



# Institutional Quality, Political Instability and Greenfield FDI in Greater Middle East

MASTER THESIS – STRATEGY ECONOMICS

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## **Abstract**

This master thesis aims to investigate the relationship between greenfield FDI institutional quality and political (in)stability in an understudied region; Greater Middle East. Beside the low quality of institutional factors and high political instability, the research incorporates the other principal characteristic of the region which is natural resources bonanza. It also studies the interaction effect between institutional quality (including level of political stability) and natural resources to check whether the availability of natural resources affects the relationship between greenfield FDI and institutional quality. Regression results of the Poisson with robust standard errors indicates a positive and statistically significant association between institutional quality and political stability on greenfield FDI in the studied region. On the other hand, regression results suggest no significant relationship between greenfield FDI and natural resources endowment. Research offers two main implications for policymakers; in order to attract more greenfield FDI, improvement of institutional quality should be on GME's governments agenda. Additionally, it warns policymakers about degrading attraction of natural resources for foreign investors and the necessity of lower the dependence of GME countries to natural stocks.

### **Keywords:**

Foreign direct investment, greenfield FDI, Greater Middle East, institutional quality, political stability, political instability, natural resources, resource-seeking motives

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# 1. Introduction

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The construction of the global economy's new order has been initiated after World War II, in the 1950s. The adoption of non-resident convertibility in Europe in 1985 was a turning point in Foreign Direct Investment (FDI) life cycle, leading to a drastic increase in inflows from the United States toward Europe. The collapse of fixed exchange rates of Bretton Woods raised the flows between rich countries, and progressive reduction of world trade barriers and layout of the nontariff obstacles entered the developing countries into the international trade dynamic (Jones, 2005). Today, multinational enterprises (MNEs) can invest in a second country through numerous ways, including FDI (greenfield or acquisition), sharing ownership via a joint venture, licensing, franchising, cartels, and other types of strategic alliances (Caves, 1996). OECD (2002) mentions FDI as a paramount accelerator for development, however, it states that this type of investment cannot lead to economic growth in the absence of a sufficiently strong institutional, legal and financial context in the host country.

Determinant factors of the attraction of FDI flows are vastly studied in international business. A favorable environment, providing adequate political and economic fundamentals, is known as the main requirement in this regard. Vidal & Correa (2007) studied the effect of Mexico's economic reforms and liberalization, as well as the sign of NAFTA in the 1990s on the foreign investment inflows. They state that the lift of foreign trade restrictions in Mexico was a revolution in the country's economy and led it towards export-led industrialization, in which, FDI had the central role. Providing an efficient environment for foreign investors has ended up with the possession of a substantial number of assets and enterprises by non-Mexican investors in order to acquire market share and empower manufacturing exports. In terms of political conflicts, Witte et al. (2017) demonstrate that wars and civil unrests have no significant effect on resource-seeking greenfield FDI while they are negatively associated with non-resource foreign investments. Rashid et al. (2017) found that among those Asian countries that are considered top performers, political stability is the predominant explanatory variable that determines the sustainability of long-run inflows of foreign investment to a host country. They conclude that to attract more FDI, the governments' priority should be the creation of a reliable image of the country in terms of a favorable political and economic environment for investment. Furthermore, Sabir et al. (2019) studied the impact of institutional quality on countries with different income levels and found that in developed countries, this factor has greater importance in attracting FDI inflows compared with developing countries. Several other pundits have also shown that

environmental uncertainty and quality of institutional factors are significantly determinant in a company's decision-making process of investment in a developing and emerging country since these have an outstanding impact on costs (in particular transaction costs) and degree of operational risks and uncertainties (Meyer, 2001; Child et al., 2004; Uhlenbruck, 2004).

Regarding political instability and institutional quality and their economic impacts in developing regions, most studies have been inclined to cover the Middle-East and North Africa (MENA) region, Sub-Saharan Africa (SSA) or Latin-America. However, the current master thesis tries to bridge a knowledge gap by choosing a set of understudied and uncommon countries in the international business and economics literature and is focused on the Greater Middle East (GME), as shown in Figure 1 [see data section]. The term GME was proposed by the Bush Administration in 2004 under *the GME Initiative* which aimed at creating political and economical changes in this region and in the aftermath of the 11 September attacks. Bush administration contends that the principal characteristic of GME is a lack of democracy as well as increasing discontent (Stewart, 2005; Aljazeera, 2004). Furthermore, according to the Carnegie Endowment for International Peace (2004), the region owns the biggest proven oil reserves in the world. However, in terms of the development of economic, political, and industrial indicators, GME countries are still far behind developed regions (Amineh, 2007). Given the high intensity of natural reserves and the geostrategic importance of the GME, it may be expected that the region is the host to substantial investment flows. However, it is found that among developing countries, the Middle East (ME) region has attracted the least amount of FDI inflows compared to Latin America and East Asia (Onyeiwu, 2003). It is noteworthy that there is no clustered data on the GME like what exists for ME. Still, due to the close characteristics of these two regions, we may expect low FDI rates in GME as well. Additionally, this thesis studies the 2003-2018 period. This period is selected since GME has experienced several political upheavals during it.

Given the current dynamic of the global business environment, the investors and pundits can no more refuse to consider this region as an investment destination; thus, more studies are indispensable on this matter. The principal characteristics of the region, including low levels of institutional quality leading to political instability and intensity of natural resources reserves, require further investigations in order to understand investors' behavior in GME, and derive implications for both foreign firms and policy-makers in host countries. Previous studies found contradictory results about the role that institutional quality plays in attracting FDI flows. For instance, Buckley et al (2007) showed that when it comes to the investments of Chinese MNEs in SSA, the Chinese prefer destinations with lower levels of institutional quality and more

political instability. They argue that it could be due to the state-owned nature of Chinese MNEs whose only goal is not to maximize profit but also to strengthen political relations and form alliances with developing and under-developed countries. On the other hand, industrialized countries with stronger private sectors, that aim at maximizing their profit, could be more inclined to invest in countries with minimum stability in the political, institutional, and economic environment. To this end and given the low levels of institutional quality in GME, the first research question of the current master thesis is formulated as follows:

*"What is the relationship between institutional quality and greenfield FDI inflows in the GME region?"*

Considering the characteristics of GME, the main drivers of FDI in this region are assumed to be an abundance of natural resources. The relationship between institutional quality and FDI may become weaker when there are more available natural resources, meaning that MNEs might accept potential costs that emerge when investing in countries with low levels of institutional quality and a more unstable political environment in order to have access (and in certain cases exclusive right of extraction) to natural resources in a country. Therefore, this thesis will answer the following sub-research question. The question is prominent and challenging since a reverse causality problem emerges, and an interaction effect should be considered.

*"Do resource-seeking motives lower the effect of political instability and inefficient institutional levels on greenfield FDI in the GME region?"*

In this thesis, data on greenfield investments, institutional quality and political instability, regime type, and natural resources stocks are gathered through different sources and merged. A count data model, more specifically, a negative binomial model, is applied to test three hypotheses [see section 3] and conclude the research. It is expected that the research leads to implications regarding the decline of transaction costs through improvement of institutional quality and political stability in GME by analysing investment determinants and investor behavior in this region.

The remainder of the document is as follows. The background section presents the fundamental notions about FDI and revises the literature. Section 3 develops research hypotheses. Section 4 presents data and variables. Methodology, econometric framework, and

the model are elaborated in section 5. Section 6 presents multiple regression results, regression tables, and robustness check. It also addresses the endogeneity. Limitations are discussed in section 7 and finally, the research is concluded in section 8.

## 2. Background

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### 2.1. What do we talk about when we talk about FDI?

The International Money Fund (2003) defines FDI as the goal of the direct investor, who is living in one country, to gain enduring interests through an enterprise in another country. In the same way, United Nations Conference on Trade and Development (UNCTAD, 2019) puts stress on the long-term aspect of the FDI and defines it as a type of investment that requires long-term relationships, lasting benefits, and control by a foreign investor resident in an enterprise resident in a recipient country. Dunning (1993) states that FDI is beyond the transfer of finance and incorporates a bundle of resources. FDI lets MNEs stay in management positions and control assets in the host country (Moosa, 2002; Jones, 2005). By definition, “FDI is a part of each country's balance of payment, a statistical statement that summarizes the economic transactions of an economy with the rest of the world for a specific period” (Duce et al., 2003).

Entry modes of FDI flow to a foreign country are grouped into two categories: cross-border mergers and acquisitions (M&A) and greenfield investments. The former refers to the combination of certain companies to use shared resources as well as the acquisition or transfer of ownership of assets and liabilities that already exist in a company in the host country. The latter refers to building a new subsidiary in the recipient economy from scratch (Davies et al., 2018; OECD, 2009). The current research does not involve M&A. It merely considers the creation of new ventures under greenfield investment since this type of FDI is the most efficient, productive, development-friendly, and relational form of foreign investment, letting the corporate apply its managerial procedures from the beginning. Through spillovers, it creates jobs and transfers technology to receiving countries. It gives the investor complete control and ownership over operations compared to the joint venture. It also encourages the investors to commit to hosting countries in the long run. Additionally, studies show that in contrast to M&A, greenfield investment contributes to economic growth in presence of a minimum of human capital. Greenfield FDI requires a definite location decision contrary to the M&A that is restricted by the existing assets which are previously decided about their location. Finally, compared to stock shares and currencies, it is more resilient to political and economic volatilities (Hennart and

Park, 1993; Hennart and Reddy, 1997; Ianchovichina et al., 2013; Owen, 2019; fDi Markets, 2019).

There is also another grouping of FDI which differentiates horizontal from vertical production structures in FDI. Horizontal FDI seeks markets and consists of producing the product in diverse countries, while, vertical FDI seeks to improve efficiency through dispersing different production stages in different countries (Aizenman and Marion, 2004; Beugelsdijk et al., 2008).

