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A comparative Analysis of Foreign Direct Investment, Institutional Quality and Economic Development in Developed and Underdeveloped Countries: From 1996 to 2015

Gelişmiş ve Azgelişmiş Ülkelerde Doğrudan Yabancı Yatırım, Kurumsal Kalite ve Ekonomik Kalkınmanın Karşılaştırmalı Bir Analizi:1996- 2015 Dönemi

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Abstract

Throughout the decades, theories have stated that countries with a lack of savings should well-fix its institutional structure and follow, consequently, the economic development's path by attracting FDI. This work examines the effects of natural resources, FDI and institutional quality on economic development as well as the role of natural resources and institutions in the attraction of FDI to economic development from 1996 to 2015. In this study two groups of countries were selected. A group of five rich-natural resources and underdeveloped countries and that of five poor-natural resources and developed countries. The first group is constituted by: Democratic Republic of Congo (DRC), Ghana, Liberia, Nigeria and Zimbabwe, while the second is composed by: Denmark, Germany, Ireland, Finland and Switzerland. This study makes analysis which is relying on the fixed-effects models and on the technique of dummy variables in the population-averaged models with the OLS estimators.

According to the results of this study, institutional quality matter in the group of underdeveloped countries. These countries worry more about almost all institutional quality variables, whereas the group of developed countries worry more about political instability such as violence or terrorism's likelihood and government effectiveness other than political variables. The establishment of political institutions that reduce corruption, improve the quality of law, reduce problems in contracts' execution, respect the voice of electors, and increase the quality of control of markets may, of course, permit natural resources and FDI to act positively on economic development in the group of rich-natural resources/oil and underdeveloped countries.

Key words: Natural Resources, Institutional Quality, Foreign Direct Investment, Economic Development.

Özet

Genel olarak teoride, tasarruf eksikliği olan ülkelerin kurumsal yapısını iyi bir şekilde düzeltmesi ve sonuç olarak DYY'yi çekerek ekonomik gelişmenin yolunu izlemesi gerektiği belirtilmektedir. Bu çalışmada doğal kaynakların, doğrudan yabancı yatırımların ve kurumların kalitesinin ekonomik büyüme üzerindeki etkileri 1996- 2015 yılları arasındaki dönem için incelenmiştir. Çalışmanın analiz kısmında fixed-effects modelleri ve kukla değişkenler kullanırak OLS tahmin modeli kurulmuştur. Bu çalışmada iki farklı ülke grubu seçilmiştir. Beş ülkeden oluşan birinci grupta doğal kaynak zengini ve az gelişmiş ülkeler olan Demokratik Kongo Cumhuriyeti, Gana, Liberya, Nijerya ve Zimbabwe yer almaktayken ikinci grupta ise Danimarka, Almanya, İrlanda, Finlandiya ve İsviçre gibi gelişmiş ancak doğal kaynak yönünden zayıf ülkeler bulunmaktadır.

Bu çalışmanın bulgularına göre doğal kaynak zengini ülkerin büyüme performansı doğal kaynak yoksunu olan ülkere göre düşüktür. Doğal kaynakların, ekonomik büyümeye olumlu katkılar sağlayabilmesi için ülkede bulunan kurumların iyi işlemesi gerekmektedir. Bol miktarda doğal kaynak rezervi olan ülkelerin üretim yanlısı politik kurumlara sahip olmasıyla ekonomik büyüme gerçekleşmektedir. Çalışmanın sonucuna göre; az gelişmiş ülkerden oluşan birinci grup ülkelerde kurumların kalitesi zayıftır. Bu ülkelerde siyasi çeşitlilikten daha fazla şiddet ve terör gibi politik istikrarsızlık ve hükümetin etkinsizliği mevcuttur. Az gelişmiş ülkelerde yolsuzlukların azaltılması, kanunların kalitesinin arttırılması, seçim sonuçlarına saygı ve siyasi kurumların güçlendirlmesi doğal kaynakların doğru kullanımına neden olurken aynı zamanda doğrudan yabancı yatırımları artırarak ekonomik büyümede önemli bir rol oynamaktadır.

Anahtar Kelimeler: *Doğal Kaynaklar, Kurumların Kalitesi, Doğrudan Yabancı Yatırımlar, Ekonomik Büyüme.*

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1. Introduction

Since the 1980s, liberalization of capital movements has gradually increased as an extension of financial liberalization practices that began with the rise of neo-liberal economic policies throughout the world economy. Another extension of this process is the tendency of foreign direct investment (FDI) to increase. The question of whether the underdeveloped countries can meet all or at least some of the capital needed by FDI has begun to be asked more often with globalization. In addition, it is another curious research question whether foreign direct investments contribute positively or negatively to the host country's economy.

In general, developed countries are defined as countries with high national income per capita, industrialized and high human development index, while underdeveloped countries are defined as countries that have not yet achieved their economic development. The general tendency of underdeveloped countries is to promote the entry of FDI into the country by adopting open economy policies to increase their economic growth. In terms of countries implementing such policies, FDI is considered not only as a capital for the countries in which they invest, but also as a source of creating technological innovation and employment (Ekinci, 2011: 72).

Natural resources are seen as an important factor for attracting FDI to boost economic development. But the flows of FDI to African countries and its effects on economic development is also a substantial subject with many controversies in underdeveloped countries. For instance, in 2015, FDI inward for group of developed countries was higher than that of the group of underdeveloped countries. Its value was 3641.5 US Dollars at current prices in millions for Denmark, 31719.3 for Germany, 100542.4 for Ireland, 8289.6 for Finland and 68838 for Switzerland; whereas the value was 1673.5 US Dollars at current prices in millions for DRC, 31719.3 for Ghana, 100542.4 for Liberia, 100542.4 for Nigeria and 421 for Zimbabwe [United Nations Conference on Trade and Development (UNCTAD), 2015].

The causes of this lack in attracting FDI to African countries are stressed by many research works as well as national and international reports. All of these works put accents on the institutional quality of the host-countries as irreversible pivot which must be strengthened in order to facilitate and promise positive effects on economic growth. However, even if the perception of quality of institutions is actually seen as a sine qua non condition to attract FDI, it is differently perceived by foreign investors. For instance, W. Chen, D. Dollar, and H. Tang (2015: 1) noted that *China's outward direct investment is uncorrelated with a measure of property rights and rule of law, whereas Western investment favors the better governance environments*.

Additionally, the importance of natural resources on economic growth constitutes an endless debate. As some poor-resources countries perform well, and occupate even a high rank of economic development in the world; other rich-natural resources countries' population is among the poorest of the World with a GDP per capita which is less than $ 4500/year. This phenomenon is call "*The resource curse*". It is defined as follows: "*The resource curse refers to a situation whereby a country has an export-driven natural resources generates large revenues for government but leads paradoxically to economic stagnation and political instability.*"(African Development Bank, 2007: 19)

One group of these rich-natural resources, but economically poor countries is a group of African countries as it is reported by the Resource Governance Index of the Revenue Watch Institute as follows: "For the 17 African countries in the index, fuel, ores and metal exports represented on average more than half of total exports in 2006-2011. In 2011, Nigeria's oil revenues alone were 60 percent higher than international aid to the entire continent." In 2013, the same index classified Ghana, Liberia, Nigeria, DRC (Democratic Republic of Congo), and Zimbabwe in the group of the 58 worldwide nations, which produce 85% of the world's petroleum, 90% of diamonds and 80% of copper, generating trillions of dollars in annual profits.

This paper consists of a comparison of the impact of natural resources, institutional quality and FDI on economic growth of five developed but poor-natural resources countries and on that of five underdeveloped but rich-natural resource countries. It aims to answer to the following questions:

- Comparatively, what were the effects of natural resources, FDI and institutional quality on economic growth in the group of poor-natural resources and developed countries and in the group of rich-natural resources and underdeveloped countries from 1996 to 2015?
- Did institutional quality help to mitigate the *Theoretical Curse of Natural Resources* on economic growth in the group of poor-natural resources and developed countries as well as in the group of rich-natural resources and underdeveloped countries from 1996 to 2015?
- Did natural resources and institutional quality help to attract FDI to economic growth in the group of poor-natural resources and developed as well as in the group of rich-natural resources and underdeveloped countries from 1996 to 2015?

Consequently hypotheses are as follows:

A. Natural resources, FDI and institutional quality have positive effects on economic growth in the group of poor-natural resources and developed countries and in the group of rich-natural resources and underdeveloped countries from 1995 to2015.

B. Institutional quality helped to improve the management of natural resources and caused economic performance in the group of poor-natural resources and developed countries as well as in the group of rich-natural resources and underdeveloped countries from 1996 to 2015.

C. Natural resources and institutional quality helped to attract FDI to economic growth in the group of poor-natural resources and developed as well as in the group of rich-natural resources and underdeveloped countries from 1996 to 2015.

2. Relationship Between FDI and Economic Growth

Generally, FDIs are made by foreign firms into a newly established national company. They combine capital investment, technology, management knowledge and bring together their authority of control in the existing company's investment (Adıgüzel, 2011:121; Şahin, 2016: 44; Karluk, 2007: 566).

Referring to another definition, FDIs are traditionally defined as cross-border capital movements in the Central Bank's balance of payments. Thus, FDI can enter the country in many different ways (Çapraz, 2003: 16):

- The merger and acquisition of companies,
- Investments realized through privatization,
- Joint ventures, strategic partnerships, licensing and other investments and
- Fixed capital investments.

Development strategies for attracting FDI are now commonplace among less developed countries, but there is also an increasingly competition for the "right" kinds of investment. In general, the balance in bargaining power has shifted in favour of the multi national enterprises (MNEs), and less developed countries increasingly need to provide unique, non-replicable created assets to maintain a successful FDI-assisted development strategy (Narula and Dunning, 2000: 141).

FDI is mainly carried out by MNEs that persist in their investment activities in more than one country and can take decisions on production from a center or affect the decisions of companies affiliated in various ways (Bal, 2010: 450, 467). MNEs are corporations in which at least 20% of their total financial resources in foreign countries and at least 35% of their profits are derived from international activities (Artisien, 1985:5; Gedikli, 2011: 103). In short, MNEs emerge as actors that enable foreign capital investments to take place in the host countries. (Hirst ve Thompson, Çev: Erdem ve Yücel, 2003:79).

The advantages of FDI to the host country are as follows; providing foreign exchange input, increasing capital stock, creating employment and transferring technology (Seyidoğlu, 2003: 139). In short, FDI is expected to contribute to the national income of that country by increasing production (Karluk, 2007: 101). At this point, it is also emphasized that FDI must be well planned and directed in order to be beneficial to the host country's economic growth (Görgün, 2004: 4; Koyuncu, 2011: 6).

However, besides these positive effects, negative effects of FDI can be released. These effects may be seen as the possibilities that foreigners detain for increasing their control over the economy, for eliminating protective restrictions such as customs tariffs and import quotas, for breaking down the economic integrity on one hand by using advanced technology competing the old existing technology, and by creating an unfair competition against small scale domestic companies on the other hand (Seyidoğlu, 2003: 730; Koyuncu, 2011: 6).

