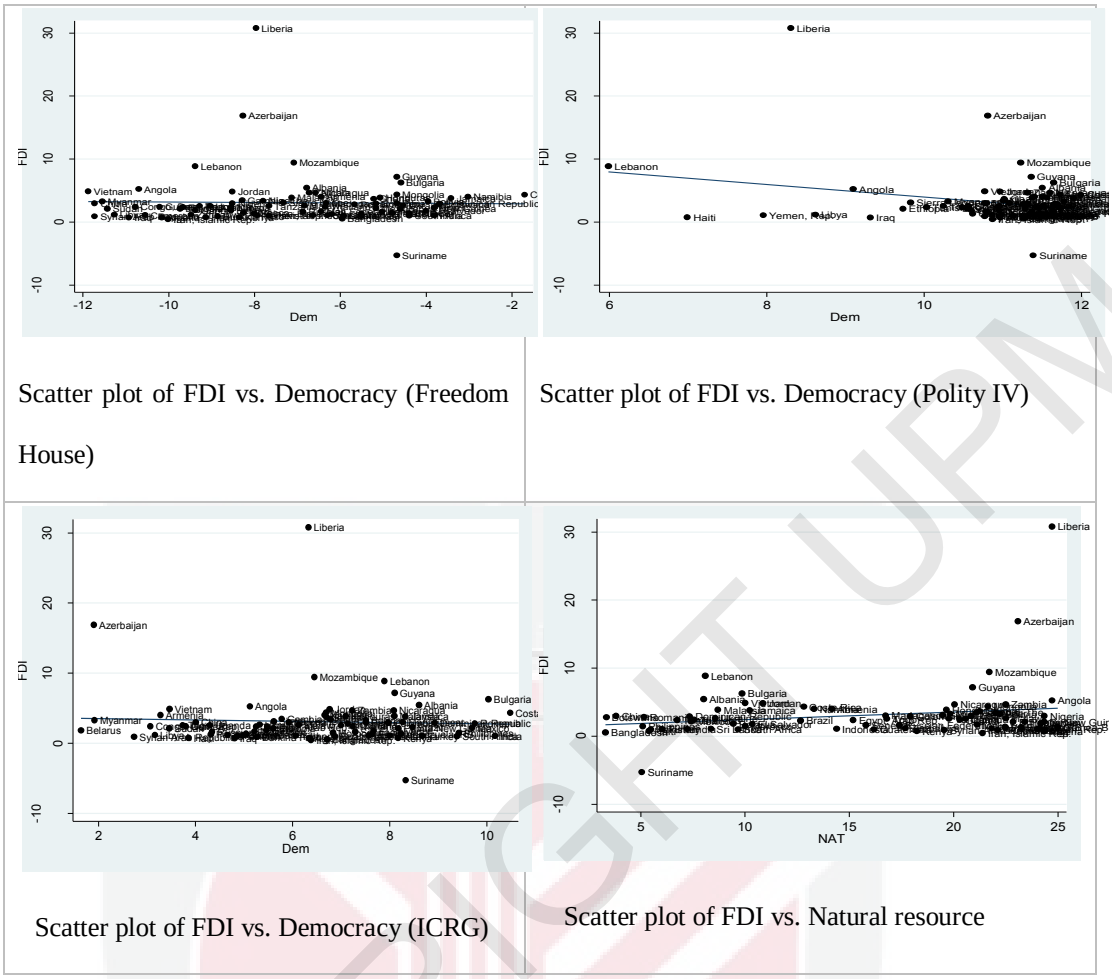
host countries is important for MNCs. This initial investment by foreign investors is associated with long gestation periods and a high degree of uncertainty. However, MNCs consider a stable and predictable business environment as well as the longevity of the government as the most important factors influencing their investment decision. Secondly, foreign investors and MNCs invest in extractive industries in host countries that are driven by access to natural resource endowment. These extractive industries have financial, strategic and political importance for host countries. As a result, governments tend to tightly control the extractive industries in natural resource sectors where there is a lot of foreign capital inflow.

Thus, policy makers are very keen to learn whether foreign direct investors in natural resource exporting countries would prefer more or less democracy. They are also interested to know whether democracy facilitates FDI and if natural resources can alter the relationship between democracy and FDI inflows. Due to the unclear effect of democracy on FDI, answers to these questions cannot be derived from theory[4]. FDI inflows may be positively affected by the political and democratic institutions due to the provision of check and balance on elected officials in a democratic environment, which in turn strengthens property right protection, reduce arbitrary government intervention and lowers the risk of policy reversal (Li, 2009)[5]. In general, a stable policy environment is important for MNCs. Since MNCs are more interested in extractive industries where the extraction and exploration of minerals involve a large scale capital-intensive investment, democracy may facilitate more inward FDI depending on the natural resource endowment in the developing countries.