## 2.2. Why is FDI important?

Besides strategic and political benefits, FDI has numerous advantages on macroeconomic and microeconomic levels. FDI can grow the economies of both origin and receiving countries, and stimulate the economy. It promotes economic growth through the improvement of productivity, managerial competencies, and the job market. Capital flows can transfer technology and create access to overseas markets (Vernon, 1966; Caves, 1996; William, 2017). Moreover, it affects the development of involved countries through capital formation, market access, fiscal revenues, and political and social modifications (Te Velde, 2006). De Malo (1997) states that FDI contributes to the economic growth of developing countries by improvement of managerial and labor skills, organizational practices, knowledge, and technological spillover, as well as upgrading production procedures. Additionally, FDI triggers economic progress through human capital formation, improvement of the competitive business environment, and tax revenues (OECD, 2002; Anyanwu, 2012). Based on the declaration of the New Partnership for Africa's Development, due to the lack of income and savings in under-developed countries in Africa, additional finance is required to eliminate poverty. In the absence of access to international capital markets, FDI would be the only resource to provide the requisite finance in this under-developed region (Funke and Nsouli, 2003). On the other hand, King and Levine (1994) argue that investment and capital accumulation are not components of economic development and growth but a result of that. They found that despite the high correlation between capital accumulation and economic growth, there is no reliable evidence for the causality meaning that higher investment rates do not necessarily lead to more growth. Still, certain studies are showing that FDI contributes to economic growth and requires certain levels of development in the financial system, in absence of which, the capital inflows can not be absorbed in the economy (Edison et al., 2002). Ianchovichina et al. (2013) also claim that to improve economic growth, exports, and job creation through FDI, there should be high-quality investments in tradable, manufacturing, and services.



### 2.3. What are mainstream theories of international activities and FDI motives?

Among various theories explaining the international activities of firms, the internalization theory, and the eclectic paradigm, respectively developed by Buckley and Dunning, form the mainstream theories (Rugman, 2010). Buckley and Casson (1976) developed the internalization theory which is a firm-level theory. Using transaction costs explains why a firm chooses a specific type of entry mode and applies for exclusive ownership over a firm-specific advantage (such as managerial competencies and brand reputation), and knowledge-specific advantage.

John H. Dunning (1980) presents an analytical framework, called the eclectic paradigm, which assesses whether the FDI is a plausible strategy for entering a foreign market. This framework, unlike the internalization theory, is defined at the industry level. He argues that the overseas activities and venturing strategy of MNEs are determined by three advantages; Ownership, Location, and Internalisation (also called OLI framework). Ownership is the competitive advantage of a company in a foreign economy that is acquired through owning one or several resources. Resources could be human and non-human capital, natural stocks, also intangible assets such as the institutional climate. These competitive advantages help the company to overcome existing liabilities of foreignness (such as political, economic, and cultural distance, language barrier, and geographic distance) in the foreign market. Location refers to better access to raw materials, governance system and institutional structure, transport infrastructures, tax cuts, and cheaper labor thanks to the geography in which the host market is located. Internalization is creating an advantage by outsourcing certain parts of the value chain. In absence of each of the aforementioned advantages, the company should consider another type of market entrance (i.e. exports and licensing) in lieu of FDI (Zaheer 1995). However, the configuration of these elements is contextual and depends on the political and economic characteristics of the host country, industry, as well as firms' activity, strategy, and objectives (Dunning, 2000).

Mainstream theories identify four principal categories of FDI motivations according to MNE's type of activity. It should be pointed out that this grouping of FDI motives is mainly designed based on the experience of MNEs in developed countries. Dunning (1998, 2000) states that these motives affect the MNE's decision-making about the investment's location choice. Natural resource-seeking or supply-seeking motives encourage firms to secure the supply of raw materials and decrease costs through access to high-quality and cheaper resources. Chinese investments in Africa are mainly due to resource exploitation. Access to a cheaper labor force also fits in this category. Investments in countries with higher labor costs in developing countries such as Morocco, Vietnam, Mexico, and Taiwan is particularly with this

goal. Asiedu (2006) states that the main limitation of FDI with resource-seeking motives is that this type of FDI does not engender positive spillovers associated with FDI notably in the transfer of technology and creation of jobs.

The second category of motives is demand or market-seeking motives aiming at the gain of new markets or sustaining old markets. Reasons for market-seeking FDI could be following those customers who develop their manufacturing facilities overseas, or, adapting products to local criteria and making them acceptable in the target market. Furthermore, it could be because of the decline of transaction and transport costs or more importantly, being directly present in the destination market by manufacturing, marketing, or R&D units, in order to strengthen the company's market position compared to competitors.

The third motive consists of efficiency-seeking reasons which aim at the improvement of the production process, economies of scale, risk diversification, and decrease of production costs through competitive advantages. If an MNE is an efficiency seeker, it tries to make use of different locations' properties in terms of geographical and economic specifications, and market structures. Efficiency-seeking FDI requires developed markets in both origin and host countries.

The last motive is strategic asset-seeking which looks for an increase of ownership advantages in order to foster MNE's strategic goals, in particular competitiveness. This motive is also known as a subset of resource-seeking motives. A strategy asset seeker MNE aims to strengthen its position in the global market by promoting its portfolio (in terms of all types of assets including human capital and physical asset) in a foreign market.

Dunning (2000) contends that on the one hand, the rise of emerging markets, such as China and Brazil, has increased the tendency for market-seeking reasons for FDI, and on the other hand, resource-seeking FDIs have become less interesting due to the decrease of resource dependency of industries due to innovation (i.e. recycling). MNEs are also more inclined to efficiency-seeking FDI as a consequence of transport improvement and ease of international trade.

#### 2.4. FDI, Institutional Quality and Political Instability

Previous literature suggests quite contradictory findings on the impact of institutional quality and political instability on FDI. As stated by Demirbag et al. (2008), the environmental uncertainty of a location is shown by how threatening different legal, political, economic, and even cultural aspects are to the stability and resilience of a business. Furthermore, according to Ianchovichina et al. (2013), political instability is defined under the following aspects; being prone to regime change, political violence and disorder, and low quality of institutions including

control of corruption, protection of property rights, and civil/political rights. They found that investors react differently confronting different aspects of political instability. More specifically, they show that democratic accountability, corruption, and religious unrest do not affect FDI flows, and in contrast, government fragility, bureaucratic quality, and instability in the business climate negatively affect the FDI in MENA. Burger et al. (2015) show that the association between adverse shocks and FDI is negative; however, the effect varies across sectors in MENA. Busse & Hefeker (2007) have also studied the effect of political risks (any political instability caused by unexpected modifications of political institutions and “rules of the game” by the government of the host country) on FDI over 83 developing countries between 1985-2003. Their results suggest a strong association between these two. Considering continuous changes in the political dynamics of the region and countries around it, further studies covering more recent periods (from 2003 onwards) are required. On the contrary, certain studies show that there is no significant causal relationship between instability in terms of political features and the flow of investments to a country (Noorbakhsh et al., 2001; Blonigen & Piger, 2011). Buckley et al. (2007) indicate that destinations with poor institutional levels, notably in terms of corruption and level of democracy, attract even more Chinese MNEs. Kolstad and Wiig (2012) also state that destinations with large markets, poor institutional quality, and rich national resources are the favourite destinations of Chinese investors.

It is worth noting that in this thesis, the level of political stability, governance effectiveness, and level of institutional quality measures are strongly related issues since institutional dysfunctions and non-effective governance lead to political instability. The World Bank defines governance as a manner and a group of institutions that authority applies in a country to shape the public policy and manage political, social, and economic resources for the development of that country. It comprehends three aspects; the process of government election, the government's ability to adopt appropriate policies, and consideration of the institution by the State and citizens (World Bank, 2022). Gates et al. (2006) indicate that the higher the level of institutional consistency of polities, the more a political system will endure, and on the other hand unstable political environment is caused by a lack of institutional consistency in polities and governance. In this thesis, political stability [indicated as PSAV: Political stability and absence of violence/terrorism] is incorporated in the multiple regression as a component of institutional quality variable [see sub-section 4.2 on variables].

## 2.5. Why the Greater Middle East is worth studying?

Known for its rich natural resources and relatively low quality of institutional levels, GME addresses 33 countries, including countries in North Africa, Arab middle-eastern countries, non-Arab middle eastern-countries, countries in central Eurasia, and South Asian countries bordering China, India, Russian Federation, and the European Union. GME links Europe to rich (in terms of population and resources) areas around the Caspian Sea, Indian Ocean, and the Asia Pacific, and provides a geographic zone with common economic and political interests for Asian and European players (Amineh, 2007). Furthermore, China's Road and Belt Initiative (formerly called One Belt and One Road Initiative), which aims at connecting Asia to Europe and promoting economic development in countries in certain areas of Africa, Asia, and Europe, gives substantial importance to this region since most of GME's countries are included in this initiative's geographical coverage (Arab Centre Washington DC, 2021; Huang, 2016).

Besides political turbulences and social unrests, the majority of countries in GME suffer from low economic growth, poor infrastructure, and underinvestment in resource-related infrastructures. Ianchovichina et al. (2013) state that ME has also more or less the same characteristics. They find that such features do not let the high intensity of natural resources, which is one of the competitive advantages of ME countries, attract more foreign investment flows. To the best knowledge of the author of the current thesis, unlike other regions (such as the Arab world, ME, and MENA) there is no report about overall greenfield investments in GME and the current thesis tries to fill the gap.