Some of the negative effects of FDI emerge at the time when the investment is made, while others emerge overtime. The main feature of FDI is its direct effect control overbusiness management. In this respect, foreign capital, which is accepted without being bound to a plan, can sometimes seize sectors with strategic priorities for the country's economy. In this case, the freedom to implement monetary, fiscal and foreign trade policies for specific purposes may be reduced, or an independent industrialization policy may become more difficult to be implemented (Seyidoğlu, 2007: 618).

In the literature, there is not a full consensus among studies examining the relation between FDI olacak heryer metnin içinde, and economic growth. While some of the theoretical and empirical studies indicate that FDI has a positive effect on economic growth, others indicate that there exist positive, but not meaningful effects, and some others signal negative effects. Borensztein(1997), Gregorio and Lee (1998), Blomstörm (1992), Bosworth and Collins (1999), Zhang (2001), Campos and Kinoshita (2002), Mencinger (2003), Alfaro et al. (2004), Asheghian (2004), Şimşek and Behdioglu (2006), Magnus and Fosu (2008), Klein and Olivei (2008), Örnek (2008) have found a positive relationship between FDI and economic growth. Alagöz et al. (2008), Şen and Karagöz (2008) have pointed out that FDI does not have a significant effect on economic growth, whereas Yang (2002); Hermes and Lensink (2003); Akinlo (2004); Ayanwale (2007) have noticed that the relationship between FDI and economic growth is insignificant or negative.

3. Relationship Between Natural Resources and Economic Growth

The elements expressed as natural resources are all living and non-living natural beings in the ground, underground and above ground, and which are directly or indirectly open to human use, with renewable or non-renewable species in nature. Some examples are underground minerals, oil and natural gas deposits, forests, lakes and rivers, diversity of other

vegetation and animal species (flora and fauna). The distribution of natural resources of the earth is unstable, and some countries are rich in natural resources, some are moderate, and others are poor. Then, it can be mentioned that it's a geographical chance to have undergrounds abundant in natural resources (WTO, 2010: 172).

Natural resources are generally regarded as one of the factors that increase production and accelerate economic development. The findings show that there is no international equality in terms of the distribution of natural resources in the world. According to some researchers, this unequal distribution of natural resources has been an effective factor in the development of developed and underdeveloped countries. This view states that natural resources are scarce and inadequate in many underdeveloped countries. The precise assessment of natural resources and the measures to be taken are vital for promoting economic development. At this point, it is important that the land, under-ground and over-ground resources shall be operated without waste. For this, capital, skilled labor and technology are needed. In underdeveloped countries, the shortcomings of these factors on economic development are breaking (Unay, 1983: 262).

For economic development, countries need significant inputs to production. The fact that natural resources participate in the production process in a correct way can make it easier for countries to succeed, while the lack of natural resources can limit economic development. In some researches it is argued that natural resources are the main determinant of technological research and / or economic development (Özsabuncuoğlu, 1999: 3)

Some views argue that there is a positive relationship between natural resources and economic growth, and others argue that there is a negative relationship between these two factors. The views that supported the positive effects of natural resources on economic growth notice that natural resources have high potential profit due to the fact that natural resources are not produced differently from other economic goods. Furthermore, it is stated that natural resources play a key role in achieving economic prosperity and development by reducing poverty and sustaining economic growth especially in developing countries (Çinar, 2015: 171-190).

4. Relationship Between Natural Resources and Foreign Direct Investment

The abundance and lower or at least moderate price of natural resources are seen as important economic factors affecting the decision of foreign investors to come to invest in a country (Akdiş, 1998: 33). When it comes to FDI in Sub-Saharan Africa (SSA), the common perception is that FDI is largely driven by natural resources and market size (Asiedu, 2006: 63).

In this context, it is emphasized that there is a positive relationship between natural resources

and FDI. FDI can be started in the beginning to operate cheap and abundant natural resources and to supply raw materials to the parent company. Underground and aboveground resources-rich, oil-producing countries such as Mexico, the Philippines, and Nigeria are examples of this kind of attractiveness of FDI (Akdiş, 1998: 33).

Nevertheless, according to E. Asiedu (2010: 7), there can also be a negative associationship between natural resources and FDI for the following three fundamental reasons: The first reason is based on the idea that resource booms lead to an appreciation of the local currency. This makes the country's exports less competitive at World prices, and thereby crowds out investments in non-natural resource tradable sectors. If the crowding out is more than one-for-one, it may lead to an overall decline in FDI. The second reason is that natural resources, in particular oil, are characterized by booms and busts, leading to increased volatility in the exchange rate. In addition, a higher share of fuel and minerals in total merchandise exports implies less trade diversification, which in turn makes a country more vulnerable to external shocks. All these factors generate macroeconomic instability and therefore reduce FDI. Finally, FDI in natural resource rich countries tend to be concentrated in the natural resource sector. While natural resource exploration requires a large initial capital outlay, the continuing operations demands a small cash flow. Thus, after the initial phase, FDI may be staggered (Asiedu, 2010: 7).

5. The Impact of Interaction Between Institutional Quality and Natural Resources on Economic Growth

There are various studies assessed how institutional quality and natural resources interact to affect economic growth. While some of these studies notice that the abundance in natural resources leads to the promoting of economic growth, others signal the existence of "natural resource curse" effect. The latter works notice that the lack of good quality of institutions leads to negative effects of natural resources on economic growth.

Furthermore, D. Acemoğlu and J. Robinson (2016: 53) notice that the differences in development between the countries of the world cannot be explained by any version of the climate, disease or geographical hypotheses. But, the land ownership structure, the incentives of the government organization and the influence of the institutions have an important role in the economic development of the countries (Acemoğlu and Robinson,2016: 53). From that point of view, it is seen that the institutional framework such as the management system of the countries, institutional quality, property rights, political, economic and civil liberties, social and human capital, trust and culture are important factors in ensuring social order and economic growth (Bakırtaş, 2016: 67, 87).

Therefore, most underdeveloped countries cannot resist to macroeconomic shocks due to weak local institutions and cannot sustain their growth trends in the long run. Measures taken against such kind of shocks fail for the implementations of economic policy due to serious problems related to the revenue distribution mechanism. However, the problem here is how policies will be implemented; since economic policies are important in how their policies are applied as well as decisions in their implementation. The establishment of a robust institutional structure at this point allows the negations in policy implementation to be mitigated at a lower cost and avoids economic shock growth (Rodrik, 1999: 1)

The role of institutions in determining how natural resources affect economic growth has been a point of divergence in the resource curse literature. Some emphasize that resource rents have a corrosive effect on the quality of a country's institutions, and thus its economic growth. Others downplay the mediating role of institutions in the resource curse hypothesis. Yet others emphasize that it is the (exogenous) quality of institutions that determines whether resource rents pose a resource curse or blessing (Badeeb, 2016: 12).

6. Description of Variables, Origin of Data, Descriptive Statistics, and Empirical Analysis

This section provides the variables description, the sources of data, methodology as well as regressions'results. It simultaneously discusses different effects of independent variables on dependent variable.

6.1. Variables Description and Origin of Data

Descriptive and empirical analysis use **real GDP per capita (**called ***rgdpp***) as dependent variable. Besides, the **share of FDI** (called ***fdi***) **in % of GDP**, **natural resources rent** (called ***nar***) **in % GDP**, the **share of oil rent** (called ***oil***) **in % of GDP** and **six indicators of institutional quality**[4] are used as independent variables. The six institutional quality indicators are indicators of perception from the Worldwide Governance Indicators. These 6 governance indicators are measured in units ranging from around -2.5 to 2.5, with a higher value closer to 2.5 corresponds to better governance perception, and a lower value closer to -2.5 corresponds to the worst governance perception. They are grouped into 3 categories of 2 indicators as follow (D. Kaufmann, A. Kraay, and M. Mastruzzi, 2010: 3) :

(a) The process by which governments are selected, monitored, and replaced:

- **Voice and Accountability (VA)** called (***gva*** in this analysis) helps capturing perceptions of the extent to which country's citizens are able to participate in selecting their government, as well as freedom of expression of association, and free media.
- **Political Stability and Absence of Violence/Terrorism (PV)** called (***psa*** in this analysis) helps capturing perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional and/or violent means, including politically-motivated violence and terrorism.

(b) The capacity of the government to effectively formulate and implement sound policies:

- **Government Effectiveness (GE)** called (***ge*** in this analysis) helps capturing perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.
- **Regulatory Quality (RQ)** called (***rq*** in this analysis) helps capturing perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

(c) The respect of citizens and the state for the institutions that govern economics and social interactions among them:

- **Rule of Law (RL)** called (***rol*** in this analysis) helps capturing perceptions of the extent to which agents have confidence in and abide by the rules of the society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.
- **Control of corruption (CC)** called (***coc*** in this analysis) helps capturing the perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

The data of *rgdpp*, *nar*, *oil* and that of *fdi* are from World Development Indicators of the World Bank for 10 countries (Denmark, Germany, Ireland, Finland, Switzerland, DRC, Ghana, Liberia, Nigeria, and Zimbabwe). Those of *gva, psa, ge, rq, rol* and *coc* are from the Worldwide Governance Indicators of the World Bank. These data are extracted from 1996 to 2015[5]. The period of study is chosen due to the availability of data, especially those of institutional quality.

6.2. Statistical Analysis

As this analysis consists of comparing different impacts of natural resources as an irreversible key to boost economic development by attracting FDI, this paper is also concerned by the analysis of the institutional quality in different groups of countries. A group of five developed countries (Denmark, Germany, Ireland, Finland, and Switzerland) which are less or even not abundant in natural resources, and a group of five underdeveloped countries (DRC, Ghana, Liberia, Nigeria, and Zimbabwe) which are abundant in natural resources and/or in petroleum are chosen.

The variables are, firstly, plotted over the time, and secondly by considering the means of independent variable sorted on the dependent variable (here rgdpp in natural logarithm). After a table in order to conclude on the differences is used. (Further graphics on *rgdpp* and *institutional quality variables* are given in the Appendix). This analysis uses the STATA package to investigate the evolution of variables over time.

[4] http://info.worldbank.org/governance/wgi/index.aspx#home
[5] Data which were not completed for some last years have been calculated as the means using the data of previous or the next years.