Figure 1.2 demonstrates a negative relationship between FDI and the Freedom House measure of democracy (R^2=0.0004). This figure depicts a negative relationship between FDI and Polity IV measure of democracy (R^2=0.067) and also reveals a negative link between FDI and ICRG measure of democracy (R^2=0.002). The relationship between FDI and natural resources is positive, showing that a higher magnitude of natural resources at the initial level will attract more inward FDI. The different measures of democracy and natural resources are averaged over the period 1984 to 2016 for developing countries.

[4] In another study, Jensen (2003) developed a number of empirical models on foreign direct investment inflows and documented that democratic institutions have a large positive impact on foreign direct investment and a higher level of democracy attracts a higher level of foreign direct investment inflows. Similarly, Li and Resnick (2003) suggested that democratic institutions in developing countries may affect foreign direct investment, both negatively and positively.

[5] Li (2009) argued that both autocratic and democratic governments expropriate FDI but autocratic governments expropriate FDI more than the democratic governments.



Scatter plot of FDI vs. Democracy (Freedom House)

Scatter plot of FDI vs. Democracy (Polity IV)

Scatter plot of FDI vs. Democracy (ICRG)

Scatter plot of FDI vs. Natural resource

Figure 1.2 : FDI, Democracy and Natural Resource, 1984-2016

1.2.2 Institutional Quality, FDI and Environmental Degradation

International efforts to reduce CO_2 emissions have become a key policy objective to mitigate the adverse effects of climate change at the global level. Global CO_2 emissions and its adverse effects can be meted through the commitment of developing nations that are a major source of CO_2 emissions. Since 1989, profound structural reforms in developing countries continued to affect CO_2 emissions and created an adverse effect on global mitigation strategies. Developing countries that are experiencing rapid economic growth has a growing thirst of attracting foreign capital, particularly the FDI. These economies are heterogeneous in terms of relative development, institutional and governance quality, and income level. They also share similar structural reforms that would ultimately lead to a shift in the production of output. Similarly, developing economies that are more advanced in their structural reforms are attracting more FDI, improving institutional quality and achieving a higher level of economic growth, although their CO_2 emissions are also higher. The environmental policies in many developing economies are not as rigorous as their need to improve and sustain higher economic growth. These economies are making social and economic reforms to attract foreign capital. Foreign capital in the form of FDI inflows enhances economic growth but at some cost of environmental degradation

(He, 2006). To a large extent, FDI inflows in the recipient nations positively influence economic prospects. In the late 1980s, almost all world economies have opened up for foreign capital that leads to higher economic growth. However, following the increase in FDI, there is evidence of an erratic increase in energy consumption and CO_2 emissions.

The turning point at a lower per capita economic growth in the environmental Kuznets curve (EKC) occurs when economies have stricter laws that are effective in reducing pollution emissions (Castiglione et al., 2012). The ability of governments to enforce and implement contracts is also a source of reduction in deforestation[6] (Culas, 2007), while a stronger level of civil liberty and political rights enhances the quality of the environment (i.e. reduction in annual deforestation rates). Similarly, the role of institutional adaption, implementation and change is crucial for declining the managing risk and uncertainty to reduce the pollution emissions. The common indicators of governance and institutions are the rule of law and democracy that are more likely to play a positive role in the reduction of pollution emissions. However, many studies have found that non-democratic governments tend to care less more about environmental quality due to their focus on financial and other resources (Bernauer and Koubi, 2009). Corruption in developing economies also has indirect and direct effects on environmental quality. The direct effects on environmental quality are via less stringent rules and laws about environmental performance, while indirect impacts jeopardize economic growth via corruption, as well as the environmental impact on pollution emissions (Welsch, 2004). The literature related to environmental and institutional quality on environmental pragmatism demonstrated that the protection of environmental quality requires stringent policymaking and strong participatory democracy, governance and institutions (Maboloc, 2016).

In the quest of economic development many developing countries put economic growth, energy consumption and industrialization on top of their agenda. In the process, environmental issues are often neglected. In the past few decades, all indicators of environmental degradation (such as greenhouse gas emissions, deforestation and loss of biodiversity) demonstrate that they are more accelerating. Such environmental destruction have been driven by increased economic activity, of which FDI has been blamed as one of the significant contributor. In many developing countries, industrialization has been viewed as an important development strategy. However, industrialization requires massive use of energy resources which could lead to pollution and environmental degradation. For instance, China has adopted a model which is energy intensive, with strong focus on investment and industrialization, and the model is now used by a number of other developing countries. Apart from that, China has the biggest population in the world and to fulfil energy demand of population more combustion of fossil fuels is required. Should China emphasized on curbing pollution at the early stage of development, the impressive economic growth and development recorded in recent years would not been have achieved.