## 3. Hypotheses Development

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### 3.1. Hypothesis 1

As it is stated by Buckley et al. (2007), the internalization theory suggests that political instability and low quality of institutional factors of a country are negatively associated with the flow of FDI towards it. Duade & Stein (2007) studies a sample of developing countries and found that better institutional quality improves FDI. Asiedu (2006) found that corruption (an indication of institutional quality) and political instability demote the FDI in SSA. Considering that all GME countries are developing and under-developed countries and they have close characteristics to those of SSA countries (such as rich natural resources and poor political stability and institutional quality), it is expected that the same results are obtained in GME as well. The fact that the level of institutional quality is low and there are sizeable unrests in GME, makes it a relevant region to further study this determinant factor of FDI. Thus, the first hypothesis is formed as follows:

*Hypothesis 1: In GME, greenfield FDI inflows are positively correlated with political stability and institutional levels.*

### 3.2. Hypothesis 2

Although the majority of located countries in the GME are dominated by autocratic regimes, there are countries with relatively more democratic governance, such as Turkey and Georgia. It is therefore interesting to study the role of regime type in attracting FDI. Democracy comprehends three following elements; institutions and procedures which provide citizens required environment to express their ideas about leaders and policies, "institutionalized constraints on the exercise of power by the executive", and "guarantee of civil liberties to all citizens in their daily lives and acts of political participation". On the other hand, autocracy lies in the lack of regularized competition in the political environment and lack (or non-transparency) of freedom in political decisions. More globally, an autocratic regime "restricts and suppresses the political participation." autocracy is not limited to politics; it also conducts and reigns over social and economic activities. The extant literature demonstrates that several countries, including the US, are more inclined to forward their capital toward more democratic countries, and generally, countries with better democratic levels attract higher amounts of FDI (Rodrik, 1996; Harms and Ursprung, 2002; Busse, 2003). On the contrary, Yang (2007) found no evidence showing that democratic regimes are more attractive destinations for MNEs. There are also scholars whose studies suggest that autocratic countries even attract more FDI flows since there are more market barriers in such countries and MNEs have fewer competitors there. They also can protect better the property rights of foreign investors in the long run and additionally, tax and wage regimes are less strict in these countries compared with democratic countries (O'donnelle, 1978; Olson, 2002). However, previous studies do not include the set of studied countries in the current thesis. Thus, the following hypothesis is formed to see the relationship between regime type and greenfield FDI in GME:

*hypothesis 2: In GME, an autocratic regime compared to a democratic regime is negatively related to greenfield FDI inflows.*

### 3.3. Hypothesis 3 (a, b)

Furthermore, given the importance of the role of natural resources in the economy and geopolitics of the region, a third hypothesis will be tested. As aforementioned, based on the eclectic framework of Dunning, resource-seeking FDI is one of the principal reasons for MNEs to invest in a foreign market. Several studies show that the abundance of natural resources impacts the flows of FDI (Campos & Kinoshita, 2003; Garibaldi et al., 2001). When it comes to investment in less stable regions in terms of political and institutional levels, Chen et al. (2018) show that Chinese companies are more interested in capital-intensive industries. Other studies also find that in the case of Chinese MNEs who invest in deprived regions and developing countries, resource-seeking reasons, besides access to the large markets of the host countries exceed other motives. It could be explained by the dependence of the emerging Chinese economy on raw materials to boost its growing market (Frynas & Paulo, 2006.; Cheung & Qian, 2009; Lum et al., 2009). Additionally, the results of the study by Kolstad & Wiig (2012) indicate that Chinese outward FDI towards non-OECD countries is determined by natural resources and the level of institutions. Poelhekke and van der Ploeg (2013) state that the natural resource bonanza fuels resource FDI while it dissuades non-resource FDI.

Less developed regions, suffering from poor infrastructure, and inefficient financial and economic systems, are considered to be attractive to foreign investors due to their stocks of natural resources, meaning that resource-seeking motive is assumed to be the primary motive for investment in such areas. For instance, Chinese investors prefer those African destinations with rich natural stocks and poor governance (Buckley et al., 2007). However, as Rogmans and Ebbers (2013) state in one of their papers, countries with rich natural resources are prone to Dutch disease. Excessive extraction of natural stocks could lead to an increase in currency value and a weakening of the manufacturing sector. Eventually, it will render the investment in that country more expensive for the foreign MNE, and in the long-term, will decline the FDI inflows. In this thesis, the following hypothesis is tested to see whether the resource-seeking motives are a determinant factor in MNE's location choice for greenfield FDI in GME:

*Hypothesis 3. a: In GME, greenfield FDI inflows are positively associated with level of natural resources.*

Most of the previous studies on FDI determinants assess the interaction effect of natural resources and institutions on economic growth (e.g., Collier and Hoeffler, 2009). Besides the role that natural resources play in attracting greenfield FDI, the current thesis also contributes to the

literature by examining the interaction effect of natural resources and institutions' quality on greenfield FDI. It is expected that the MNEs in GME, who accept the potential risks and additional transaction costs that investment in an underdeveloped country with poor infrastructure and institutional quality, and political unrest could impose, are mainly seeking access (and in certain cases, exclusive access) to natural resources. It means that access to high-quality and cheap resources outweighs the costs of political instability. To find the accuracy of this statement, the next hypothesis is formed as follows:

*Hypothesis 3. b: In GME, level of natural resources lowers the positive association between institutional levels (and political stability) and greenfield FDI.*

## 4. Data

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### 4.1. Specification of dataset

The dataset used in this master thesis is built by merging several data sources providing information on greenfield FDI in GME, institutional quality, regime type, natural resources stocks, and economic indicators.

Table 1 indicates the sources of the variables used, which will be discussed in the methodology section and subsection 4.2. As indicated in figure 1, the GME consists of the following

countries: Bahrain, Cyprus, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Palestine, Qatar, Saudi Arabia, the Syrian Arab Republic, Turkey, the United Arab Emirates, Yemen, Afghanistan, Comoros, Djibouti, Maghreb (consisted of Algeria, Tunisia, Libya, Mauritania, Morocco), Pakistan, Sudan, Somalia, Armenia, Azerbaijan, Georgia, Kazakhstan, Turkmenistan, Uzbekistan, Kyrgyzstan, and Tajikistan.



**Figure1.** Map of the Greater Middle East  
Source: Wikipedia

Due to the lack of data on Palestine, Comoros, and Djibouti, these three countries are excluded from the study. Thus, the thesis covers 33 countries.

Additionally, the thesis will consider a 15-year period, from 2003 to 2018, a relatively large timeframe that enhances results' accuracy and features a substantial number of observations. This specific period is chosen since numerous countries in this region went through several economic uncertainties, political instabilities, and turbulences during it, making it a relevant time to see how it has affected the FDI. The Iraq war has been started in 2003 and lasted 12 years. The most recent unrest in Yemen has been started in 2014. In Syria, the civil war has been started in 2014 as a part of the Arab Spring unrest. In this period, Iran has experienced several years of the presence of economic and financial sanctions and a short period of sanctions removals. Turkey's coup d'état attempt has occurred in 2016 and since then, the country is experiencing social unrest. Afghanistan war has been also started in 2001. The Somalian civil war has begun in 1991 and is still ongoing. Lebanon war (also called the July war) has been taken place in 2006. Sudanese civil war has been started in 1983 and ended in 2005. Israeli-Palestinian is also an ongoing conflict that has been kicked off in the mid-20<sup>th</sup>.

**Table 1. Data sources**

<b>Variable</b>	<b>Type of variable</b>	<b>Source</b>
Greenfield investments	Dependant	<a href="#">fDi Markets, Financial Times</a>
Worldwide governance indicators	Explanatory	<a href="#">World Bank</a>
State Fragility Index (SFI)	Explanatory	<a href="#">Center for the Systemic Peace</a>
Polity2 (autocratic or democratic regime)	Explanatory	<a href="#">Center for the Systemic Peace</a>
Total natural resources rents	Explanatory	<a href="#">World Bank</a>
Fuel exports	Control (robustness check)	<a href="#">World Bank</a>
Ores and minerals export	Control (robustness check)	<a href="#">World Bank</a>
Openness to trade	Control	<a href="#">World Bank</a>
GDP per capita	Control	<a href="#">World Bank</a>
Inflation	Control	<a href="#">World Bank</a>
Internet users	Control (robustness check)	<a href="#">World Bank</a>
Investment freedom	Control (robustness check)	<a href="#">Heritage Foundation</a>



## 4.2. Variables

### 4.2.1. Dependent Variable

In the current study, the dependent variable is the number of greenfield investment projects in the GME region from 2003 to 2018 and takes integer values. Data on greenfield FDI is provided through the fDi Markets database by Financial Times, the most comprehensive database on annual cross-border greenfield investments covering all countries. fDi Markets collects real-time data on the projects from the ground up (or new physical projects) as well as the development of existing facilities, declared by the company or gathered through media and internal information (fDi Markets, 2022).

### 4.2.2. Explanatory Variables

Explanatory variables are grouped into three categories and each category tests one of the hypotheses.

#### 4.2.2.1. Institutional Quality Variable

As there is not one sole indicator of institutional quality, in this thesis a composite measure will be created to reflect the institutional quality of the country. A factor analysis will be conducted to create this measure. Here, the studied indicators that will be taken into account in this factor analysis are presented. In section 4.6, the results of the factor analysis are discussed, and it will be explained which indicators are taken into account to test Hypotheses 1 and 3.b.

In revised literature, the International Country Risk Guide, containing 12 risk indicators provided by Political Risk Services Group (PRS), is primarily used to assess institutional quality. In the current study, these indicators are not used but two other sets of open-source indicators are applied. The first set of indicators is the Worldwide Governance Indicators (WGI) provided by the World Bank and based on its definition of governance: "traditions and institutions by which authority in a country is exercised including the process by which governments are selected, monitored and replaced; the capacity of the government to effectively formulate and implement sound policies; and the respect of citizens and the state for the institutions that govern economic and social interactions among them". Compared to other similar indicators (such as the PRS dataset), WGI has the advantage of covering more countries. It measures the six following indicators in over 200 countries.

**Voice and accountability (VA)**, is an indicator that measures to which extent citizens of a country can participate in the selection of their government. It also captures the freedom of association, expression, and media. The indicator is constructed using numerous variables such as the democracy index, human rights, freedom of election, the election process, freedom of

net, clean elections, confidence in parliament, and democratic accountability. It is a continuous variable and ranges between -2.5 and 2.5, with higher values indicating better outcomes (World Bank, 2022).