Evolution of Variables over time (plotted using Stata package)

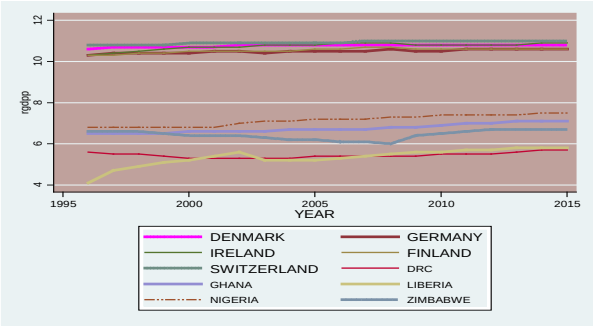

Figure 1: Differences in *rgdpp* in poor vs rich-natural resources countries

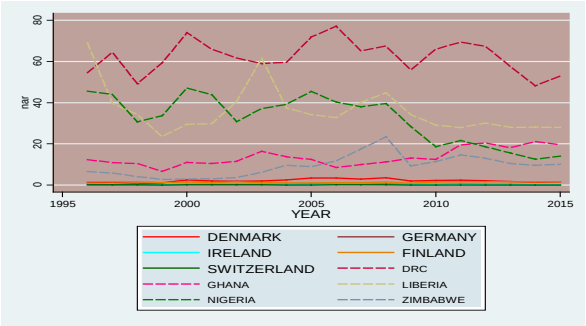

Figure 2: *nar* in poor vs rich-natural resources countries

From the figures 1 and 2, it is clear that there is a deep difference between the two groups of countries in term of development as well as natural resources abundance over time. From the Figure 1, the mean of real GDP/per capita of the group of developed countries is higher than \$49,020.80 ($e^{10,8}$ = \$49,020.80), and that of underdeveloped countries is around \$897.85 from 1996 to 2015. From the Figure 2, it is shown that the group of undeveloped counries are rich in natural resources with a mean of natural resources rents that is higher than 25% of GDP (except Ghana and Zimbabwe with a mean of around 10% of GDP), while the group of developed countries and poor-natural resources has a mean of around 0.5% of GDP.

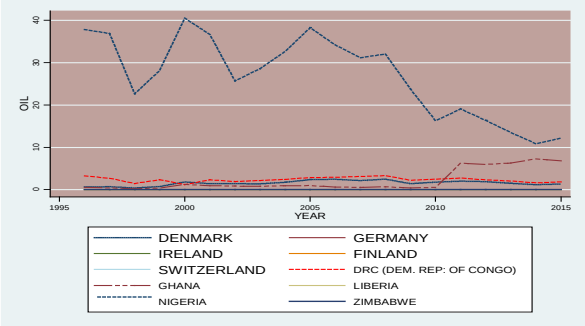

Figure 3: *oil* abundance in rich and poor-natural resources countries

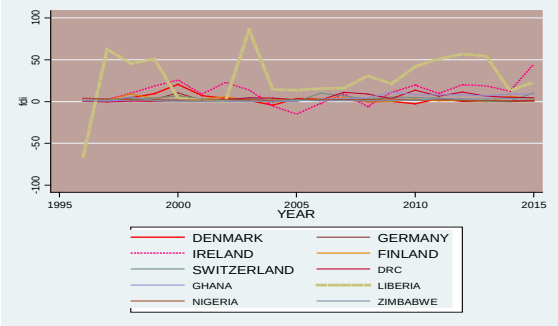

Figure 4: *fdi inflows* in poor and rich-natural resources countries

From Figure 3, it can be seen that Nigeria is the leading country in terms of petroleum production. It has a mean of oil rents, which is more than 35% of GDP, and it is followed by the Democratic Republic of Congo (DRC). Other countries have oil rents which are under 5% of GDP.

On the Figure 4 is plotted the share of *fdi* in % of GDP. From the Figure, Liberia leads in terms of FDI inflows with strong fluctuations over time. Then comes Denmark and Finland. Other countries have marginal shares of FDI. In order to well-cover this statistical analysis, the table below summarizes the differences between the 2 groups of countries.

TABLE 1: DESCRIPTIVE STATISTICS

Group of Countries	Variable	Obs.	Mean	Std. Dev.	Min.	Max.
North	Log of Real GDP/capita (*rgdpp*)	100	10.692	0.19	10.3	11
North	FDI in % of GDP (*fdi*)	100	4.44	7.37	-15	44.60
North	Rent of Natural Resources in % of GDP (*nar*)	100	0.76	0.88	0	3.50
North	Oil rents in % of GDP (*oil*)	100	0.32	0.68	0	2.5
North	Voice and Acountability (*gva*) values from *-2.5 to +2.5*	100	1.50	0.13	1.20	1.80
North	Political Stability and Absence of Violence/Terrorism (*psa)* values from *-2.5 to +2.5*	100	1.22	0.26	0.5	1.70
North	Government Effectiveness (*ge)* values from *-2.5 to +2.5*	100	1.89	0.26	1.30	2.40
North	Regulatory Quality (*rq*) values from *-2.5 to +2.5*	100	1.68	0.23	0	1.90
North	Rule of Law (*rol*) values from *-2.5 to +2.5*	100	1.81	0.16	1.50	2.10
North	Control of corruption (*coc*) values from *-2.5 to +2.5*	100	2.10	0.34	1.30	2.6
South	Log of Real GDP/capita (*rgdpp*)	100	6.22	0.76	4.1	7.5
South	FDI in % of GDP (*fdi*)	100	7.81	17.16	-65.4	86
South	Rent of Natural Resources in % of GDP (*nar*)	100	30.68	20.83	2.7	77.1
South	Oil rents in % of GDP (*oil*)	100	6.27	11.26	0	40.49
South	Voice and Acountability (*gva*) values from *-2.5 to +2.5*	100	-0.85	0.70	-1.9	0.5
South	Political Stability and Absence of Violence/Terrorism (*psa)* values from *-2.5 to +2.5*	100	-1.31	0.86	-3	0.2
South	Government Effectiveness (*ge)* values from *-2.5 to +2.5*	100	-1.1	0.61	-2	0.1
South	Regulatory Quality (*rq*) values from *-2.5 to +2.5*	100	-1.15	0.70	-2.4	0.3
South	Rule of Law (*rol*) values from *-2.5 to +2.5*	100	-1.17	0.70	-2.2	0.1
South	Control of corruption (*coc*) values from *-2.5 to +2.5*	100	-1	0.54	-2.1	0.1

Table 1 enlightens the global disparities between five developed and poor-natural resources countries, and five underdeveloped and rich-natural resources countries. The 5 countries of the North group, which are developed have an average rent of natural resources of 0.76 % (4th row and 4th column), while that of the 5 countries of South group values around 30.68 % (14th row and 4th column) from 1996 to 2015. The minimum value of natural resource rent of the North group of countries is 0% (4th row and 6th column) and the maximum is 3.50 % (4th row and 7th column) of GDP, while those of the South group of countries are 2.7% (14th row and 6th column) and 77.1% (14th row and 7th column) of GDP from 1996 to 2015, respectively.

Furthermore, the 5 North countries which are developed have an average of oil rents of 0.32 in % of GDP (5th row and 4th column), while that of the 5 South countries values around 30.68% of GDP (15th row and 4th column) from 1996 to 2015. The minimum value of oil rents for the North group of countries is 0% (4th row and 6th column) and the maximum is 2.5 % of GDP (4th row and 7th column), while those of the South group of countries are 0 % (15th row and 6th column) and 40.49% of GDP (15th row and 7th column), respectively.

According to the shares of FDI in GDP, the 5 North countries which are developed have an average of 4.44 % (3rd row and 4th column), while that of the 5 South countries values around 7.81% (13th row and 4th column) of GDP from 1996 to 2015. The minimum share of FDI in GDP for the North group of countries is -15% (3rd row and 6th column) and the maximum is 44.60 % (3rd row and 7th column), while those of the Southern group of countries are -65.4 % (13th row and 6th column) and 86 % of GDP (15th row and 7th column) from 1996 to 2015, respectively.

As far as institutional quality is concerned, all the 6 indicators are averagely positive in the North (from the 6th row to the 11th row) and negative in the South (16th row to 21st row) group of countries. This shows that there are big differences in terms of natural resources dotation, political institutions and political views oriented to the attraction of FDI to the promotion of economic development. The North group of developed and poor-natural resources countries have good institutional quality, while the South group of underdeveloped and rich-natural resources and petroleum countries have a bad quality

of political institutions. Thus, the effects of political institutions, natural resources and FDI on economic growth are worth to be analyzed throughout the incoming empirical analysis'part.

6.3. Empirical Analysis

This work simply regresses dependent variable *rgdpp* on independent variables *fdi*, *nar*, *oil* and the *six institutional quality indicators (INST. Q. = gva, psa, ge, rq, rol and coc)*. It uses the methodology below.

6.3.1 Regressions Methodology

This model covers a period of time from 1996 to 2015 for 10 countries separated into 2 groups; North as a country is classified as developed or South as a country is classified as underdeveloped by the World Bank. This basic Log-linear model (Hill R. C. Griffiths, W. E., and Lin G. C. 2012: 71) is as follows:

$$\ln (rgdpp)_{it} = \beta + \alpha_1 fdi_{it} + \alpha_2 nar_{it} + \alpha_3 oil_{it} + \alpha_4 INST.Q_{it} + \varepsilon_{it} \quad (1).$$

All variables have been described in the previous sections, and ε is the statistical error term.

Traditionally, this model opens to the possibility of a dynamic panel model, because of its long-run behavior as it analyses few countries (10 countries in the whole model, and 5-5 countries in the 2 Submodels) for 20 years. This means that $T\ (= 20) > N\ (10, 5, 5)$.

First of all, a test of whether the fixed-effects model or random effects model is appropriate had been performed. The results of Hausman test have shown that the fixed-effects model should be used. Furthermore, as the dynamic aspects of the model can be concerned, many research papers have attested that in most of the time; FDI, natural resources, and institutional quality indicators may suffer from a potential problem of endogeneity (E. Asiedu 2013: 15; E. Asiedu and D. Lien 2010: 103; C. Brunnschweiler 2006: 8).

Consequently, in order to investigate the problem of endogeneity and decide which method should be used; the results of the endogeneity test on different regressors using the Hausman test of endogeneity (Cameron, A. C., and Trivedi, P. K., 2010: 444) are presented in the small table below.

TABLE 2: RESULTS OF ENDOGENEITY TESTS

Regressor	All	Fdi	nar	oil	gva	psa	ge	rq	rol	coc
x^2-Statistic	23.01*	7.92*	22.22*	1.27	23.01*	2.64	4.90**	3.10***	9.80*	0.13

Notes: *, **, and *** means statistically significant at 0.01 (p-value < 1%), 0.05 (p-value < 5 %), and 0.1 (p-value < 10%) levels, respectively.

From the previous results, only *oil*, *psa*, and *coc* are not probably correlated with the error term. Other regressors do not reject the probability of endogeneity under 1% (*), 5% (**), and 10% (***) levels of significativity. They may at least be correlated with the error term (i.e. they are relatively endogenous). This needs to be fixed for the pooled OLS regressions.

Being aware of the effects of the problem in the pooled OLS models, the use of dummy variables technique (Greene, 2012: 440) in order to fully protect models from such a kind of problem is adopted. The use of this technique against that of first-differenced is chosen due to the fact that the latter should have harmful effects by annihilating the aspect of long-run between regressand and regressors. This consequence of using the technique of first difference is noticed by D. N. Gujarati and D. C. Porter (2009: 601) as follows: " In general, when we differentiate a variable, we remove the long-run component from that variable. What is left is the short-run value of that variable."