[6] In literature, deforestation was used as a proxy of environmental quality, it is expected that the environmental quality reduces as deforestation increases (such as Bokpin, 2007; Culas, 2017).

Figure 1.3 reveals that China is the biggest contributor to global CO_2 emissions (31%), followed by the U.S.A (16%), European Union (EU) (9%), India (7%), Russian Federation (5%) and Japan (4%). The EU (comprises of 46 countries) which undertook extensive reform on environmental protection policies on climate change only release 9% CO_2 emissions. In this region, many countries have shifted from fossil fuel to solar and wind energy usage as ways to generate energy. However, in some part of region like sub-Saharan African, many countries depend heavily on natural resources for revenue and foreign exchange. Their economies are driven by funds generated from exploitation of natural resources. However, the over-exploitation of resources result in environmental degradation. The theories predict that industrialization and the proliferation of FDI will exacerbate existing unsustainable patterns of development in developing countries unless it is matched by a more efficient use of natural resources. However, these problems are less prevalent in developed countries as they have achieved substantial economic growth and development and can afford to focus on environmental goals because basic living necessities have been met.

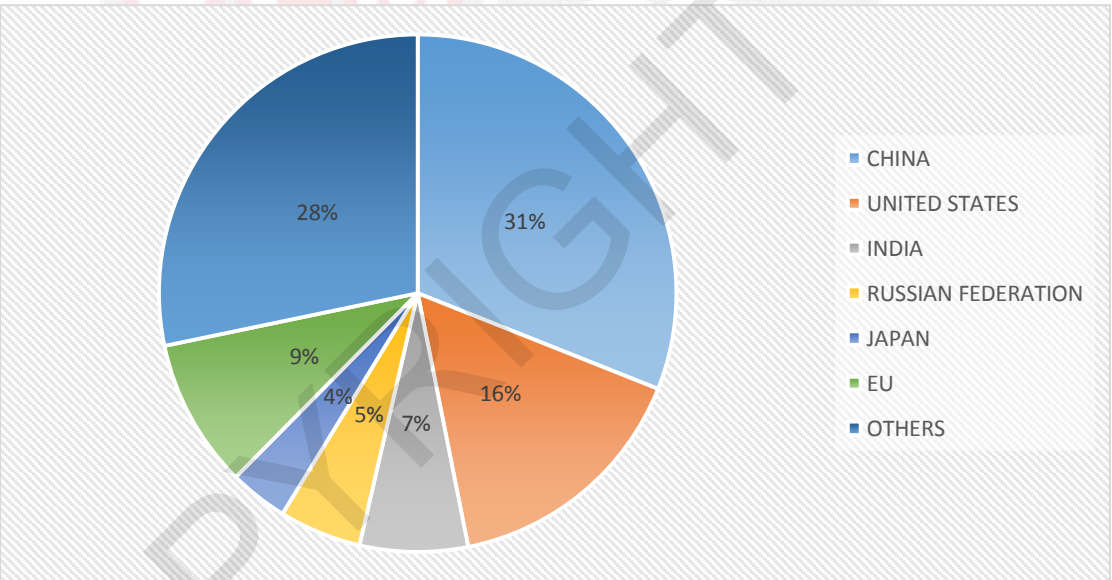


Figure 1.3 : Top CO_2 (in thousand metric tons) emitters in 2014
(Source: United States Environmental Protection Agency)

Figure 1.4 shows the trends of CO_2 emissions across the globe. Overall, the figure shows that the global CO_2 emissions is trending upwards. In fact, the CO_2 emissions recorded in recent year is 74% higher than the level reported in 1985. However, a closer look at the data across different groups suggests that emission from the OECD and EU-28 countries has been relatively stable over the period and the main source of rising pollution is actually from the non-OECD countries. It should also be pointed out that the level of emission for both OECD and non-OECD were similar during 1990s. However, the figures suddenly diverge as pollution from the non-OECD countries has been rising at a faster rate. Meanwhile, the EU-28 countries are the least polluters which reflect their active and continuous efforts in combatting pollution. In fact, the recent data suggests that the level of CO_2 emissions from this region is lower than the one reported in 1985.