**Political stability and absence of violence/terrorism (PSAV)**, an indicator that measures the probability of political instability and any form of violence induced by political issues (for instance, terrorism). It is constructed by various variables such as armed conflict, government stability, international tensions, protests and riots, social unrest, violent demonstrations, and civil war. It is a continuous variable and ranges between -2.5 and 2.5, with higher values indicating more stability and less violence (World Bank, 2022).

**Government effectiveness (GE)** is a measurement of four aspects of government effectiveness; 1) quality of public and civil services, 2) dependence of public and civil services from political pressures, 3) quality of formulation and implementation of the policy, 4) how credible is the commitment of the government to implemented policies. The indicator accounts for numerous variables such as quality of bureaucracy, institutional effectiveness, quality of road infrastructure, quality of primary education, satisfaction with the public transport system, bureaucratic quality, the efficiency of revenue mobilization, quality of public administration, and trust in government and civil service integrity. It is a continuous variable and ranges between -2.5 and 2.5, with higher values indicating more effective governance (World Bank, 2022).

**Regulatory quality (RQ)** is a measurement of how capable the government is of formulating and implementing appropriate policies that promote the private sector's development. It is constructed by a wide range of variables such as unfair competitive practices, price controls, excessive protections, discriminatory taxes, the burden of government regulation, investment and financial freedom, and the efficiency of competition regulation. It is a continuous variable and ranges between -2.5 and 2.5, with higher values indicating better outcomes (World Bank, 2022).

**The rule of law (RL)** is an indicator that measures the extent of agents' confidence in society's rules and how they abide by them. It indicates the "quality of contract enforcement, property rights, police, courts, probability of crime and violence." The indicator is constructed by several variables such as business cost of crime, judicial independence, property rights, intellectual property protection, confidence in the police force, and confidence in the judicial system. It is a continuous variable and ranges between -2.5 and 2.5, with higher values indicating better outcomes (World Bank, 2022).

**Control of Corruption (CC)** is an indicator capturing how "the public power is exercised for private gain", including minor and major corruptions and "capture of the state by elites and

private interests." It is constructed by numerous variables such as public trust of politicians, corruption index, level of petty corruption among administrations and citizens, level of corruption among administrations and local businesses, and level of corruption among administrations and foreign companies. The indicator is a continuous variable and ranges between -2.5 and 2.5, with higher values indicating less corruption (World Bank, 2022).

The second set of indicators is the dataset of the Integrated Network for Societal Conflict Research (INSCR) provided by the Center for the Systemic Peace. It contains several variables among which the **State Fragility Index (SFI)** is relevant to hypothesis one of the current study. The index indicates a country's effectiveness and legitimacy in the following performance dimensions: security, political, economic, and social. Based on the definition of INSCR, a state's fragility is related to its "capacity to manage conflicts, make and implement public policy and deliver essential services, and its systemic resilience in maintaining system coherence, cohesion, and quality of life, responding effectively to challenges and crises, and sustaining progressive development." A state's effectiveness includes security, political, and social effectiveness. The legitimacy side also covers these four dimensions. As a continuous variable, the index ranges from 0 to 25, with higher values indicating more fragility and worse outcomes. It will be demonstrated in the next sections whether this variable can be applied besides the WGI variables to capture institutional quality.

As aforementioned, these seven indicators all relate to the institutional quality and consequently the political instability in a country. To test hypothesis one, correlation matrix and factor analysis lead to picking a unique explanatory variable to apply in the multiple regression. It will be elaborated on in the methodology section.

#### 4.2.2.2. Regime Type (democracy vs. autocracy) Variable

The regime type of the country will be assessed using the **Polity 2** variable, which consists of indicators of democracy and autocracy. Polity2 is also provided by the INSCR dataset from the Center for Systemic Peace. This variable indicates whether a state is more inclined toward democracy or autocracy. The indicator ranges from -10 (meaning full autocracy) to +10 (meaning full democracy). It is a continuous variable. To see whether hypothesis 2 is supported or not, Polity2 is used as the explanatory variable in the multiple regression.

#### 4.2.2.3. Natural Resources Variable

To test hypotheses 3a and 3b, the research investigates the following variable as an indicator for natural resources' stock in a country.

**Total natural resources rent** is a continuous variable that does not show the total stocks of natural resources in a country but the fraction of revenue gained by that source as a share of

total GDP. This variable is applied in the regression both individually and as a component of an interaction term to test hypothesis 3. The interaction term is elaborated in section 4.3.2.1.

The **export of ores and minerals** is a continuous variable that indicates the share of ores and minerals in the overall merchandise exports. It was used by Buckely et al. (2007) as a measurement of a country's natural resources richness. It includes three categories of ores and minerals; crude fertilizer, minerals nes / metalliferous ores, and scrap / non-ferrous metals. This variable is used in robustness tests in section 5.

Regarding large reserves of oil and gas in the GME, **fuel exports**, which is also a continuous variable, is added as a proxy to measure the intensity of natural resources in countries. It indicates the share of fuels in overall merchandise exports of a nation and includes mineral fuels, lubricants, and related materials. This variable is used in robustness tests in section 5.

#### 4.2.3 Moderation effects

In multiple regression, the explanatory variables might interact with each other, and the impact of an explanatory variable on the dependent variable could be influenced by other explanatory or control variables (Wooldridge, 2015). When the interaction term is added to the model, the coefficients of those variables which produce the interaction term do not represent the main effects anymore. The interaction term between natural resources (measured by the share of natural resources in GDP) and institutional levels should be included in the study to test hypothesis 3. b and assess the expected relationship between these two. In order to study the interaction effect between natural resources and institutional levels an interaction term is defined which will be presented in the upcoming sections.

#### 4.2.4. Control variables

In order to isolate the causal effect of certain variables, the study controls for a handful of variables that, besides explanatory variables, impact greenfield FDI inflows and institutional quality. Control variables are as follows.

**Openness to trade** is a continuous variable that is measured by the share of trade in a country's GDP. Asiedu (2000) argues that MNEs prefer open economies with fewer trade obstacles which can decline transaction costs for certain types of FDI (such as export-oriented FDI). By contrast, MNEs would somewhat restrict economies for market-seeking FDIs since firms are more prone to implement a subsidiary in the targeted country when serving a local market. However, studies show that the effect of trade liberalization on FDI varies among different regions of the world.

**GDP per capita** is the second control variable. One of the determinant factors in FDI is the market size of the destination country, particularly in an FDI with market-seeking motives. Economies of scale could be easier and more quickly realized in a larger market size. Larger markets can also provide a more significant spillover effect. Studies show that larger markets attract more inward FDI (Zhang, 2000; Wei and Liu, 2001; OECD, 2000). In addition, GDP per capita indicates the level of economic development and availability of different types of capital. A minimum income is required to facilitate the inflows of FDI to a country (Asiedu and Lien, 2004). It is a continuous variable and is applied in the regression under the logarithmic form.

Besides the above-mentioned controls, another variable that controls the host country's macroeconomic policies is required. As suggested by many economists such as Busse and Hefeker (2005), the **inflation rate** is used as a proxy for the monetary policies of a country. Higher inflation rates can translate into economic disorder and a poor fiscal system. MNEs prefer destinations with more stable macroeconomic environments, adequate (and appropriate) monetary policies, and agile policy management facing a crisis. Inflation is a continuous variable.

## 5. Methodology

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### 5.1. Model

To test the hypotheses above, the following general model is used. The equation is principally inspired by the paper of Buregr et al. (2015).

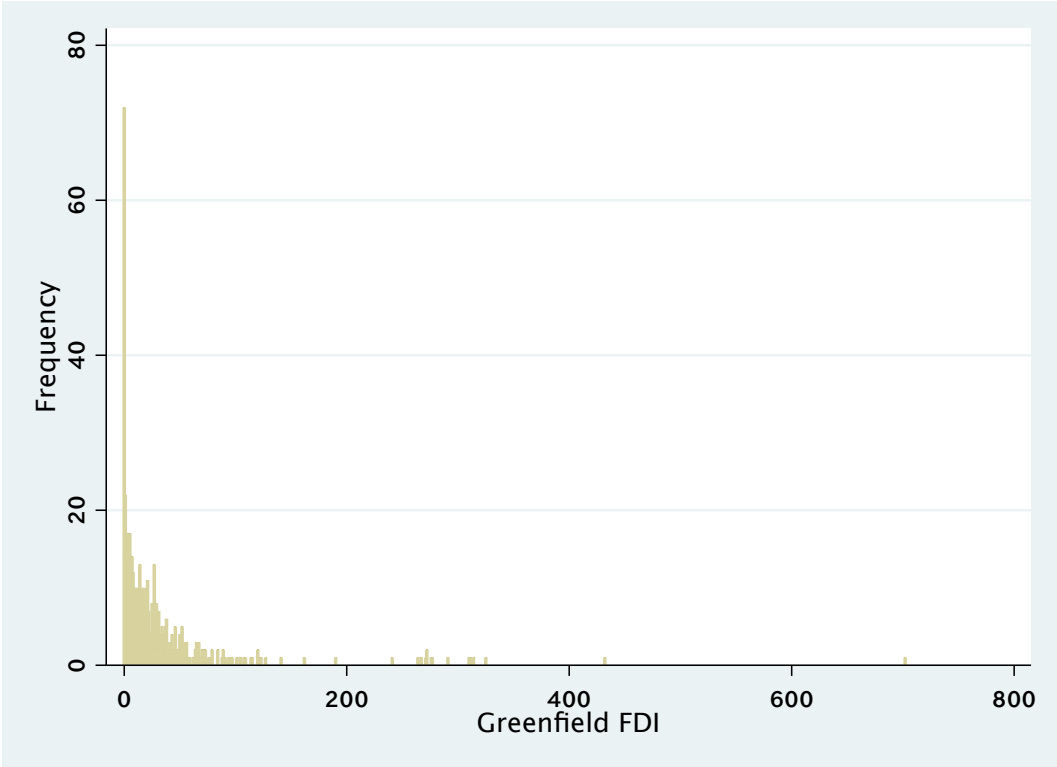
$$F_{ist} = \beta_0 + \beta_1 P_{it} + \beta_2 D_{it} + \beta_3 NR_{it} + \beta_4 X_{it} + \epsilon_{ist}$$

Where,  $F_{ist}$  is greenfield inflow to country  $i$  in sector  $s$  and in time  $t$ , and  $P_{it}$  is the index for institutional quality in country  $i$  at the time (year)  $t$ .  $\beta_2 D_{it}$  is the index for regime type (democracy or autocracy) in country  $i$  at time  $t$ .  $NR_{it}$  manages the natural resources in country  $i$  and in time  $t$ .  $X_{it}$  represents macroeconomic elements (represented as control variables) in country  $i$  and in time  $t$ .