However, in the fixed-effects models, there is no need to worry about this problem of endogeneity; models have characteristics of long panels. For this, E. Mileva (2007: 3) states that: "In large-T panels a shock to the country's fixed effect, which shows in the error term, will decline with time. Similarly, the correlation of the lagged dependent variable with the error term will be insignificant." (Mileva, 2007:3). So, the analysis begins with the pooled Ordinary Least Squares (OLS) or population-averaged regressions, then it diagnoses the specific fixed-effects models.

6.3.2 Population-Averaged Models And Regressions Results

For the pooled OLS panel models, 3 models are estimated. First, a model for the 10 countries (called ALL), second for the 5 undeveloped countries (called SOUTH), and the 3rd model for the group of the 5 developed countries (called NORTH). The model (1) is extended to include the dummy variables that help to capture specific effects within groups and countries. The models are as follows.

$$\ln (rgdpp)_{it}^{ALL} = \beta + \alpha_1 fdi_{it} + \alpha_2 nar_{it} + \alpha_3 oil_{it} + \alpha_4 INST.Q_{it} + \alpha_5 D_2 + \alpha_6 (D_2 * INST.Q_{it}) + \alpha_7 D_{3it} + \alpha_8 D_{4it} + \alpha_9 D_{5it} + \varepsilon_{it} \quad (2)$$

$$\ln (rgdpp)_{it}^{SOUTH} = \beta + \alpha_1 fdi_{it} + \alpha_2 nar_{it} + \alpha_3 oil_{it} + \alpha_4 INST.Q_{it} + \alpha_5 D_2 + \alpha_6 (D_2 * INST.Q_{it}) + \alpha_7 D_{3it} + \alpha_8 D_{4it} + \alpha_9 D_{5it} + \varepsilon_{it} \quad (3)$$

$$\ln (rgdpp)_{it}^{NORTH}=\beta+\alpha_1 fdi_{it}+\alpha_2 nar_{it}+\alpha_3 oil_{it}+\alpha_4 INST.Q_{it}+\alpha_5 D_2+\alpha_6(D_2 * INST.Q_{it})+ \alpha_7 D_{3it}+\alpha_8 D_{4it}+\alpha_9 D_{5it}+\varepsilon_{it} \quad (4)$$

Besides the variables which have been explained previously, the models include 4 dummy variables. The letter "D" stands for "Dummy". For each kind of groupage; the number of dummies to include in the models in order to avoid the "*dummy-variable trap*" (Gujarati and Porter, 2009: 597) is reduced. (The "*dummy-variable trap*"; is the situation of perfect collinearity).(Gujurati and Porter, 2009:597).

The D_2 stands for distinguishing the North group from the South group of countries. It takes 1 as value for developed countries, and 0 for underdeveloped countries. D_3, D_4, and D_5 are related to the groupage of the Natural Resource Governance Institute (NRGI), which ranges countries and gives a color to them by their Resource Governance Index (RGI) scores. The Index assigns a numerical score to each country and divides them into four performance ranges-*satisfactory (71-100, marked in green), partial (51-70, yellow), weak (41-50, orange) and failing (0-40, red)*[6].

The group of 5 countries of the South is classified by the NRGI into the group of the 58 countries which produce 80% of natural resources of the World, while the group of 5 North countries does not appear in the group of 58 countries. The South countries have following scores:

- Ghana: 63 (in the *partial* group),
- Liberia: 62 (in the *partial* group),
- Nigeria: 42 (in the *weak* group),
- DRC: 39 (in the *failing* group) and
- Zimbabwe: 31 (in the *failing* group).

For a technical seek, another group called *none* for the group of 5 North countries that are not classified by the NRGI in order to include dummy variables related to these 4 groups has been created as follows:

Firstly, D_3 takes the value of 1 if the country is in the *partial* group of countries, and 0 otherwise. Secondly, D_4 takes the value of 1 if the country is in the *weak* group of countries, and 0 otherwise. Thirdly, D_5 takes the value of 1 if the country is the *failing* group of countries, and 0 otherwise. Finally, the *none* group is sacrificed in order to avoid the dummy variable-trap problem evoked previously.

By the way, there is no need of including the dummy variables in the fixed-effects models presented after the population-averaged regression models as it has been previously noticed. The analysis begins with the analysis of the population-averaged models. The results of population-average models are presented in the tables below.

[6] http://www.resourcegovernance.org/resource-governance-index/report#fig1

TABLE 3: NATURAL RESOURCES, FDI, INSTITUTIONAL QUALITY, AND ECONOMIC GROWTH (ALL COUNTRIES'MODELS BY REGIONAL DEVELOPMENT DIMENSION AND BY RGI GROUPAGE)

Panel:	(1)	(2)	(3)	(4)	(5)	(6)
constant		7.82* (27.45)	7.77*(30.47)	7.73*(31.75)	7.82*(33.53)	7.82*(28.18)
fdi	7.70*(29.37)	0.003**(2.42)	0.003*(2.86)	0.003**(2.54)	0.002**(2.38)	0.003**(2.59)
nar		-0.015*(-6.01)	-0.014*(-5.46)		-0.014*(-6.39)	-0.014*(-5.75)
oil	0.03* (2.80)	0.002 (0.38)	0.004 (0.73)	-0.013*(-5.70)	0.0056(1.22)	0.004 (0.88)
gva	-0.012*(-5.11)	…	…	0.004(0.89)	…	…
d2		3.15*(9.78)	3.1*(8.79)		2.43*(5.28)	
d2gva	0.004 (4.02)	…	…	…	…	…
d3		-1.1*(-3.26)	-0.94*(-3.17)	3.1*(10.23)	-0.89*(-3.18)	3.015*(7.69)
d4		-1.33*(-4.01)	-1.2*(-4.08)	…	-1.2*(-4.44)	…
psa		0.161*(3.68)	…	-0.75**(-2.53)	…	-0.97*(-3.03)
d2psa	0.37*(8.07)	-0.32*(-.86)	…	-1.13*(-3.90)	…	-1.3*(-4.08)
ge		…	0.285*(3.87)	…	…	…
d2ge	2.81* (7.27)	…	-0.306**(-2.15)	…	…	…
rq		…	…	…	…	…
d2rq	-0.152 (-0.86)	…	…	…	…	…
rol		…	…	…	…	…
d2rol	-0.82**(-2.55)	…	…	0.34*(6.79)	0.31*(6.92)	…
coc		…	…	-0.326*(-3.54)	-0.0067(-0.03)	…
d2coc	-1.31*(-4.12)	…	…	…	…	…
	…			…		…
	…			…		…
	…			…		…
	…			…		…
	…			…		…
	…			…		…
	…			…		…
	…			…		…
	…			…		…
	…			…		…
	…			…		…
						0.325*(5.48)
						-0.326**(-2.13)
x^2	1028.2*	949.1*	1190.1*	1203.9*	1203.98*	1361.88*
$p-value$	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Notes: All models are population-averaged. *, and ** means statistical significant at 0.01 (p-value < 1%), and 0.05 (p-value < 5 %) levels, respectively. In the parentheses are presented Wald statistics.

The results from all models presented in the table 3 show that FDI has significant positive effects on economic growth in all countries. Natural resources expose negative effects, which are statistically significant. This seems to confirm the theoretical view that natural resource abundance leads to a curse rather than a contribution to economic development. All models do not give information about what is the effect of petroleum on economic growth. This variable exhibits a positive sign which is not statistically significant.

As far as institutional quality is concerned, all the six indicators and variables of institutional quality exhibit positive effects on economic growth. Meaning that an improvement of institutional quality is a need to promote economic development. But, what is most interesting is that these variables exhibit negative effects when they are considered geographically. This means that the interactions of these variables with the geographical dummy variable need some distinctions which could be made such as separating the group of developed countries from that of undeveloped countries. The results of the South models are presented in the table 4 below.

TABLE 4: NATURAL RESOURCES, FDI, INSTITUTIONAL QUALITY, AND ECONOMIC GROWTH IN THE SOUTH GROUP OF COUNTRIES

Panel:	(1)	(2)	(3)	(4)	(5)	(6)
constant	7.7*(27.72)	7.83* (23.20)	7.87*(31.426)	7.9*(53.58)	7.85*(35.85)	7.85*(27.94)
fdi	0.003** (2.01)	0.003***(1.82)	0.003**(2.20)	-0.00009(-2.06)	0.002***(1.68)	0.003***(1.92)
nar	-0.012*(-4.18)	-0.015*(-4.61)	-0.012*(-3.63)	-0.01*(-3.72)	-0.014*(-5.05)	-0.013*(-4.43)
oil	0.003 (0.48)	0.002 (0.38)	-0.001(-0.19)	0.00005(0.01)	0.003(0.50)	0.002(0.26)
gva	…	…	…	…	…	…
d3	0.375*(6.47)	-1.1*(-3.26)	-1.13*(3.79)		-1.03*(-3.82)	
d4		-1.33*(-4.01)	-1.36*(-4.74)		-1.32*(-5.17)	…
psa	-0.9**(-2.57)	0.166*(2.90)	…	-0.72*(-3.83)	…	
ge	-1.35*(-4.01)	…	0.39*(4.15)	-1.23*(-7.32)	…	-1.11*(-3.26)
rq	…	…	…	…	…	-1.4*(-4.21)
rol	…	…	…	0.69*(24.91)	0.36*(6.26)	…
coc	…	…	…	…	…	…
	…			…		…
	…					…
						0.4*(4.71)
x^2	124.7*	72.52*	115.85*	124.01*	125.1*	157.25*
$p-value$	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Notes: All models are population-averaged. *, **, and *** means statistical significant at 0.01 (p-value < 1%), 0.05 (p-value < 5 %), and 0.1 (p-value < 10%) levels, respectively. In the parentheses are presented Wald statistics.

Table 4 shows the results of population averaged regressions of natural log of real GDPP on FDI, natural resources, oil, and institutional quality variables of the underdeveloped group of countries by considering their scores of natural resources management. The 5th dummy D_5 variable is omitted because of collinearity.

Except the 4th model, which exhibits an insignificant negative effect of FDI; all the remaining models strengthen the positive effect of FDI on economic growth. The level of its significativity is 10% as well.

The curse of natural resources hypothesis on economic development persists, and has a strong impact on real GDP/capita. Furthermore, this effect relates to the mode of management of natural resources in the Southern group of countries. The effect of impartiality or failing to well-managing the abundant natural resources for the promotion of economic development is marked by a persistent and significant negative sign of D_3 and D_4 dummies. The variable *oil* is with a positive sign, however, it does not exhibit any significant effect on economic development.

The South models reinforce the necessity of good institutional quality in order to boost economic development in the group of underdeveloped countries. All the institutional quality variables exhibit positive and significant effects on real GDP/capita. The level of significativity of their coefficients is 1%. This means that the quality of institutions is the major problem in the group of underdeveloped countries.

Before concluding about the information given by the population-averaged models, the results from North models regressions are also presented. They are shown in the following table.