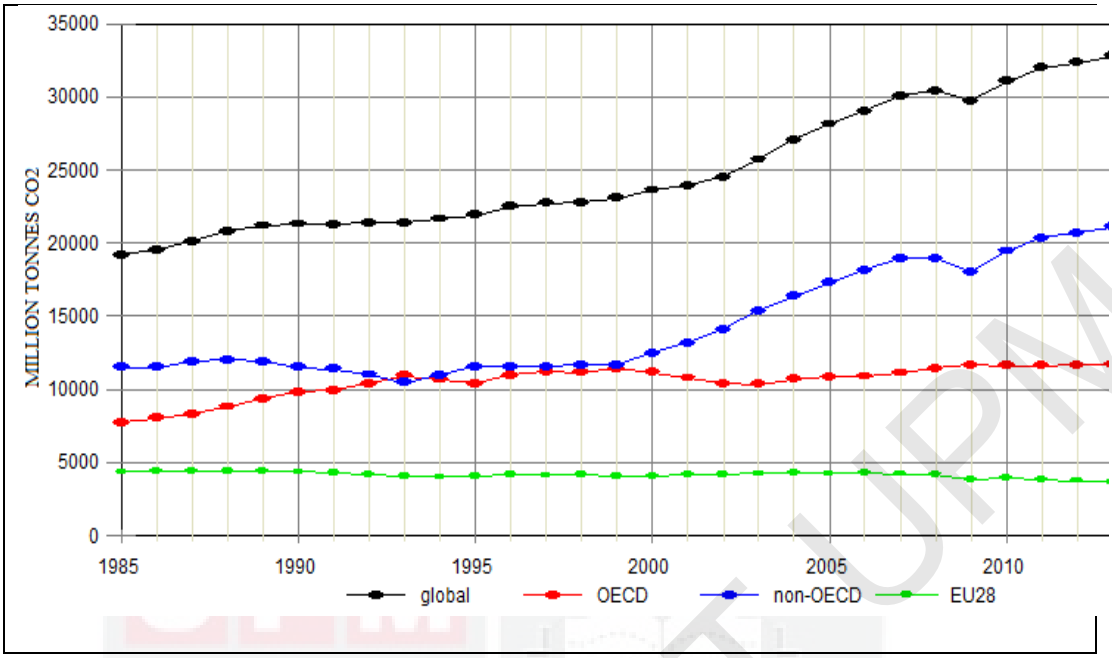
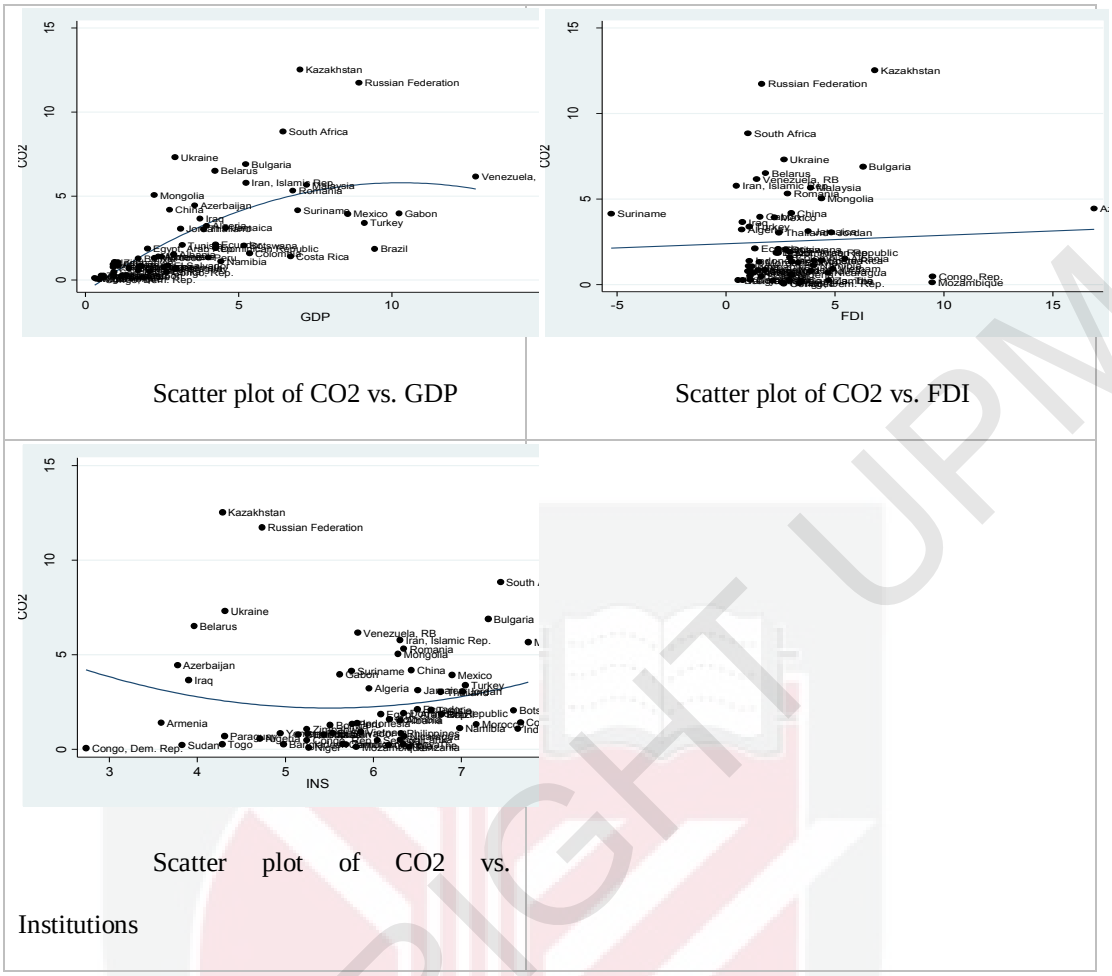