### 5.2. Estimation Technique

In the current study, the dependant variable is a count variable that is discrete consisting of integer, non-negative numbers starting at zero and is unbounded. To estimate the total count of greenfield investments, the OLS model is not an optimal model choice since OLS assumes that

the dependent variable is a continuous variable that can take any value. Additionally, OLS assumes that residuals follow a normal distribution, while, in the current case, this assumption does not hold. In the count data model, the dependant variable could follow different distributions. The count data model has several advantages. For instance, it allows the model to include zero investment projects in a country. As indicated in Figure 2, there are several regions with zero greenfield investments and there is a long tail showing that as the number of greenfield FDI increases, the frequency becomes lower and lower. However, there are still countries with a high number of greenfield FDI. Thus, a model is required which includes regions with no greenfield investments. This property could lead to further research aiming at looking for similar characteristics among countries with zero greenfield projects and find out why certain areas are less attractive to investors. Additionally, unlike the conditional logit model, there is no restriction on the independence of irrelevant alternatives (IIA) in a count data model. And finally, the count data model imposes a less computational burden on the statistical software.



**Figure 2.** Frequency (y-axis) of greenfield investment projects (x-axis)

Count data models model the expected value and the variance of the dependent variable (y), as well as the probability that the dependent variable takes values 0, 1, 2, etc. It does it as a function of the explanatory variables and explains the effects of the variables on the distribution of the dependent variable. Three models are considered for modeling the count data. The first

model is Poisson, estimated by maximum likelihood estimation. To model the count data, the first step is to see whether the Poisson distribution suits the model or not. The principal property of the Poisson model is the equality of the mean and the variance or the equidispersion property.

$$\text{Var}(y|x) = E(y|x) = \mu$$

The Poisson model specifies the expected value of  $y$  as the exponential of the linear combination of the explanatory variables:

$$E(y|x_1, x_2) = \mu = \exp(\beta_0 + \beta_1 x_1 + \beta_2 x_2)$$

This property makes the Poisson distribution a restrictive way of modeling count data since when the expected value (or mean) increases, the number of zero predicted by the model decreases. However, Figure 2 indicates that the number of countries with zero greenfield investment projects is quite significant.

Poisson distribution tells that the probability that  $y$  equals certain values is defined as follows:

$$P(y) = \frac{\exp(-\mu)\mu^y}{y!}$$

To tackle the overdispersion property, the Poisson model with robust standard errors (PML) is recommended, estimated by pseudo maximum likelihood. Unlike the Poisson model, PML tackles the inevitable consequences of the equidispersion and relaxes this property.

The third model is the negative binomial model, estimated by maximum likelihood. The Negative Binomial model does not impose the equidispersion property, and the variance can be higher or lower than the mean. In the current study, the variance is bigger than the expected value, indicating overdispersion. In this model, the probability of  $y$  equals specific values as follows:

$$P(y) = \frac{\Gamma(\alpha^{-1} + y)}{\Gamma(\alpha^{-1})\Gamma(y + 1)} \left(\frac{\alpha^{-1}}{\alpha^{-1} + \mu}\right)^{\alpha^{-1}} \left(\frac{\mu}{\mu + \alpha^{-1}}\right)^y$$

In the Negative binomial model, the mean and the variance (which is a function of  $\mu$  and  $\alpha$ ) are as follows:

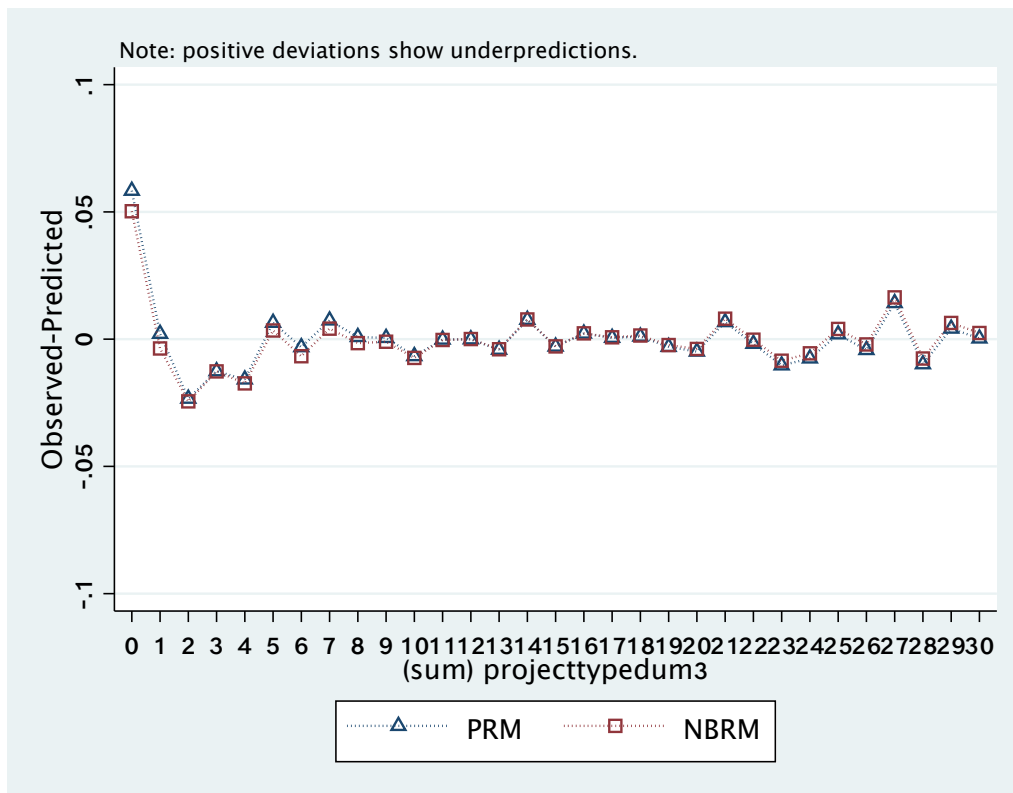
$$E(y) = \mu$$

$$\text{Var}(y) = \mu(1 + \mu\alpha^2)$$

Overdispersion happens when  $\alpha$  is more significant than 0, in the Poisson model,  $\alpha$  equals zero; thus, variance equals the expected value. Like the Poisson model, the Negative binomial model specifies the expected value of  $y$  as the exponential of the linear combination of the explanatory variables:

$$E(y|x_1, x_2) = \mu = \exp(\beta_0 + \beta_1 x_1 + \beta_2 x_2)$$

Descriptive statistics of the dependent variable indicate that the mean is almost 32. The variance is roughly 3648, way bigger than the mean. This is proof of overdispersion. Thus Poisson seems too restrictive and an estimation technique should be applied that is robust to the overdispersion. Either Poisson with robust standard errors or Negative binomial can relax the equidispersion assumption. To choose between these two techniques, measures for the goodness of fit are applied. Both estimation techniques have very close Log Likelihoods (significantly bigger than the Log Likelihood of the Poisson model), confirming that they both could fit data better than Poisson. Poisson with robust standard errors and Negative binomial both result in very close predicted average probabilities. The actual probability is 0.680. The average predicted probabilities by Poisson with clustered errors is 0.676 and the average predicted probabilities by the Negative binomial model is 0.685. Additionally, according to Figure 3 and considering over and under predictions, there is no significant difference between these two models. Thus, Poisson with clustered standard errors is picked as the estimation technique for this master thesis.



**Figure 3.** Predicted average probabilities by Poisson with robust standard errors (in blue) and Negative binomial (in red) models



### 5.3. Descriptive Statistics

Descriptive statistics of the included variables in the study are demonstrated in Table 1. There are 512 observations in the dataset. The number of observations for different variables varies between 396 and 512. The lowest number of observations belongs to “export of fuel” which will be used later in robustness tests. However, none of the main explanatory variables has a significantly low number of observations and does not decrease the overall number of observations included in the model. Therefore, none of the variables will be removed due to the low number of observations. Greenfield project observations stand at 512, and their amount varies from 0 to 702 in different countries. The mean of this variable is roughly 32, meaning that on average, there are 32 greenfield investments per country in the sample. Polity 2 indicator ranges between -10 and 9, on average the Polity2 is about -2.5, showing that autocratic regimes slightly dominate the studied countries in the dataset. SFI changes between 2 and 25, and its mean is about 11 showing that despite the general instability in the region, a substantial number of countries in the GME have non-fragile states. Descriptive statistics of VA indicator reveals that the lowest level of voice and accountability is -2.26, and the highest level is 0.79. the average level observed in the dataset is -1, showing general low levels of VA in GME. The lowest level of PSAV is -2.5, and its highest level is 1.22, with an average level of -0.84, confirming relatively low political stability and absence of violence. Indicator GE varies between -2.45 and 1.51 among GME countries, and the average level is -0.43 showing also relatively low levels of government efficacy in the region. The lowest level of RQ is -2.5 and the highest level is 1.32 in the GME, and the average level is 0.5 indicating relatively low levels of regulatory quality. The average level of the RL is -0.6 and its lowest level is -2.5 while the highest level stands at 1.16 in the region. In the case of CC, the lowest level is -1.87 and the best score is 1.57, the average level is -0.6 showing relatively low levels of control of corruption in the GME. The share of natural resource rents in GDP varies between 0 and 68%, indicating the high dependence of certain countries in the sample on natural resources. As aforementioned, trade, In GDP, and inflation rate are control variables. Descriptive statistics of the rest of those variables which are used in robustness checks (including internet users, fuel and minerals exports, and investment freedom) are presented in Table 1 in the appendix.