TABLE 5: NATURAL RESOURCES, FDI, INSTITUTIONAL QUALITY, AND ECONOMIC GROWTH IN THE NORTH GROUP OF COUNTRIES

Panel:	(1)	(2)	(3)	(4)	(5)	(6)
constant	10.62*(58.37)	11.00*(109.83)	11*(75.73)	10.81*(94.97)	10.36*(45.15)	10.93*(63.57)
fdi	0.002(1.30)	0.0013(0.95)	0.001(0.77)	0.001(0.76)	0.001(0.76)	0.0012(0.88)
nar	-0.1(-1.57)	-0.1(-1.64)	-0.1(-1.60)	0.013(0.92)	-0.011***(-1.79)	-0.10***(-1.67)
oil	0.2** (2.07)	0.2**(2.00)	0.205**(2.36)	-0.11***(-1.71)	0.185**(2.20)	0.20**(2.30)
gva	…	…	…	0.202**(2.30)	…	…
psa	0.15(1.37)	-0.13**(-2.33)	…	…	…	…
ge	…	…	-0.93(-1.35)	…	…	…
rq	…	…	…	…	…	…
rol	…	…	…	0.02 (0.43)	0.26**(2.26)	…
coc	…	…	…	…	…	…
	…			…		…
						-0.05(-0.58)
x^2	30.73*	35.56*	30.86*	28.60*	34.72*	28.82*
$p-value$	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Notes: All models are population-averaged. *, **, and *** means statistical significant at 0.01 (p-value < 1%), 0.05 (p-value < 5 %), and 0.1 (p-value < 10%) levels, respectively. In the parentheses are presented Wald statistics.

The results of North shown in the table 5 do not give any information about FDI's effect on economic growth in the group of developed countries. The variable exhibits a positive, but insignificant effect on economic development.

This may lead to the thinking that this models do not include as much as control variables. However, the use of the model as it is stated; is based on the motivation of fixing the models to the main questions that nourished current intuitions which should be clearly seen throughout many questions along with this paper. Briefly, the general idea is relatively testing the direction of the effects rather than testing the magnitude of effects.

Models (1), (2), and (3) exhibit a negative effect of natural resources on real GDP/capita, but without any level of significativity. However, models (4), (5), and (6) provide a negative and weak (at 10%) effect of natural resources on economic development in the group of developed countries. This returns to the hypothesis of the curse of natural resources which is witnessed before.

All regressions for the North group of countries exhibit a positive and significant effect of petroleum on real GDP/capita. This means that *oil* has a positive impact on real GDP/capita of developed countries. In addition, according to the institutional quality variables, only two variables expose significant effects. These variables are political stability and absence of Violence/Terrorism (*psa*) in the 2nd model, and the Rule of Law (*rol*) in the 5th model.

The *psa* variable exposes a negative and significant sign at 5%. This leads us to another information about this variable. This implicit information may be stated after giving responses to these following questions: Why these indicators of institutional quality do not have the total scores in developed countries such these of the models? Do these countries have perfect institutions or shall it be admitted that political instability such as violence or terrorism may occur even in developed countries?

To answer the questions and judge the signs affected by *psa* and *rol* variables, we recall that these six indicators are indicators of "likelihood". Obviously, this means that, for example, even if there are no political instability and serious violence in a given developed country, it does not mean that there cannot be another kind of violence or terrorism likelihood. This leads us to say that if the likelihood of violence or terrorism increases in developed countries, the real GDP/capita will decrease and vice versa. In addition, if the rule of law in the group of developed countries is improved, the real GDP/capita would responsively increase.

The population-averaged models give information that the separation of the sample into North and South is a need so that it can conclude on different effects of the variables of interests. In the South, the models suggest that FDI attraction and institutional quality improvement may be positively and significantly related to economic development in the African underdeveloped countries. All the models for the South group of countries do not judge about the effects of abundance of

oil on real GDP/capita. Moreover, the curse of natural resources hypothesis persists in the Southern group of countries. This curse of natural resources is censured in rich-natural resources and underdeveloped countries. This may be relatively suspected to be coming from the wrong resources managerial policies of institutions available. This state of thinking is furthermore tested by the interactions of natural resources and institutional quality variables in the next section dedicated to fixed-effects models.

In the North, FDI exposes a positive effect which is not significant. The curse of natural resources disappears in some models, but has a weak level of significativity. *Oil* exhibits a persistent positive effect on real GPP/capita. It contributes to economic development in the group of developed countries, while it does not exhibit any significant effect on economic growth in the group of underdeveloped countries. This lets us suspect if this variable may or may not be contributing to boosting economic growth in the Southern group of countries. What if it was to be correlated with institutional quality? Political stability and absence of violence/terrorism's likelihood increase leads to a decrease of real GDP/capita and vice versa. If the rule of law is improved, the real GDP/capita would be increased. Generally, many institutional problems are more censured in underdeveloped countries rather than in developed countries.

6.3.3 The Fixed-Effects Models and Regressions Results

Does Institutional Quality help to mitigate the theoretical Curse of Natural Resource on Economic Growth in the group of developed as well as in the group of underdeveloped countries?

In order to give answer to these questions, estimations of the fixed-effects models are done as it has been introduced in the previous sections. Then, the results are presented in different tables below.

TABLE 6: INTERACTIONS OF NATURAL RESOURCES AND INSTITUTIONAL QUALITY IN THE SOUTH AND NORTH GROUP OF COUNTRIES

Panel:	(1)	(2)	(3)	(4)	(5)	(6)
fdi	0.003*	0.003*(2.75)	0.0022**(2.04)	0.003**(2.48	0.003*(2.70)	0.0024**(
nar	(3.13)	-0.008(-1.62)	0.014*(2.68)	)	-0.013*(-3.60)	2.29)
oil	-0.008*(-	0.0007(0.13)	-0.013**(-2.26)	-0.002(-0.51)	0.003(0.62)	-0.012(-
	1.98)			-0.004(-0.80)		0.31)
gva	0.0004	…	…		…	0.00045(
gvanar	(0.09)	…	…	…	…	0.09)
				…		
psa	0.30*(3.69)	0.021(0.30)	…		…	…
psanar	0.0016(0.66	0.003(0.30)	…	…	…	…
	)			…		
ge		…	-0.064(-0.89)		…	…
genar	…	…	0.017*(5.89)	…	…	…
	…			…		
rq		…	…		…	…
rqnar	…	…	…		…	…
	…			0.10***(1.78)		
rol		…	…	0.01*(3.13)	0.3*(3.78)	…
rolnar	…	…	…		-0.0002(-0.11)	…
	…			…		
coc		…	…	…	…	…
cocnar	…	…	…		…	…
	…			…		
				…		0.031(0.3
	…					6)
	…					0.01*(3.6
						2)
F-test	102.54*	135.55*	100.97*	111.80*	95.03*	124.18*
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ρ (rho)	0.99	0.99	0.99	0.99	0.99	0.99

Notes: All models are fixed-effects. *, **, and *** means statistical significant at 0.01 (p-value < 1%), 0.05 (p-value < 5 %), and 0.1 (p-value < 10%) levels, respectively. In the parentheses are presented Fisher statistics. ***ρ*** (rho) is the percentage of the variation that is explained by the individuals specific effects. It is more than 60 % in all the models. This shows that the models are good. Then ρ is not idiosyncratic.

All the results from above table enhance the positive effects of FDI on real GDP/capita in all models. Models (1) and (5) give a negative and significant effect of natural resources on economic growth without separating the groups. The 3rd model exposes a positive and significant effect of natural resources on economic growth. This shows different effects from that of the pooled OLS regressions, and stresses the importance of institutional quality to desintoxicate the curse of natural

resources on economic growth. It offers even more information about the effects of *oil* on economic growth. It is noticed that in the model (3), *oil* has a negative and significant effect while other models do not provide any significant effect of this variable.

Two variables of institutional quality *gva* and *rol* are positively significant without interactions with natural resources. However, they are not significant with the interactions. This is shown in models (1) and (5). Interaction between political stability *psa* and natural resources does not exhibit any significant effect on economic growth. The interactions between government effectiveness *ge* with natural resources and that of control of corruption *coc* with natural resources exhibit positive and significant effects on economic growth. This means that they may contribute to mitigate the curse of natural resources on economic growth. These different effects lead to further information if the regressions are considered under the two Submodels. Results from the two Submodels are given in tables 8 and 9.

TABLE 7: INTERACTIONS OF OIL AND INSTITUTIONAL QUALITY IN THE NORTH AND SOUTH GROUP OF COUNTRIES

Panel:	(1)	(2)	(3)	(4)	(5)	(6)
fdi	0.003*	0.0032*(2.82)	0.0036*(3.34)	0.003*(2.91)	0.003*(2.79)	0.003*(3.00)
nar	(3.23)	-0.013*(-4.91)	-0.014*(5.23)	-0.013*(-4.82)	-0.013*(-5.41)	-0.013*(-5.18)
oil	-0.01*(-4.19)	-0.012***(-1.72)	0.05*(4.23)	0.011(1.53)	0.03*(3.24)	0.32*(3.32)
	0.006 (0.94)					
gva			…		…	
gvaoil		…	…	…	…	
	0.325*(6.55)	…		…		
psa	0.004(1.10)		…		…	…
psaoil		0.15*(3.37)	…	…	…	…
	…	-0.01*(-3.01)		…		
ge	…		0.12***(1.88)		…	…
geoil		…	0.052*(4.43)	…	…	…
	…	…		…		
rq	…		…		…	…
rqoil		…	…	0.21*(4.56)	…	…
	…	…		0.01(1.56)		
rol	…		…		0.245*(5.32)	…
roloil		…	…	…	0.022*(3.37)	…
	…	…		…		
coc	…		…		…	…
cocoil		…	…	…	…	…
	…	…		…		
	…					0.22*(3.99)
						0.03*(3.58)
***F*-test**	291.09*	303.51*	147.68*	162.79*	164.40*	194.99*
***p*-value**	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ρ (rho)	0.99	0.99	0.99	0.99	0.99	0.91

Notes: All models are fixed-effects. *, **, and *** means statistical significant at 0.01 (p-value < 1%), 0.05 (p-value < 5 %), and 0.1 (p-value < 10%) levels, respectively. In the parentheses are presented Fisher statistics. ***ρ*** (rho) is the percentage of the variation that is explained by the individuals specific effects. It is more than 60 % in all the models. This shows that the models are good. Then ρ is not idiosyncratic.

Table 7 presents the results of underdeveloped and developed countries fixed-effects models with interactions between *oil* and the six variables of institutional quality. The results from the estimations show that FDI has positive effects on economic growth in the 10 countries during the period of study. *Oil* is individually positive and significant in the models (3), (5), and (6). However, it is positive and insignificant in the models (1) and (4), and negatively significant in the 2nd model.

The introduction of the interaction terms between *oil* and the institutional quality variables presents different effects based on which variable from the six institutional variables is included. For instance, the interaction of *oil* with government effectiveness *ge*, rule of law *rol*, or control of corruption *coc* leads to positive and significant effects of petroleum on economic development. The interaction of *oil* with voice and accountability *gva* or with regulatory quality *rq* exhibits a positive and insignificant effect on economic development. That of *oil* and political stability *psa* exhibits a negative and significant effect on economic development. The last effect does not oppose the theoretical prediction due to the fact that

an increase in political instability's likelihood leads to a decrease in economic transactions. The results show that *oil* is correlated with institutional quality variables.