Figure 1.4 : Trends of CO_2 emissions
(Source: BP Statistical Review of World Energy 2018)

Figure 1.5 reveals the relationship between CO_2 emissions and GDP per capita for the whole sample using data that is averaged over the entire time period (1984-2016). The figure shows an inverted U-shaped shaped fitted line revealing a strong relationship between CO_2 and GDP per capita (R^2=0.41) that provides initial support to the environmental Kuznets curve hypothesis (EKC). This figure also displays a positive but weak relationship between FDI and CO_2 emissions (R^2=0.003). However, this simple correlation may not imply causation, which is the type of relationship that we want to investigate. If institutions play a key role in influencing FDI effects on CO_2 emissions, we may expect that economies with equal levels of FDI would have a different level of CO_2 emissions. This figure shows a U-shaped pattern of association between institutions and CO_2, implying that institutions can influence the reduction of CO_2 emissions at a certain level. However, the correlation between CO_2 and institutions indicates a weak link (R^2=0.08).



Scatter plot of CO2 vs. GDP

Scatter plot of CO2 vs. FDI

Scatter plot of CO2 vs. Institutions

Figure 1.5 : CO_2, GDP, FDI and Institutions, 1984-2016

1.2.3 Regime Durability and Regime Types in the FDI-Growth Nexus

Several studies have confirmed the progressive effect of FDI on economic growth in economies with thriving political stability and international-ranked superiority in terms of income per capita. To recognize further the growth effects of FDI in developing countries, this study draws the dynamics of regime durability (as a proxy for political stability) and regime durability (as a proxy for democracy) in the FDI-growth nexus as highlighted in recent literature[7]. In particular, this thesis emphasizes on the importance of regime durability as a moderating factor to explain the mechanism of FDI-growth nexus[8]. Thus, this study essentially argues that a lack of

[7] The terms regime durability is used as a proxy for political stability and regime type is used as a proxy for democracy, as used in economic literature such as Adams and Klobodu (2016).

[8] According to Roland (2005), institutions can be classified into two categories namely "fast-moving" (political institutions) and "slow-moving" (social norms, beliefs and culture), where political institutions can quickly be changed and slow-moving institutions may reveal gradual changes. Transition economies constructed their individual system of political institutions, including judiciary branches of the government, executives and legislations that are related to governance and democracy. Roland (2002) associated the economic development and institutions in these economies through theoretical review of political economy.

political stability in countries can limit the internalization of advance technology and the nation's (firm's) absorption capacity from MNCs. To date, many studies emphasized on political stability and the quality of political institutions, but their main focus remained on the direct effect on economic growth. Foreign capital is mostly concentrated in those countries with strong socioeconomic policies, powerful political system and higher quality of political and economic institutions. For developing countries, there is limited literature related to the contingency effect of political stability and democracy on the FDI-growth nexus. As the issue of FDI-economic growth nexus is yet to be resolved, this study seeks to explore the impact of FDI on economic growth with regime durability and regime type as moderating factors in developing countries. Although recent literature on political and democratic stability has gained popularity in explaining the performance of economic growth, only partial econometric evidence supported the moderating role of political and democratic stability on the FDI-growth nexus. Malikane and Chitambara (2017) showed that FDI is most potent when democracy is at a higher level in developing countries. However, FDI without sound political institutions may not spur the economic growth in the long run.

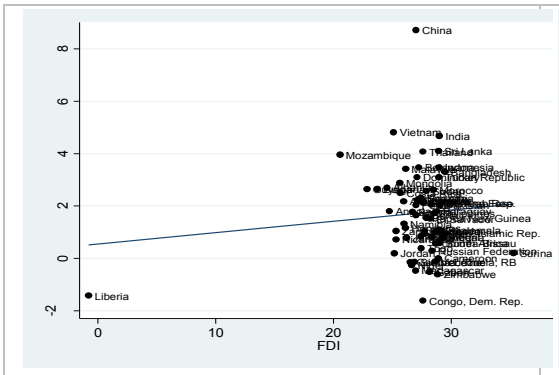
The significant improvement in FDI flows across the globe is related to regulatory reforms (i.e. changes in investment policy) which reflects the importance of institutional quality in stimulating economic activity. The importance of institutions was recognized by North (1990), among many others, who point out that institutional reforms like protection of property rights, effective enforcement of law, and efficient bureaucracies, together with a broad range of norms and civic morality, are critically important for stimulating economic performance.[9] The idea was echoed by Acemoglu, Johnson and Robinson (2005) who use the historical example of the two Koreas to explain the importance of institutional reforms. At the end of the Second World War, there were little differences between North Korea and South Korea in terms of economic development and structure. The main difference has been in terms of the choices made in institutional transformations. South Korea implements a system of private property and adopts an economic model which is based on private incentives and market forces which transform its economy into one of the Asian Tigers. Meanwhile, North Korea follows the communist model which restrict private property right and implement extractive institutions. As a result, its economic progress has been slow and lags behind South Korea. In fact, absolute economic development in North Korea has been declining since the 1990s. The experiences of these two countries obviously provide a clear evidence which support the idea that institutional quality is essential in stimulating long term economic progress.