**Table 2. Descriptive statistics**

Variable	Meaning	Obs	Mean	Std. Dev.	Min	Max
Greenfield FDI	Number of greenfield investments	512	31.965	60.403	0	702
Polity2	Indicator of democracy and autocracy	484	-2.531	5.771	-10	9
SFI	State fragility index	505	10.867	5.431	2	25
VA	Voice and accountability	512	-1.047	.628	-2.26	.79
PSAV	Political stability and absence of violence/terrorism	512	-.843	1.017	-2.5	1.22
GE	Government effectiveness	512	-.435	.805	-2.45	1.51
RQ	Regulatory quality	512	-.491	.887	-2.5	1.32
RL	Rule of law	512	-.564	.817	-2.5	1.16
CC	Control of corruption	512	-.563	.776	-1.87	1.57
Total rent	Total natural resource rents (% of total GDP)	502	17.581	17.743	.001	68.051
Trade	Openness to trade	477	81.775	32.563	1.295	191.873
lnGDP	GDP per capita, log value	502	8.36	1.353	5.251	11.351
Inflation	Inflation rate (%)	434	6.707	7.589	-10.067	63.293

#### 5.4. Factor Analysis

As it is explained previously, the study includes seven different indicators evaluating institutional quality. Wooldridge (2015) recommends using statistics for individual coefficients, particularly the variance inflation factor (VIF), which conducts to a sole explanatory variable measuring the institutional levels (or political instability) to test hypotheses one and 3.b of the research. Thus, factor analysis is applied to create a composite measure assessing institutional quality. All seven variables related to institutional quality were included in the factor analysis. Eigenvalues and factor loadings are indicated in Table 3. Using “predict” command in Stata, a new unique variable, called WGI (stands for Worldwide Governance Indicator), is created which measures institutional levels and political stability in GME.

#### 5.5. Correlation Matrix

Table 4 shows the correlations between used variables in the current study. Correlations above 0.7 are considered high correlations. According to Table 4, there is no multicollinearity concern since there is no high correlations between dependent, explanatory and control variables except in one case. The correlation between natural resources rents and fuels exports is high. A high correlation between predictors in a multiple regression creates multicollinearity, increases standard errors of coefficients, and causes problems in result analysis since a stronger correlation between two variables of interest complicates the change of one variable without changing another variable. Overinflated standard errors make estimations less precise, affect the significance of specific variables and render them insignificant while they are significant (Daoud, 2017). Thus, to avoid inducing multicollinearity, the selected variables of interest should be uncorrelated with other variables.

**Table 3. Factor Analysis**

(obs=505)

Factor analysis/correlation	Number of obs =	505
Method: principal factors	Retained factors =	3
Rotation: (unrotated)	Number of params =	18

Factor	Eigenvalue	Difference	Proportion	Cumulative
Factor1	5.147	4.459	0.896	0.896
Factor2	0.689	0.597	0.120	1.016
Factor3	0.092	0.101	0.016	1.032
Factor4	-0.009	0.003	-0.002	1.030
Factor5	-0.013	0.018	-0.002	1.028
Factor6	-0.031	0.101	-0.005	1.023
Factor7	-0.131	.	-0.023	1.000

LR test: independent vs. saturated:  $\chi^2(21) = 4758.85$  Prob> $\chi^2 = 0.0000$   
 Factor loadings (pattern matrix) and unique variances

Variable	Factor1	Factor2	Factor3	Uniqueness
SFI	-0.833	0.308	0.166	0.183
VA	0.609	0.494	-0.140	0.366
PSAV	0.672	-0.548	-0.027	0.247
GE	0.965	0.074	0.057	0.059
RQ	0.928	0.201	-0.057	0.095
RL	0.975	0.017	0.074	0.043
CC	0.942	0.053	0.178	0.079

The idea is to replace natural resource rents either by fuel exports or minerals exports in robustness tests later in section 5.2. Regarding the high correlation between natural resource rents and fuel exports, the second variable (fuel exports) will be excluded from the study, and only the ores and mineral exports is maintained for robustness check, in which, natural resource rents will be replaced by minerals exports.

**Table 4. Matrix of correlation**

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) greenfield	1.000										
(2) WGI	0.388	1.000									
(3) Polity2	-0.181	-0.507	1.000								
(4) Fuel export	0.037	0.271	-0.635	1.000							
(5) Minerals export	-0.148	-0.151	0.176	-0.307	1.000						
(6) Total rent	0.094	0.280	-0.637	0.826	-0.249	1.000					
(7) Internet users	0.297	0.486	-0.218	0.104	-0.076	0.046	1.000				
(8) Investment fre~m	-0.080	0.120	0.350	-0.446	0.308	-0.430	0.280	1.000			
(9) Trade	0.258	0.432	-0.302	0.131	0.175	0.192	0.292	0.080	1.000		
(10) lnGDP	0.339	0.788	-0.441	0.459	-0.238	0.450	0.631	0.016	0.309	1.000	
(11) Inflation	-0.058	-0.355	0.037	0.048	-0.085	0.035	-0.298	-0.367	-0.279	-0.264	1.000

## 6. Results

### 6.1. General Model

Table 4 provides the results of the base model and six sub-models. Model one only includes the dependent and control variables. According to model one, openness to trade and market size (measured by the natural logarithm of GDP) are positively associated with greenfield FDI in GME, taking the mean that MNEs are more prone to invest in larger markets with friendly environments for trade. Their effects are statistically significant and different from zero at 1% and 5% significance levels, respectively. As expected, macroeconomic instability (measured by inflation) is negatively associated with greenfield investments. Its effect is statistically significant at 10% significance level.

Model two includes WGI as the only explanatory variable measuring institutional quality and political stability. Its coefficient shows that the greenfield FDI in GME is positively associated with WGI. The effect is statistically significant at 1% significance level.

In model three, Polity2, indicating the regime type (democracy or autocracy), is included as an explanatory variable. The variable negatively correlates with the number of greenfield projects; however, this effect is not statistically significant.

Total rents, measuring natural resource rents in a country, is the only explanatory variable in model four. It is negatively associated with the dependent variable, indicating that GME, countries that are richer in natural resources attract fewer greenfield investment projects. Still, the effect is not statistically significant.

Model five, which is used to draw conclusion regarding hypothesis 3.b, considers the interaction term between WGI and total rents as the single explanatory variable. Here, the coefficient of WGI and total rents are not individually reliable. The focus should merely be on the interaction term. Based on the regression result, the unexpected positive coefficient nevertheless reveals no statistically significant correlation between the interaction term and the number of greenfield investments in GME countries. Thus hypothesis 3.b receives no support.

Model six is a general model consisting of all explanatory and control variables (excluding the interaction term). This model is used to draw conclusion regarding hypotheses one, two and 3.b. In accord with model two, the general model approves a positive and significant (and different than zero at a 1% significance level) association between the dependent variable and the institutional quality measure (WGI), thus, hypothesis 1 is supported, meaning that in GME, those countries with better institutional quality (and political stability) attract more foreign investors. According to model 6, there is no significant association between the regime type and

the dependent variable. Therefore, hypothesis two is not supported, showing that there is no proof that democracies attract more greenfield FDI in the studied region. In the case of natural resources, in accord with model four, the effect of natural resource rents on greenfield investment projects is surprisingly negative, indicating that foreign investors are more inclined to invest in countries with less natural resources. However, the effect is not statistically significant. Hence, hypothesis 3.a, that in GME, countries with richer natural resources attract more foreign investors, finds no support. The reason for this finding could be explained by the fact that industries are getting less dependent to resources thanks to the constant progress of technology (Dunning, 2000). It also could be due to the climate change crisis and imposed boundaries on industries to respect sustainability through recycling and using non-fossil fuels in production process. Thus, natural resources are no more interesting for foreign investors and GME cannot rely on its competitive advantage of high natural resource stocks. As for the interaction term, model six (in accord with model five) finds no significant association with greenfield FDI, meaning that institutional quality does not lower or strengthen the effect of natural resource endowments on the greenfield FDI. Therefore, hypothesis 3.b is not supported.

In the case of control variables, the regression results for the general model suggest that the effect of openness to trade and market size on greenfield FDI is positive. Macroeconomic instability is negatively associated with the dependent variable. Surprisingly, none of these effects are statistically significant and different from zero.