In the table 8 below, present are the results of interactions between natural resources and institutional quality variables of the group of underdeveloped countries. As it can be seen, the curse of natural resources endlessly persists if there are not the interactions of natural resources with the institutional quality variables.

TABLE 8: INTERACTIONS OF NATURAL RESOURCES AND INSTITUTIONAL QUALITY IN THE SOUTH GROUP OF COUNTRIES

Panel:	(1)	(2)	(3)	(4)	(5)	(6)
fdi	0.003**	0.0035**(2.08)	0.002(1.57)	0.003**(2.03	0.0033**(2.15)	0.003***(
nar	(2.29)	-0.016***(-	0.013***(1.81)	)	-0.015*(-3.01)	1.71)
oil	-0.009*(-	1.99)	-0.013***(-1.77)	-0.008(-1.34)	0.002(0.28)	-0.003(-
	1.71)	0.00003(0.00)		-0.003(-0.41)		0.47)
gva			…		…	-0.0003(-
gvanar	0.0005(0.08	…	…	…	…	0.04)
	)	…		…		
psa			…		…	…
psanar	0.35**(2.84)	0.18(1.40)	…	…	…	…
	0.0003(0.10	-0.001(-0.31)		…		
ge	)		-0.023(-0.17)		…	…
genar		…	0.016*(3.91)	…	…	…
	…	…		…		
rq	…		…		…	…
rqnar		…	…	0.30**(2.58)	…	…
	…	…		0.002(0.63)		
rol	…		…		0.36*(3.10)	…
rolnar		…	…	…	-0.0014(-0.56)	…
	…	…		…		
coc	…		…		…	…
cocnar		…	…	…	…	…
	…	…		…		
	…					0.086(0.5
						9)
	…					0.008**(2
	…					.00)
F-test	37.10*	27.49*	36.71*	29.85*	32.21*	40.05*
p-value	0000	0.0000	0.0000	0.0000	0.0000	0.0000
ρ (rho)	92	0.90	0.91	0.89	0.89	0.91

Notes: All models are fixed-effects. *, **, and *** means statistical significant at 0.01 (p-value < 1%), 0.05 (p-value < 5 %), and 0.1 (p-value < 10%) levels, respectively. In the parentheses are presented Fisher statistics. ***ρ*** (rho) is the percentage of the variation that is explained by the individuals specific effects. It is more than 60 % in all the models. This shows that the models are good. Then ρ is not idiosyncratic.

All models of the table 8 do not reject the hypothesis that natural resources may be correlated with the institutional quality variables. The results are somehow similar to those of the interactions of *oil* and institutional quality variables. Interactions of natural resources with government effectiveness *ge* or with control of corruption *coc* lead to positive and significant effects on economic development.

The interactions of natural resources with voice accountability *gva* or regulatory quality *rq* exhibit positive, but insignificant effects on economic growth. They do not reject the positive effects, nor do they confirm them. Similarly, the interactions of natural resources with political stability *psa* or rule of law *rol* expose negative, but with insignificant effects on economic growth. They do not reject the positive effects, nor do they confirm them. These results lead us to conclude, and thus in accordance with the statement of the Revenue Watch Institute cited before, that the institutional quality is a matter in the group of underdeveloped and rich-natural resources countries. The establishment of good institutions is a willing to help natural resources to positively affect economic development. The results of the same interactions of *oil* with institutional quality variables in the group of underdeveloped countries are presented in the table 9 below.

TABLE 9: INTERACTIONS OF OIL AND INSTITUTIONAL QUALITY IN THE GROUP OF SOUTH COUNTRIES

Panel:	(1)	(2)	(3)	(4)	(5)	(6)
fdi	0.003**(2.32)	0.0032**(2.05)	0.0037**(2.48)	0.003**(2.16)	0.003**(2.15)	0.003**(2.20)
nar	-0.01*(-3.16)	-0.012*(-3.41)	-0.012*(-3.69)	-0.011*(-3.39)	-0.013*(-4.16)	-0.013*(-3.87)
oil	0.004(0.48)	-0.02**(-2.10)	0.062*(3.62)	0.0036(0.36)	0.03**(2.24)	0.30**(2.21)
gva	…	…	…	…	…	…
gvaoil	0.324*(5.03)	…	…	…	…	…
psa	0.003(0.60)	0.22*(3.52)	…	…	…	…
psaoil	…	-0.016*(-2.98)	…	…	…	…
ge	…	…	0.3*(2.79)	…	…	…
geoil	…	…	0.074*(3.97)	…	…	…
rq	…	…	…	…	…	…
rqoil	…	…	…	…	…	…
rol	…	…	…	0.35*(4.76)	0.26*(4.41)	…
roloil	…	…	…	0.005(0.61)	0.022**(2.42)	…
coc	…	…	…	…	…	…
cocoil	…	…	…	…	…	…
	…			…		
	…			…		0.28*(3.41)
						0.03**(2.47)
***F*-test**	48.33*	38.91*	35.85*	30.05*	35.58*	41.68*
***p*-value**	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ρ (rho)	0.92	0.90	0.93	0.89	0.90	0.91

Notes: All models are fixed-effects. *, **, and *** means statistical significant at 0.01 (p-value < 1%), 0.05 (p-value < 5 %), and 0.1 (p-value < 10%) levels, respectively. In the parentheses are presented Fisher statistics. ***ρ*** (rho) is the percentage of the variation that is explained by the individuals specific effects. It is more than 60 % in all the models. This shows that the models are good. Then ρ is not idiosyncratic.

The results presented in table above show that the interactions of *oil* with government effectiveness *ge*, rule of law *rol*, or with control of corruption *coc* present positive and significant effects on economic growth. The interactions of *oil* with voice accountability *gva* or with regulatory quality *rq* present positive and insignificant effects on economic growth.

The variable which must be interpreted as a likelihood of a country to face violence or terrorism *psa* states that an increase of population's fear of facing an eventual violence or terrorism leads to a negative and significant effect of *oil* on economic growth. This what is revealed in Nigeria. This country is one of the leading petroleum producer in the World but the persistent political instability leads to marginal effects of *oil* on the economic development of the country.

As a whole, institutional quality is relatively correlated with oil and natural resources in the group of underdeveloped countries. This suggests that any improvement of institutional quality will help people of the 5 underdeveloped countries to benefit from oil and natural resources rents.

Below, this paper presents the same regression results, but for the group of developed countries in the tables 10 and 11. In table 10, it is presented the results of the interactions of natural resources and institutional quality variables; and in the table 11, it is presented the results of interactions of *oil* and institutional quality variables.

TABLE 10: INTERACTIONS OF NATURAL RESOURCES AND INSTITUTIONAL QUALITY IN THE GROUP OF NORTH COUNTRIES

Panel:	(1)	(2)	(3)	(4)	(5)	(6)
fdi	0.002(1.33)	0.0004(0.29)	0.00009(0.72)	0.001(0.76)	0.0009(0.62)	0.0009(0.66)
nar	0.11(0.59)	-0.32*(-2.90)	-0.67*(-3.84)	0.1(0.47)	0.083(0.28)	-0.34(-1.55)
oil	0.16(1.59)	0.22**(2.30)	0.16***(1.79)	0.18***(1.80)	0.015(1.52)	0.13(1.20)
gva	0.22(1.61)	…	…	…	…	
gvanar	-0.12(-1.02)	…	…	…	…	
psa	…	-0.225*(-3.39)	…	…	…	…
psanar	…	0.02**(6.64)	…	…	…	…
ge	…	…	-0.31*(-3.49)	…	…	…
genar	…	…	0.27*(3.63)	…	…	…
rq	…	…	…	0.11(0.98)	…	…
rqnar	…	…	…	-0.10(-0.97)	…	…
rol	…	…	…	…	0.3**(1.99)	…
rolnar	…	…	…	…	-0.1(-0.55)	…
coc	…	…	…	…	…	…
cocnar	…	…	…	…	…	…
						-0.1(-1.00)
						0.12(1.23)
F-test	34.62*	54.61*	56.03*	39.97*	29.43*	50.14*
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ρ (rho)	0.81	0.85	0.86	0.80	0.80	0.82

Notes: All models are fixed-effects. *, **, and *** means statistical significant at 0.01 (p-value < 1%), 0.05 (p-value < 5 %), and 0.1 (p-value < 10%) levels, respectively. In the parentheses are presented Fisher statistics. ***ρ*** (rho) is the percentage of the variation that is explained by the individuals specific effects. It is more than 60 % in all the models. This shows that the models are good. Then ρ is not idiosyncratic.

From the table above, only the interactions of political instability likelihood *psa*, or government effectiveness *ge* with natural resources expose positive effects on economic growth. Others do not have any significant effects on economic growth. This leads us to think that the group of developed countries cares more about violence/terrorism and the rule of law. Then it also is needed to recall also that this group of countries contains countries which are not classified by the Revenue Watch Institute as rich-natural resource countries.

The results of interactions between *oil* and institutional quality variables exhibit the similar effects on economic growth as it can be seen throughout the table 11th. In addition, the special case of political instability likelihood *psa*, or government effectiveness *ge* with natural resources is strengthened.

TABLE 11: INTERACTIONS OF OIL AND INSTITUTIONAL QUALITY IN THE NORTH GROUP OF COUNTRIES

Panel:	(1)	(2)	(3)	(4)	(5)	(6)
fdi	0.002(1.24)	0.0005(0.35)	0.001(0.84)	0.001(0.87)	0.0008(0.53)	0.001(0.76)
nar	-0.01(-0.96)	-0.013***(-1.85)	-0.13***(-1.84)	-0.084(-1.16)	-0.07(-1.09)	
oil	0.3(1.00)	0.003(0.03)	-0.29(-1.23)	0.20(0.56)	0.44(1.03)	-0.1(-1.32)
gva	0.16*(5.03)		…	…	…	-0.12(-0.34)
gvaoil	-0.1(-0.50)	…	…	…	…	
		…				
psa	…		…	…	…	…
psaoil	…	-0.17*(-2.88)	…	…	…	…
		0.21**(2.25)				
ge	…		-0.17**(-2.18)	…	…	…
geoil	…	…	0.23**(2.22)	…	…	…
		…				
rq	…		…	0.01(0.27)	…	…
rqoil	…	…	…	-0.02(-0.09)	…	…
		…				
rol	…		…	…	0.27**(2.14)	…
roloil	…	…	…	…	-0.15(-0.71)	…
		…				
coc	…		…	…	…	…
cocoil	…	…	…	…	…	…
		…				
						-0.067(-0.71)
						0.12(0.86)
***F*-test**	36.48*	54.94*	49.79*	45.27*	29.51*	49.72*
***p*-value**	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ρ (rho)	0.81	0.84	0.83	0.81	0.80	0.81

Notes: All models are fixed-effects. *, **, and *** means statistical significant at 0.01 (p-value < 1%), 0.05 (p-value < 5 %), and 0.1 (p-value < 10%) levels, respectively. In the parentheses are presented Fisher statistics. ρ (rho) is the percentage of the variation that is explained by the individuals specific effects. It is more than 60 % in all the models. This shows that the models are good. Then ρ is not idiosyncratic.