In economic literature, several studies have revealed that sound formal institutions are critically important for economic activities and growth (for instance see, Demetriades and Law, 2006; Rodrik, Subramanian and Trebbi, 2004; Acemoglu, Johnson and Robinson, 2001). For instance, Knack and Keefer (1995) show that in their cross-country estimation results indicate that institutional factors such as property rights protection and rule of law have a positive and statistically significant relationship with

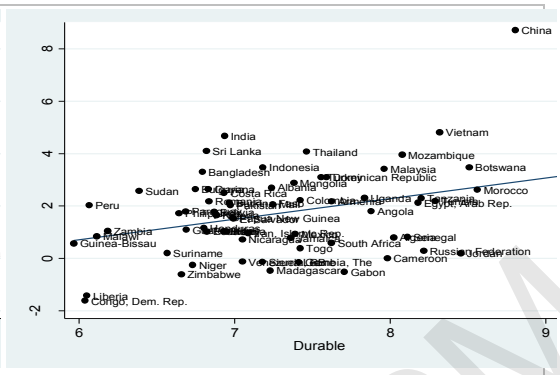
[9] North (1990) defines institutions as humanly devised constraints that shape interaction between people.

economic performance. Demetriades and Law (2006) find that stronger institutions are more important than financial developments in explaining output per capita in low-income countries. Meanwhile, Rodrik et al. (2004) show that quality of institutions overrides geography and integration in explaining variations in cross-country income levels. Acemoglu et al. (2001) use the protection from the expropriation risk index constructed by the ICRG as a measure of efficiency of current institutions. The authors reveal that variations in institutional quality explain approximately three-quarters of the income per capita differences across countries.

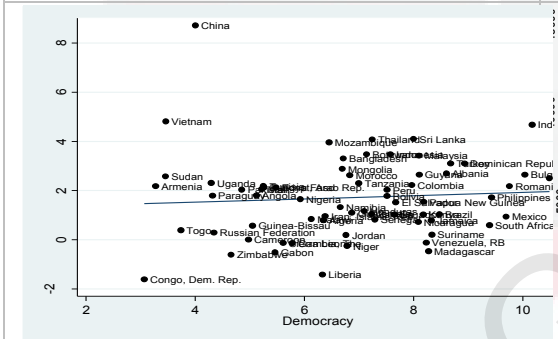
Figure 1.6 shows the positive association of economic growth with FDI, regime durability, regime type and institutions in developing countries, as included in the sample dataset from 1984 to 2016. The figure reveals that countries with a higher level of FDI, regime durability, regime type, and institutional quality perform better in terms of economic performance than countries with a lower level of regime durability, regime type and institutional quality. Particularly, countries that have reformed their institutions are stronger, grow faster and have significantly higher per capita income. For instance, the Democratic Republic of Congo has the lowest value of the institutional quality index (2.77) and Malaysia has the highest index value (7.90). GDP per capita for Congo is among the lowest while Malaysia is among the top 10 developing countries in terms of GDP per capita. This observation is consistent with the assessment that countries that undertake institutional reforms seriously can grow faster than countries that do not give due importance to institutional reforms.



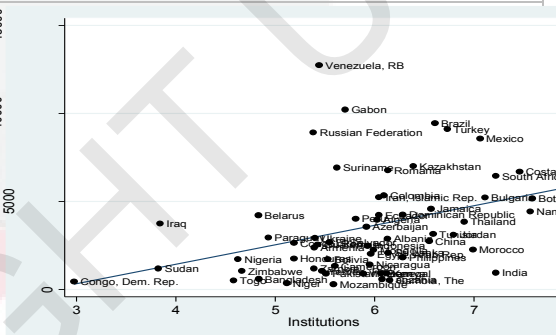
Scatter plot of FDI vs. Economic Growth



Scatter plot of Regime Durability vs. Economic Growth



Scatter plot of Regime Type vs. Economic Growth



Scatter plot of Institutions vs. Economic Growth

Figure 1.6 : Economic Growth, FDI, Regime Durability, Regime Type and Institutions 1984-2016