## 6.2. Robustness Check

### 6.2.1. Endogeneity

In order to check the resilience of the results mentioned above, a set of robustness tests are applied. First and foremost, it is aimed at lowering the endogeneity issue. An explanatory variable is endogenous when it is correlated with the error term either because of reverse causality. In the current case, the reverse causality can result in endogeneity and lead to a bias. To tackle this issue to a certain extent, time is lagged by one period (one year) before the investments' actualization to provide a robust estimation of the effect of the independent variable. It addresses the present reverse causality in the thesis. However, it is noteworthy that in this thesis, the associations between dependent and explanatory variables are studied, and not the causality. Lagging explanatory and control variables by one year will change the equation (1) as follows:

$$F_{ist} = \beta_0 + \beta_1 P_{i(t-1)} + \beta_2 D_{i(t-1)} + \beta_3 NR_{i(t-1)} + \beta_4 X_{i(t-1)} + \varepsilon_{ist}$$

**Table 5. Estimation of the general model (Poisson with robust standard errors)**

VARIABLES	(1) Model 1	(2) Model 2	(3) Model 3	(4) Model 4	(5) Model 5	(6) Model 6
WGI		0.369*** (0.0866)			0.310*** (0.110)	0.355*** (0.0888)
Trade	0.00522*** (0.00166)	0.00326* (0.00173)	0.00443*** (0.00148)	0.00583*** (0.00172)	0.00410** (0.00187)	0.00253 (0.00160)
lnGDP	0.295** (0.126)	0.171 (0.134)	0.274** (0.118)	0.307** (0.127)	0.177 (0.131)	0.158 (0.127)
Inflation	-0.0123* (0.00694)	-0.00914 (0.00697)	-0.0134 (0.00869)	-0.0114 (0.00708)	-0.00851 (0.00698)	-0.00913 (0.00874)
Polity2			-0.00221 (0.0140)			-0.000173 (0.0122)
Total rent				-0.00534 (0.00448)	-0.00438 (0.00516)	-0.000101 (0.00417)
WGI×Total_rent					0.00230 (0.00308)	
Constant	0.211 (1.002)	1.321 (1.069)	0.384 (0.950)	0.209 (1.017)	1.336 (1.058)	1.415 (1.028)
Observations	411	411	397	411	411	397

Robust standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.10

Table 6 indicates the estimations for the base model and its sub-models using lagged variables. The regression results of Table 5 are mostly confirmed in table 6. According to model 6', Hypothesis one is again supported, showing that institutional quality and political stability are positively and significantly (at 1% significance level) associated with greenfield FDI in GME. The effect of regime type on greenfield investment is negative, still not statistically significant. Thus, hypothesis two again finds no support. Model 6' indicates that when variables are lagged by one year, natural resources are [as expected] positively associated with greenfield FDI. However, this effect is not statistically significant. Here again, hypothesis 3.a is not supported. Regarding hypothesis 3.b, model 5 suggests no statistically significant coefficient. Therefore, in accord with the non-lagged variables in model 5 of Table 5, hypothesis 3.b is not supported either. Finally, like model 6 in Table 5, none of the control variables has a statistically significant effect on the dependant variable.

**Table 6. Estimation of the general model (Poisson with robust standard error) – lagged variables**

VARIABLES	(1) Model 1'	(2) Model 2'	(3) Model 3'	(4) Model 4'	(5) Model 5'	(6) Model 6'
WGI_lag1		0.341*** (0.0925)			0.397*** (0.111)	0.339*** (0.0929)
Trade_lag1	0.00357** (0.00154)	0.00182 (0.00157)	0.00302** (0.00149)	0.00367** (0.00158)	0.00102 (0.00171)	0.00103 (0.00159)
lnGDP_lag1	0.0344 (0.103)	-0.0840 (0.108)	-0.00180 (0.0961)	0.0355 (0.104)	-0.0833 (0.107)	-0.118 (0.101)
Inflation_lag1	-0.00851 (0.00620)	-0.00606 (0.00612)	-0.00884 (0.00781)	-0.00837 (0.00623)	-0.00672 (0.00619)	-0.00498 (0.00763)
Polity2_lag1			-0.00641 (0.0147)			-0.00486 (0.0137)
Total rent_lag1				-0.000957 (0.00397)	0.00466 (0.00505)	0.00185 (0.00383)
WGI_lag1×Total _rent_lag1					-0.00215 (0.00334)	
Constant	2.258*** (0.828)	3.365*** (0.864)	2.542*** (0.785)	2.267*** (0.831)	3.291*** (0.854)	3.592*** (0.823)
Observations	386	386	373	386	386	373

Robust standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.10

### 6.2.2. Alternative Explanatory Variables

In the second step for robustness check, certain additional variables that previous studies show their significant effect on FDI, and three supplementary model specifications are performed. Firstly, an extra control variable is added to the general model to check the overall robustness. The number of internet users (as a % of the population) is used as a proxy for the level of infrastructure availability in a country (Botrić & Škuflić, 2006; Paziienza & Vecchione, 2009, Bellak et al., 2009). The variable is a measure of communication infrastructure. In this research, it is assumed that higher internet users indicate better and more internet access points and, consequently, more reliable and developed infrastructure (Michiels, 2018). This is also assumed that MNEs are more inclined to invest in countries with the availability of better infrastructure. Results of the additional regressions are demonstrated in Table 7. Adding infrastructure proxy does not affect the overall results of the 6 models. The only difference is that in all sub-models, the positive effect of GDP is now statistically significant and different than zero at 1% and 10% significance level. Here again, hypothesis one receives full support while hypotheses 2, 3.a, and 3.b are not supported.

**Table 7. Robustness check – Additional control variable**

VARIABLES	(1) Model 1	(2) Model 2	(3) Model 3	(4) Model 4	(5) Model 5	(6) Model 6
WGI		0.361*** (0.0976)			0.316*** (0.118)	0.350*** (0.0947)
Internet users	0.00381 (0.00248)	0.00132 (0.00265)	0.00427* (0.00250)	0.00367 (0.00251)	0.00125 (0.00264)	0.00174 (0.00262)
Trade	0.00510*** (0.00164)	0.00317* (0.00178)	0.00439*** (0.00146)	0.00565*** (0.00168)	0.00384** (0.00192)	0.00236 (0.00159)
lnGDP	0.389*** (0.142)	0.247* (0.149)	0.372*** (0.134)	0.398*** (0.144)	0.249* (0.147)	0.241* (0.140)
Inflation	-0.0106 (0.00724)	-0.00791 (0.00729)	-0.0104 (0.00884)	-0.00985 (0.00737)	-0.00742 (0.00731)	-0.00760 (0.00881)
Polity2		(0.406)	0.00193 (0.0137)	(0.408)	(0.411)	0.00195 (0.0122)
Total rent				-0.00477 (0.00460)	-0.00352 (0.00529)	0.000565 (0.00425)
WGI×Total_rent					0.00175 (0.00313)	
Constant	-0.470 (1.130)	0.738 (1.188)	-0.351 (1.071)	-0.463 (1.151)	0.772 (1.185)	0.766 (1.132)
Observations	400	400	390	400	400	390

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.10

To test the robustness of institutional levels, the political stability and institutional quality indicator (WGI) is replaced by investment freedom indicators. This indicator is one of the 12 constituents of the economic freedom index. It covers over 184 countries and is developed by The Heritage Foundation. Economic freedom contains four categories of openness of the market, the efficiency of regulations, size of government, and rule of law. Investment freedom belongs to the markets' openness component. Free economics is defined as an economy providing few or no restrictions on the flows of investment capital. Ineffectual and troublesome bureaucracy, little or no transparency, troubles in the repatriation of profits, and inefficiency in policy making are all proofs of constrained and restricted investment. It scales between 0 and 100, with higher scores attributing to countries with fewer restrictions on investment and more free economies. Azman-Saini et al. (2010) indicate that more freedom of economic activities attracts more FDI inflows. It is notable that unlike WGI, this variable does not include political stability, and it can make the robustness results less reliable. Results are shown in Table 8.

In models one and seven, investment freedom is the explanatory variable of institutional quality and it is positively associated with the dependent variable, meaning that efficient policy-making, more transparency, and less bureaucracy make a destination more attractive for



greenfield investment. If we consider investment freedom (as a part of the economic freedom indicator) as an indicator that also indicates certain aspects of institutional quality, hypothesis 1 again receives support. The coefficient of polity2 is not statistically significant and hypothesis two finds no support once more. Further, the coefficient for total natural resource rents is negative and not statistically significant, providing no support for hypothesis 3.a. In case on hypothesis 3.b, the interaction term between investment freedom and total natural resource rents is included in model five, showing a positive and statistically not significant coefficient. Therefore, hypothesis 3.b finds no support neither.

**Table 8. Robustness check – Poisson with robust standard errors estimation of alternative explanatory variables**

VARIABLES	(1) Model 1	(2) Model 2	(3) Model 3	(4) Model 4	(5) Model 5	(6) Model 6	(7) Model 7
WGI		0.324*** (0.0942)		0.394*** (0.101)			
Polity2	0.00555 (0.0147)	0.00368 (0.0122)					0.00770 (0.0148)
Minerals export		0.00504* (0.00298)		0.0101* (0.00530)		0.0357** (0.0150)	0.00355 (0.00294)
Trade	0.00355** (0.00153)	0.00146 (0.00168)	0.00277* (0.00161)	0.00162 (0.00177)	0.00277* (0.00161)		0.00309* (0.00160)
lnGDP	0.187 (0.123)	0.0148 (0.141)	0.170 (0.126)	0.137 (0.156)	0.170 (0.126)	0.0235 (0.129)	0.0979 (0.136)
Inflation	-0.0116 (0.00904)	-0.00681 (0.00909)	-0.0110 (0.00861)	-0.01000 (0.00753)	-0.0110 (0.00861)	-0.00668 (0.00926)	-0.00783 (0.00930)
Investment freedom	0.00725* (0.00386)		0.00198 (0.00549)		0.00198 (0.00549)	0.00940** (0.00374)	0.00679* (0.00375)
Total rent	-0.00229 (0.00428)		-0.0124* (0.00643)		-0.0124* (0.00643)		
Inv_freedom×Total_rent			0.000282 (0.000172)		0.000282 (0.000172)		
WGI×Minerals_export				-0.00793 (0.00693)			
Inv_freedom×Minerals_export						-0.000445** (0.000211)	
Constant	0.849 (0.977)	2.570** (1.123)	1.204 (1.013)	1.649 (1.245)	1.204 (1.013)	-1.374 (0.856)	1.516 (1.055)
Observations	377	363	383	369	383	360	348

Robust standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.10

Export of ores and minerals (as a percentage of merchandise exports) is added to the regression instead of natural resource rents in order to test the robustness of hypotheses 3.a

and 3.b. It is called “Minerals export” in the model. As it is shown in models two and seven, mineral export is positively associated with the dependent variable, showing that countries with more mineral endowment are more attractive to foreign investors. However, this effect is only statistically significant in model two, where WGI is the explanatory variable for institutional quality and minerals export is the explanatory variable for natural resources. Hypothesis 3.a is partially supported. The only statistically significant interaction term is what is shown in model seven. The negative association means that the positive association of investment freedom with greenfield investment lowers when more ores and minerals are available in a country. Thus, hypothesis 3.b is also partially supported.