Generally, the regression results from the fixed-effects models above show that an improvement of institutional quality helps to mitigate the curse of natural resources on economic growth. Once political institutions are production-friendly, natural resources as well as petroleum may have positive effects on economic development.

The models strengthen the accent put on almost all institutional quality indicators in the group of underdeveloped countries, and that the group of developed countries does relatively worry more about political instability such as the violence/terrorism's likelihood and government effectiveness than other institutional quality variables. This leads us to different political stances in the two groups of countries. Politics in the South group of countries worry more about almost all institutional quality variables, whereas the politics in the group of Northern countries worry more about government effectiveness as well as eventual political instability such violence or terrorism to occur.

Establishment of the political institutions that reduce corruption, improve the quality of law, reduce problems in contracts'execution, respect the voice of electors, and increase the quality of control of markets may, of course, permit natural resources to act positively on economic development in the group of rich-natural resources/oil and underdeveloped countries.

The models of poor-natural resources and rich countries may include other variables. This is because their models put a strong accent on the likelihood of political violence/terrorism or government effectiveness rather than lack of corruption control, lack of a strong rule of law, or lack of regulatory quality.

INTERACTIONS OF FDI, NATURAL RESOURCES AND OIL IN THE SOUTH AND NORTH GROUPS OF COUNTRIES: *Do Natural Resources help to attract FDI to Economic Growth in the group of developed as well as in the group of underdeveloped countries?*

In order to answer this question, the fixed-effects models introduced in the previous sections are estimated. The whole results are given in the table 12 below .

TABLE 12: INTERACTIONS OF FDI, NATURAL RESOURCES, AND OIL IN THE SOUTH AND NORTH GROUP OF COUNTRIES

Panel:	ALL (narfdi)	ALL (oilfdi)	SOUTH (narfdi)	SOUTH (oilfdi)	NORTH (narfdi)	NORTH (oilfdi)
fdi		0.003*(2.87)				
nar	0.0005(0.24)	-0.016*(-5.91)	-0.001(-0.19)	0.004**(2.32)	0.0012(0.73)	0.001(0.73)
oil	-0.016*(-5.77)		-0.013*(-4.27)	-0.016*(-4.42)	-0.08(-1.13)	-0.1(-1.17)
narfdi	0.006(1.23)	-0.01(-1.04)	0.006(0.91)	-0.01(-1.04)	0.17***(1.67)	0.17***(1.69)
oilfdi	…	…	0.0001(1.08)	…	0.0002(0.09)	…
	0.0001***(1.61)	0.004*(2.82	…	…	…	0.001(0.36)
	...			0.004**(2.29)		
F-test	464.23*	479.36*	26.69*	38.01*	49.05*	49.66*
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ρ (rho)	0.99	0.99	0.87	0.90	0.81	0.81

Notes: All models are fixed-effects. *, **, and *** means statistical significant at 0.01 (p-value < 1%), 0.05 (p-value < 5 %), and 0.1 (p-value < 10%) levels, respectively. In the parentheses are presented Fisher statistics. ρ (rho) is the percentage of the variation that is explained by the individuals specific effects. It is more than 60 % in all the models. This shows that the models are good. Then ρ is not idiosyncratic.

The results from the regressions without distinction between the two groups of countries confirm the positive role of natural resources as well as that of oil to attract FDI on economic development. However, the South models confirm only the positive effects of petroleum to attract FDI on economic growth. FDI inflows in the South group of countries are relatively more oil rents seekers than other natural resources rents seekers. None of the models confirms whether FDI in developed countries is related to natural resources or oil.

Conclusively, all things equal, the models affirm the objective of FDI to the oil rents seeking rather than other natural resource rents seeking in the group of underdeveloped countries. They do not judge about the latter effect and do not say anything about the main elements that attract FDI in developed countries.

INTERACTIONS OF FDI AND INSTITUTIONAL QUALITY IN THE SOUTH AND NORTH GROUP OF COUNTRIES: *Does Institutional Quality help to attract FDI on Economic Growth in the group of developed as well as in the group of underdeveloped countries?*

In order to answer this question, estimations of the fixed-effects models are done as it has been noticed previously. The results for whole models are presented table 13 below. Then, the analysis continues with the study of those of the South group of countries for which results are given in the table 14. Finally, the regressions results for the Northern group of countries are given in the table 15.

TABLE 13: INTERACTIONS OF FDI AND INSTITUTIONAL QUALITY IN THE SOUTH AND NORTH GROUP COUNTRIES

Panel:	(1)	(2)	(3)	(4)	(5)	(6)
fdi	0.003*(2.70	0.0043*(2.68)	0.004*(2.94)	0.003**(2.59	0.0033**(2.47)	0.004*(2.
nar	)	-0.014*(-5.14)	-0.014*(-4.88)	)	-0.013*(-5.01)	95)
oil	-0.01*(-4.06)	0.0024(0.44)	0.003(0.62)	-0.012*(-	0.003(0.65)	-0.013*(-
	0.001(0.32)			4.75)		4.80)
gva		…	…	0.003(0.57)	…	0.003(0.5
gvafdi	0.35*(7.71)	…	…		…	2)
	0.000(0.01)			…		
psa		0.1**(1.99)	…	…	…	…
psafdi	…	0.001(0.91)	…		…	…
	…			…		
ge		…	0.16**(2.37)	…	…	…
gefdi	…	…	0.0005(0.61)		…	…
	…			…		
rq		…	…	…	…	…
rqfdi	…	…	…		…	…
	…			0.224*(4.96)		
rol		…	…		0.29*(6.22)	…
rolfdi	…	…	…	0.0004(0.48)	0.0004(0.55)	…
	…					
coc		…	…	…	…	…
cocfdi	…	…	…	…	…	…
	…					
				…		0.0262*(
				…		4.56)
						0.001(0.7
						5)
***F*-test**	309.39*	334.25*	148.82*	175.48*	170.19*	195.53*
***p*-value**	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ρ (rho)	0.99	0.99	0.99	0.99	0.99	0.99

Notes: All models are fixed-effects. *, **, and *** means statistical significant at 0.01 (p-value < 1%), 0.05 (p-value < 5 %), and 0.1 (p-value < 10%) levels, respectively. In the parentheses are presented Fisher statistics. ***ρ*** (rho) is the percentage of the variation that is explained by the individuals specific effects. It is more than 60 % in all the models. This shows that the models are good. Then ρ is not idiosyncratic.

The results from the whole models do not give any information about the attraction of FDI by institutional quality variables. They do not judge whether FDI correlates with institutional quality or not. Furthermore, they do not even confirm which of the institutional indicator is likely more perceived by foreign investors.

However, the results shown in the table 14 from the models of the underdeveloped group of countries give significant and interesting intuitions. Four of the institutional quality variables are strongly correlated with FDI. The models confirm that an improvement of government

effectiveness *ge*, regulatory quality *rq*, rule of law *rol*, and control of corruption *coc* is likely more to have a desirable attraction of FDI to the economic growth of the group of underdeveloped countries. The two remaining institutional quality voice and accountability and political instability likelihood of violence/terrorism indicators have positive but insignificant effects. They do not reject the hypothesis of well-perception of foreign investors. In addition to this, it has previously seen that the perception of political institutional quality of African countries by Chinese investors may differ from that of Western investors. Than it is not possible to do further explanations since there is not any information about different degrees of perception of institutional variables by foreign investors per their origins. The results of interactions between FDI and institutional quality variables are presented in the table 14 and 15 below in order to assess the role of institutions to attract FDI on economic development.

TABLE 14: INTERACTIONS OF FDI AND INSTITUTIONAL QUALITY IN THE SOUTH GROUP OF COUNTRIES

Panel:	(1)	(2)	(3)	(4)	(5)	(6)
fdi	0.005(1.31)	0.013*(2.89)	0.034*(5.06)	0.017*(3.26)	0.016*(3.40)	0.015*(3.41)
nar	-0.01*(-3.02)	-0.012*(-3.37)	-0.017*(-4.86)	-0.012*(-3.69)	-0.013*(-4.25)	-0.014*(-4.11)
oil	0.0003(0.05)	-0.000(-0.01)	0.004(0.64)	-0.001(-0.16)	0.002(0.27)	0.002(0.32)
gva	…	…	…	…	…	…
gvafdi	0.34*(4.73)	…	…	…	…	…
psa	0.001(0.45)	0.04(0.51)	…	…	…	…
psafdi	…	0.005(2.27)	…	…	…	…
ge	…	…	0.045(0.39)	…	…	…
gefdi	…	…	0.018*(4.58)	…	…	…
rq	…	…	…	…	…	…
rqfdi	…	…	…	0.24*(2.93)	…	…
rol	…	…	…	0.01*(2.76)	0.20*(2.89)	…
rolfdi	…	…	…	…	0.01*(2.87)	…
coc	…	…	…	…	…	…
cocfdi	…	…	…	…	…	…
	…			…		
	…					0.18**(1.84)
						0.01*(2.81)
***F*-test**	42.61*	40.68*	39.77*	34.31*	36.82*	43.14*
***p*-value**	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ρ (rho)	0.92	0.91	0.90	0.91	0.91	0.91

Notes: All models are fixed-effects. *, **, and *** means statistical significant at 0.01 (p-value < 1%), 0.05 (p-value < 5 %), and 0.1 (p-value < 10%) levels, respectively. In the parentheses are presented Fisher statistics. ***ρ*** (rho) is the percentage of the variation that is explained by the individuals specific effects. It is more than 60 % in all the models. This shows that the models are good. Then ρ is not idiosyncratic.

TABLE 15: INTERACTIONS OF FDI AND INSTITUTIONAL QUALITY IN THE NORTH GROUP OF COUNTRIES

Panel:	(1)	(2)	(3)	(4)	(5)	(6)
fdi	0.032(1.63)	0.012***(1.91)	0.015(1.41)	0.007(0.36)	-0.03***(-1.78)	-0.005(-0.70)
nar	-0.04(-0.63)	-0.01(-1.12)	-0.07(-0.98)	-0.08(-1.15)	-0.09(-1.27)	
oil	0.11(1.09)	0.15(1.56)	0.164(1.64)	0.17***(1.68)	0.16***(1.70)	-0.1(-1.33)
gva	0.20*(1.72)	…	…	…	…	0.19***(0.065)
gvafdi	-0.021(-1.55)	…	…	…	…	
psa		-0.062(-0.86)	…	…	…	…
psafdi	…	-0.0094***(-1.75)	…	…	…	…
	…					
ge			-0.07(-0.95)	…	…	…
gefdi	…	…	-0.008(-1.32)	…	…	…
	…	…				
rq			…	0.023(0.39)	…	…
rqfdi	…	…	…	-0.003(-0.30)	…	…
	…	…				
rol			…		0.14(1.08)	…
rolfdi	…	…	…	…	0.02***(1.84)	…
	…	…		…		
coc			…		…	…
cocfdi	…	…	…	…	…	…
	…	…		…		
						-0.07(-0.70)
						0.0037(0.88)
F-test	36.90*	49.61*	45.53*	43.90*	31.25*	49.83*
p-value	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
ρ (rho)	0.82	0.82	0.82	0.81	0.80	0.81

Notes: All models are fixed-effects. *, **, and ** *means statistical significant at 0.01 (p-value < 1%), 0.05 (p-value < 5 %), and 0.1 (p-value < 10%) levels, respectively. In the parentheses are presented Fisher statistics. ***ρ*** (rho) is the percentage of the variation that is explained by the individuals specific effects. It is more than 60 % in all the models. This shows that the models are good. Then ρ is not idiosyncratic.