1.3 Problem Statement

Most less-developed economies that require more external financial capital have non-democratic or weak democratic governments. The question is whether democratic developing countries can attract higher FDI. Whether foreign firms operating in natural-resource-exporting countries prefer less democracy or higher democracy is ambiguous in the existing literature. If economies learn that a higher level of democracy discourages inward FDI, then these countries may opt to choose a trade-off between attracting more FDI and higher democracy. Ultimately, democracy may or may not facilitate more inward FDI depending on the natural resource endowment of individual countries. Another important observation is that not all countries are able to attract MNCs despite of various incentives offered to MNCs. One notable observation in recent years is that developing countries and transition economies are becoming more popular destinations for MNCs as they are able to attract more FDI inflows than developed countries. Developed countries have been dominating global FDI market for many decades but the trend has changed in 2012 after more than half

of global FDI flows, FDI poured into developing countries with the highest proportion of 54.7% (of global FDI) was recorded in 2014. This observation has motivated policymakers and economists to find out the reasons which may explain variations in FDI inflows across countries. In recent years, many economists have been focusing on the role of institutional quality in economic development. However, the role of institution like democratic institution in explaining FDI flows is scarce and the findings are inconclusive. This study argues that the availability of natural resources in the host countries may explain the link between democracy and FDI inflows.

Over the past many decades, FDI is viewed as an important element of development strategy for many countries, especially the developing ones. Many governments believe that FDI may bring benefits in term of new technology. FDI is able to improve employment, exports, tax revenue and balance of payment position and foreign exchange earnings. Based on these positive expectations many countries have liberalized their market by allowing greater flexibility for MNCs to invest in their jurisdictions. Various forms of incentives were offered to MNCs by host countries in order to compete for this limited foreign capitals. As a result of active efforts to attract FDI, there were significant improvement in global FDI flows in the past few decades.

While many have argued in favour of positive externalities linked to FDI, some are sceptical about the overall impact of MNCs presence in the host economy. FDI not only brings new technology and method of productions but may also play crucial role in bringing negative spillovers to the host countries. One strong criticism against FDI is that MNCs presence may have some environmental repercussions. Theoretical arguments suggest that the flow of FDI may have environmental consequences (Hoffmann, Lee, Ramasamy and Yeung, 2005)[10]. It is argued in the emerging literature that the flow of FDI into developing countries may contribute to different forms of environmental degradation and pollution (Jorgenson, 2009). In the past decades, there is increasing trend of environmental degradation in developing countries like greenhouse gas emissions, deforestation, loss of biodiversity and others due to increase economic activity including those by MNCs activity. Interestingly, the rising pollution in developing countries has been coincidental with increased FDI inflows. It has been argued that in some cases MNCs often requires host countries to create a more favourable operating environment for them. These conditions have often include exemptions to environmental rules and regulations that are designed to protect the environment. Arguably, this is more likely to happen in low income countries because they are less able to afford the cost of implementing and monitoring environmental regulations. Additionally, they may not have sufficient skilled labour and good infrastructure. Nevertheless, there is no clear evidence to support the argument that the quality of institution may alter the environmental repercussion of FDI.

[10] Hoffman et al. (2005) supported that the pollution haven hypothesis applied only in low-income countries. The results provided two reasons for this mechanism. First, low-income countries are less able to afford the cost of monitoring and implementing environmental regulations. Second, these countries have low-skilled labor and good-quality infrastructure with lax environmental regulations.

Although there is a strong theoretical prediction that the positive externalities link to FDI is tremendous, evidence shows that the spillovers from MNCs to local firms are not uniform as few countries are able to benefit more than the others. In fact, some countries remain poor with low productivity despite of having more FDI inflows. The empirical literature reveals that the benefits attributed to FDI inflows is inconclusive because evidence suggest that FDI exerts positive impacts on growth only in some cases but in some other cases there is no or even negative impacts. Prevailing social and economic conditions in developing countries are completely opposite to the theoretical predictions of FDI flows. Nevertheless, international investors tend to be interested to invest in developing countries with investment enabling the environment and improved political stability that provide an attractive economic environment for FDI inflows. Similarly, the improvement in institutional quality, sound economic policies and increasing political stability in these countries also project the strong image that attracts more inward FDI. The absence of strong democratic institutions creates a poor economic environment that reduces the amount of inward FDI and affects economic growth and development (Hall and Jones, 1999). Economists and policymaker alike have been searching for the answer which may explain weak relation between FDI and growth/productivity. Recently, they found that the failure of host countries to absorb and internalize benefits associated with MNCs presence is due poor domestic condition which weaken the transfer of new knowledge to local firms. Taking its cue from recent literature which emphasize on the importance of institution in economic development, this study argues that the moderating effects of regime durability and regime types in the host countries may be able to shed new lights on the link between FDI and output growth. By taking advantage of recent econometric estimation methodology, this study intends to answer the following important questions:

(i) Can natural resources have the ability to regulate the impact of democracy on FDI inflows?
(ii) Does institutional quality moderate the effect of FDI on environmental degradation?
(iii) Does regime durability and regime types have any impact on FDI-growth nexus?