### 6.2.3. Additional Interaction Terms

Three sets of interactions are also studied in order to increase the robustness of the results. The regression results are demonstrated in Table 9. In resource-seeking FDI, the state of infrastructure in a country could influence the effect of natural resources bonanza on FDI. In this study, it is assumed that MNEs need a minimum development level and availability of infrastructure to extract and transfer the natural resources stock. Thus, one interaction term, "rents×internet" is included in model 1 (see Table 9). Regression results indicate that the interaction effect between infrastructure proxy (internet users) and natural resource rents is positive and statistically insignificant. It means that in GME, level of infrastructures' development strengthens the positive association between natural resource endowments and greenfield FDI.

Furthermore, in the current thesis, it is assumed that institutional quality and level of democracy could affect trade openness, and trade openness also affects the link between WGI and greenfield FDI and the link between polity and greenfield FDI; thus, two more interaction terms between these two variables is inserted in the model. Better institutional quality provides a more efficient business environment and reduces transaction costs. López-Córdova and Meissner (2008) also indicate that trade openness can promote democratic values. Consequently, an interaction term between trade openness and institutional quality (Trade×WGI) is added to model 2 (see Table 9). The coefficient of this interaction is negative and statistically significant and different from zero at 1% significance level, meaning that more trade openness results in a smaller association between institutional quality and greenfield FDI in GME. The last interaction term is that between openness to trade and regime type measuring whether the country is governed by a democratic or autocratic regime (Trade×Polity). Based on model 3 in Table 9, the interaction term has a positive, still, statistically insignificant coefficient.

**Table 9. FE estimation of the general model – Models with interaction terms**

VARIABLES	(1) Model 1	(2) Model 2	(3) Model 3
WGI	0.296*** (0.0963)	0.687*** (0.168)	0.272*** (0.0968)
Polity2	0.000550 (0.0128)	7.73e-05 (0.0118)	-0.00675 (0.0190)
Total rent	-0.00415 (0.00446)	-0.00268 (0.00395)	-0.00127 (0.00413)
Internet users	-0.00323 (0.00305)		
Rent×Internet	8.84e-05 (7.77e-05)		
Trade	0.00224 (0.00149)	0.00678*** (0.00200)	0.00325 (0.00198)
GDP	1.44e-05*** (5.18e-06)	1.85e-05*** (4.98e-06)	1.72e-05*** (5.07e-06)
Inflation	-0.0106 (0.00882)	-0.0101 (0.00869)	-0.0109 (0.00883)
Trade×WGI		-0.00426*** (0.00118)	
Trade×Polity2			0.000138 (0.000199)
Constant	2.735*** (0.188)	2.453*** (0.198)	2.637*** (0.211)
Observations	390	397	397

Robust standard errors in parentheses  
 \*\*\* p<0.01, \*\* p<0.05, \* p<0.10

## 7. Discussion

The current master thesis tries to find answer for two research questions using a count dataset covering GME region countries from 2003 until 2018, and application of a Poisson with robust standard errors model. Primarily, it aims to see how the institutional quality and political instability are associated with greenfield FDI in GME. Study's results show that institutional quality and political stability are positively associated with greenfield FDI in GME. This finding is in accord with research expectations and several findings in previous studies (Busse & Hefeker, 2007; Ianchovichina et al., 2013; and Burger et al., 2015).

The contribution of the current master thesis to the literature is as follows. Firstly, it adds a set of understudied countries to the previously studied ones. When it comes to examination of the effect of institutional quality on greenfield FDI in less developed countries, the preceding researches predominantly cover SSA, ME, or South American countries. However, this master

thesis chooses GME as the geographical focus which enfolds 16 more countries (such as Afghanistan, Pakistan, Morocco, Libya, Tunisia, and Algeria) compared with ME. These additional countries besides ME countries provide a solid ground for investigating the role that institutional quality plays in investors' decision-making process to choose a greenfield investment destination. Secondly, the research is not only limited to the institutional level. Through the second research question, it integrates natural resources as well to see the effect of another crucial characteristic of this region on greenfield FDI. This thesis' contribution to the literature is also through the incorporation of an interaction effect between natural resources and institutions' quality in order to assess whether availability of natural resources in GME lower the positive association between institutional quality and greenfield FDI.

### 7.1 Limitations

Like any other research, this research suffers from a set of limitations, in absence of which, the results could be more robust. First and foremost, the current thesis does not measure the causality but the associations between dependent and explanatory variables. The association could be a combination of the real causal effect, reverse causality, and effects of the omitted variables. Next limitations are principally about data availability. Among data sources on institutional quality and political instability, only the WGI dataset by the World Bank and INSR were open source. This is while another database that is vastly used in previous studies is the International Country Risk Guide database, which is not available through Erasmus Database. The political risk index in this dataset could be used as a good proxy to check the robustness of the results.

Additionally, less developed countries with corrupted governments and non-transparent institutions systematically suffer from a lack of reliable data. This master thesis also does not include all GME countries due to a lack of data. Such countries normally do not have a substantial amount of trade and economic exchanges with foreign entities, nevertheless, including them in the data could improve the robustness of results.

Furthermore, to the best of the author's knowledge, there is no available data on natural resources stock in a country. In the current study, the variable which explains the endowment of natural resources is the total natural resources rents measuring the share of earned revenue by natural resources in a country's GDP. This is while a variable that measures natural resources stock in a country could be a better proxy to test hypothesis 3 (a, b). Nevertheless, such data was not available. The stock could be a better representative of resource-seeking motives since there might be resources that are not yet extracted because of unavailable technology, poor management, and unsatisfactory infrastructure in less developed countries. For foreign

investors from more developed countries, such potential stocks could be as attractive as those resources which are already operational.

Moreover, another useful control variable in the current study could be the cultural distance developed by Geert Hofstede under Cultural Dimensions Theory. This framework evaluates the effect of cultural differences on how a business runs. Kang and Jiang (2012) state that to have legitimacy in the host country in terms of normative issues, foreign investors should be aware of cultural distance as an obstacle. According to Hofstede (1984), it can impose extra transaction and communication costs, and make the integration process in the host country troublesome. Nonetheless, Hofstede Insight lacks data on the majority of GME countries. In further studies on greenfield FDI in GME, one could use the Hofstede questionnaire (which was out of the scope of the current thesis) to create an index for related countries and add this factor to the multiple regression to enhance the robustness of results.

The last limitation is also about the geographical coverage. GME is an understudied region, especially in economic and international business areas. Unlike SSA and MENA, there are insufficient precedent studies about the characteristics of greenfield investments in this region. This shortage may affect the current research through the lack of knowledge about GME.

## 8. Conclusion and Implications

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The Greater Middle East is principally known for political unrests, poor institutional quality, and natural resources bonanza. These characteristics make this region an appropriate sample to study the impact of these factors on greenfield FDI. The current master thesis aims at examining the effect of institutional quality on greenfield FDI in the GME region. It incorporates the level of political stability as a component of the institutional quality as well. Additionally, it creates an interaction term between institutional quality and natural resources to see whether each of these explanatory variables affects each other or not.

In order to find answers to two research questions in the thesis, four hypotheses are defined in this thesis. The first hypothesis receives support, which means that in GME, institutional quality (including political stability) is positively associated with the greenfield FDI. This result is fully robust to lagged explanatory variables and also to add an extra control variable (internet users measuring infrastructures' development in destination country). This finding is in line with Busse and Hefeker (2007), Ianchovichina et al (2013) and Burger et al. (2015) findings. The second hypothesis, states that foreign investors are less prone to choose a country with an autocratic regime as an investment destination. This hypothesis is not

supported, not in the general model nor robustness tests, indicating that regime types are not necessarily a determinant factor for investors. Building solid relationships with autocratic regimes could be easier for foreign investors. Regarding the role of natural resources, hypothesis 3.a does not receive support either. In GME, the association between natural resources is interestingly negative but not statistically significant. The robustness check, on the contrary, shows a positive and significant association between these two, as was expected in hypothesis 3.a. Regression results show no support for hypothesis 3.b neither. The robustness tests also reveal no statistically significant coefficient for the interaction term.

The following implications can be drawn from the above-mentioned conclusion. GME governments should consider the stimulating role of the institutional quality in attracting greenfield FDI to their countries. Growing an economy through the benefits of greenfield foreign investments requires better institutions and improved political stability. This is true that political stability is not a simple issue depending only on a decision that reaches overnight and solely on the will of the ruling government. On the other hand, the amelioration of institutional quality (e.g. more control on corruption, better regulation, creation of a more reliable environment for agents) is principally in the hand of the ruling governments and policymakers. Furthermore, as it is warned on many occasions by experts under the notion of the "natural resources curse", also in this region, countries with natural resources endowments cannot rely anymore merely on this wealth as a lifeline. GME's governments and policymakers should envisage that industries are getting less and less dependent on resources thanks to the novel technologies. Therefore, GME countries should be aware of the fact that their competitive advantage (being rich in natural resources) is no more an adequate factor to attract foreign investors.

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## APPENDIX

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**Table 1. Descriptive statistics – robustness check variables**

Variable	Meaning	Obs	Mean	Std. Dev.	Min	Max
Internet users	Number of internet users	492	30.89	27.358	.065	99.653
Fuel export	Export of fuel (% of merchandise export)	396	45.997	38.769	.026	99.986
Minerals export	Export of ores and minerals (% of merchandise export)	404	7.909	12.845	0	76.848
Investment Freedom	Restrictions on capital flow	454	43.899	21.704	0	85