1.4 Objectives of the Study

The general objective of this study is to investigate the dynamic links between FDI and key macroeconomic indicators such as institutional and environmental quality as well as output growth. Specifically, this study aims to:

(i) Investigate the role of democracy as one of the determinants of FDI and the moderating effect of natural resources.
(ii) Evaluate the role of institutional quality on the FDI-environmental degradation nexus.
(iii) Examine the role of regime durability and regime types on the FDI-growth nexus.

1.5 Significance of the Study

This thesis contributes to the policy implications and existing body of knowledge in several important aspects. First, several studies on FDI-environment link have produced mixed results. This study is an attempt to shed new light on this conflicting finding by exploring the potential role of institutional quality as a moderating factor. Secondly, this study provides new evidence on the impact of democracy on FDI inflows by taking into account the role of natural resources availability. Thirdly, this study addresses one of the critical factor in linking FDI and economic growth namely regime durability. Finally, this study uses a battery of indicators for the key variables to ensure the results are robust.

This thesis contributes to the policy implications and the existing body of knowledge in several important aspects. First, the emphasis of this thesis is on the direct and indirect effects of democracy and natural resources through various interactive processes on FDI in developing countries. The contribution of this study into existing literature would expand the dimensions of FDI determinants. In previous literature, little attention has been given to democracy and natural resources as the fundamental determinants of FDI. The contribution of this study is to provide in-depth insight into democratic institutions and natural resource as fundamental determinants of FDI in developing countries. This study applies the interaction approach of Brambor, Clark and Golder (2006) to compute the marginal effect of democracy on FDI, contingent on natural resources. This study is different from other studies because it uses three data sets for democracy for simultaneous analysis and computes the marginal effect. The findings of this study are practical and useful for governments and policy makers in developing countries to attract more FDI by strengthening democratic institutions to support economic activities and growth.

Second, limited studies have been established on environmental quality and FDI where institutions play a significant role as a contingent variable. Given the ambivalent nature of environmental quality determinants as highlighted in the literature, this study is an attempt to re-examine the issue whether institutions, FDI inflows and economic growth can be part of the solution rather than becoming the cause of environmental problems. This thesis is the first systematic quantitative research that conceptually relates FDI inflows, institutional quality, economic growth, pollution emissions and interactions between FDI and institutions. The contribution of this study is to establish that institutions can, directly and indirectly, mitigate the negative consequence of FDI on environmental quality. This study also uses the interaction approach of Brambor et al. (2006) to compute the marginal effect of FDI on CO_2 emissions, contingent on institutions. The findings of this study are practical and useful for governments and policy makers in developing countries to reduce and mitigate the negative consequences of FDI on environmental quality through improving the quality of institutions.

Thirdly, this thesis mainly focusses on the primary role of regime durability and regime types that play a contingency role in moderating the effect of FDI on economic growth. Limited studies have been established on the growth effect of FDI, where regime durability and regime types play a significant role as contingent variables. This study employs four indicators of regime type and two indicators of regime durability in investigating the role of these variables on the FDI-growth nexus. The contribution of this study is to provide insights into the ability of regime durability and regime types to enhance the positive externalities of FDI on economic growth. This study applies the interaction approach of Brambor et al. (2006) to compute the marginal effect of FDI on economic growth, contingent on regime durability and regime types. The findings of this study are practical and useful for governments and policy makers in developing countries to enhance the positive externalities of FDI on economic growth by strengthening the political system, political institutions and institutional environment.

To the best of our knowledge, this thesis is the pioneer study that computes the marginal effect of democracy on FDI, contingent on natural resources; the marginal effect of FDI on CO_2 emissions, contingent on institutions; and the marginal effect of FDI on economic growth, contingent on regime durability and regime types. Finally, this study uses a variety of indicators for the key variables to ensure the results are robust.

1.6 Organization of the Thesis

This thesis is divided into five chapters. Chapter one provides an overview of the issues addressed in this thesis. It also states three specific objectives to be tested. Chapter two provides a review of past literature. This chapter is divided into two important sub-sections namely theoretical and empirical reviews. Chapter three elaborates the theoretical foundation, fitted model and econometric methodology. It also describes all the data used in the analysis. Chapter four presents and discusses the findings. Chapter five provides the conclusions and suggests some policy recommendations.

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