In the tables above are presented the results of the interactions between FDI and the six variables of political institutions in the group of rich-natural resources and underdeveloped countries (Table 14) as well as in the group of poor-natural resources and developed countries (Tables 15).

From the table 14, except the interactions of FDI, the political stability (*psa*) and government effectiveness (gve); almost all the interactions of FDI and institutional quality variables expose positive and statically significant effects on economic growth in the group of rich-natural resources and underdeveloped countries. This means that these countries have to fix their instutions problems in order to attract FDI on their economies.

The results from the regression models of the group of developed countries presented in the table 15 reveal that foreign investors are more likely to be informed about the political instability likelihood (*psa*) and the state of rule of law (*rol*). An increase of political instability likelihood such as violence or terrorism is more likely to negatively affect the decisions of foreign investors. These negative decisions about not investing induced by the fear of political instability have, in return, negative effects on economic growth of these countries.

For further information, matrices of autocorrelation are given in the appendix. Three matrices are presented for the whole model (matrix 1), for the model of the group of underdeveloped countries (matrix 2) and for the that of the group of developed countries (matrix 3). The results from the whole model presented in matrix 1 that show all independent variables are correlated with the dependent variable. The matrix 2 of the group of undeveloped countries states also that all dependent variables are correlated with the devependent variable; whereas the matrix of the group of develepoed countries shows that only three independent variables are correlated with the dependent variable. These variables are: voice and accountability (gva), regulatory quality (rq) and rule of law (rol). All correlation relationships among variables are considered at 5% or 10% as it has shown throughout the matrices.

CONCLUSIONS

Using the OLS estimators and relying on the fixed-effects models and the population-averaged models augmented by dummy variables, this paper compares the effects of natural resources, FDI and the quality of institutions on economic development in a group of rich-natural resources and underdeveloped countries and in a group of poor-natural resources and developed countries from 1996 to 2015. In addition, it comparatively assesses the role of natural resources and institutions to reduce the natural resources'negative effects as well as their role to attract FDI to the economies of the two groups during the period of study.

The results of population-averaged models and those of the fixed-effects models lead to almost the same directions. However, they are likely to differ a bit when it comes to separate countries into the two groups. All models without interactions suggest that, all things equal, FDI and institutional quality have positive effects on economic development in the group of rich-natural resources and undeveloped countries from 1996 to 2015. Natural resources have negative effects on economic development, whereas oil does not have any significant effect on economic development in the countries of the group during the period of study. The '*natural resources curse*' persits in all models without the interactions of natural resources and institutional quality variables.

In the group of poor-natural resources and developed countries, FDI does not have any effect on economic development. This effect may be surprising enough. However, further thinkings may let one remember that the five developed countries (Denmark, Germany, Ireland, Finland, and Switzerland) of the sample are among the countries which take high rate of FDI outflows. Then, the negative effects of natural resources is present in the group of underdeveloped countries but with a negligeable effect. Petroleum affected positively the economic development of these countries from 1996 to 2015. Comparatively, while the six variables of institutional quality matter in the group of rich-natural resources and underdeveloped countries; the group of developed countries tracks the political instability and the improvement of rule of law rather than more focusing on government effectiveness, regulatory quality, voice accountability, and control of corruption. This group of countries is concerned by the likelihood of violence or terrorism to occur and the improvement of rule of law.

Results of regressions with interactions suggest that instutions helped to reduce the negative effects of natural resources on economic development in the group of rich-natural resources and underdeveloped countries from 1996 to 2015. Even the petroleum variable formerly insignificant becomes significant once interacted with natural resources. This leads to the suggestion that good quality of institutions helps to improve natural resources management and then boost of economic development in that group of countries during the period of study.

The interactions of natural resources and institutional quality variables do not exhibit any significant effect in the group of poor-natural resources and developed countries. This finding is not surprising due to the fact that the countries of this group are not classified by the Revenue Watch Institute in the group of 58 countries which are more rich in natural resources. The models strengthen the accent put on almost all institutional quality indicators in the group of underdeveloped countries, and that the group of developed countries does relatively worry more about political instability such as the violence/terrorism's likelihood and government effectiveness than other political variables.

To sum up, all of these results lead to different political stances in the two groups of countries. Countries of the Southern group worry more about almost all institutional quality variables, whereas the countries of Northern group worry more about government effectiveness as well as eventual political instability. The establishment of the political institutions that reduce corruption, improve the quality of law, reduce problems in contracts' execution, respect the voice of electors, and increase the quality of control of markets may, of course, permit natural resources to act positively on economic development in the group of rich-natural resources/oil and underdeveloped countries. In addition, findings confirm the positive role of oil to attract FDI in petroleum extraction rather than other natural resources'rents in the group of rich-natural resources and underdeveloped countries from 1996 to 2015. However, the models do not judge any effect of natural resources or oil to attract FDI to economic developement in the group of poor-natural resources and developed countries from 1996 to 2015.

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Genişletilmiş Özet

1980'li yıllardan itibaren dünya ekonomisi genelinde neo-liberal iktisat politikalarının yükselişe geçmesiyle başlayan finansal serbestleşme uygulamalarının bir uzantısı olarak sermaye hareketlerinin serbestleşmesi giderek artmıştır. Bu sürecin bir diğer uzantısı da doğrudan yabancı sermaye yatırımlarının artış eğilimine girmesidir. Küreselleşme olgusuyla birlikte, özellikle az gelişmiş ülkeler için gereksinim duyduğu sermayenin tamamını ya da en azından bir kısmını doğrudan yabancı yatırımlar yoluyla karşılayabilir mi sorusu daha çok sorulmaya başlanmıştır. Buna ek olarak doğrudan yabancı yatırımların ev sahibi ülke ekonomisine pozitif mi negatif mi katkısı olduğu da diğer bir merak uyandıran araştırma konusunu oluşturmaktadır.

Bu perspektifte doğal kaynakların bolluğu, kurumların kalitesi ve doğrudan yabancı yatırımların ekonomik büyüme üzerindeki etkisi önemli araştırma alanlarından biridir. Kurumların kalitesinin ve tasarrufun eksik olduğu ülkelerde doğrudan yabancı yatırımların ülkeye girmesiyle ekonomik büyümeye katkı yapabileceği konusunda farklı bakış açıları içeren teoriler bulunmaktadır. Bununla birlikte genel olarak doğrudan yabancı yatırımların bölgesel kalkınmada önemli bir unsur olduğu, ancak başarılı kalkınmanın anahtarının dengeli ve etkili iç tasarruf ve yatırımlar, nitelikli beşeri sermaye ile etkin makroekonomik ve yapısal politikalara da bağlı olduğu kabul edilmektedir (Gedikli, 2011:128).

Bu çalışmada doğal kaynakların, doğrudan yabancı yatırımların ve kurumların kalitesinin ekonomik büyüme üzerindeki etkileri 1996- 2015 yılları arasındaki dönem için incelenmiştir. Çalışmanın analiz kısmında fixed-effects modelleri ve kukla değişkenler kullanırak OLS tahmin modeli kurulmuştur. Bu çalışmada iki farklı ülke grubu seçilmiştir. Beş ülkeden oluşan birinci grupta doğal kaynak zengini ve az gelişmiş ülkeler olan Demokratik Kongo Cumhuriyeti, Gana, Liberya, Nijerya ve Zimbabwe yer almaktayken ikinci grupta ise Danimarka, Almanya, İrlanda, Finlandiya ve İsviçre gibi gelişmiş ancak doğal kaynak yönünden zayıf ülkeler bulunmaktadır.

Bu çalışmanın bulgularına göre doğal kaynak zengini ülkerin büyüme performansı doğal kaynak yoksunu olan ülkere göre düşüktür. Doğal kaynakların, ekonomik büyümeye olumlu katkılar sağlayabilmesi için ülkede bulunan kurumların iyi işlemesi gerekmektedir. Bol miktarda doğal kaynak rezervi olan ülkelerin üretim yanlısı politik kurumlara sahip olmasıyla ekonomik büyüme gerçekleşmektedir. Çalışmanın sonucuna göre; az gelişmiş ülkerden oluşan birinci grup ülkelerde kurumların kalitesi zayıftır. Bu ülkelerde siyasi çeşitlilikten daha fazla şiddet ve terör gibi politik istikrarsızlık ve hükümetin etkinsizliği mevcuttur. Az gelişmiş ülkelerde yolsuzlukların azaltılması, kanunların kalitesinin arttırılması, seçim sonuçlarına saygı ve siyasi kurumların güçlendirlmesi doğal kaynakların doğru kullanımına neden olurken aynı zamanda doğrudan yabancı yatırımları artırarak ekonomik büyümede önemli bir rol oynamaktadır.

Az gelişmiş ülkelerin çoğu, zayıf yerel kurumları nedeniyle makroekonomik şoklara karşı koyamamakta ve büyüme eğilimlerini uzun dönemlerde sürdürememektedir. Bu tür şoklara karşı alınan tedbirlerin dağıtım ve bölüşüm mekanizmasıyla ilgili ciddi iktisat politikası uygulamalarına neden olduğunu ifade edilmektedir. Fakat buradaki sorun hangi politikaların nasıl uygulanacağıdır. Çünkü iktisat politikaları uygulamalarında, kararlılık kadar politikaların nasıl

uygulandığı da önem arz etmektedir. Bu noktada sağlam kurumsal yapının tesis edilmiş olması, politika uygulamalarındaki olumsuzlukların daha düşük maliyetle giderilmesine olanak tanımakta ve ekonomik şokun büyümesini önlemektedir (Rodrik 1999:1).

Çalışmada yapılan regresyon analizi sonucuna göre 1996- 2015 yıllarını kapsayan dönemde; doğal kaynak zengini olan az gelişmiş ülke grubunda ekonomik büyümede doğal kaynakların etkisi negatif yöndedir. Az gelişmiş ülkelerde petrol gibi değerli bir kaynağın varlığı bile ekonomik performansa olumlu şekilde yansımamaktadır. Doğrudan yabancı yatırımlar ve kurumsal kalite ise bu grup ülkelerde ekonomik kalkınma üzerinde olumlu etkilere sahiptir. Çalışmada yer alan doğal kaynak yoksulu gelişmiş ülke grubu için ise doğrudan yabancı yatırımların ekonomik kalkınma üzerinde herhangi bir etkisi bulunamamıştır. Bu şaşırtıcı sonucu değerlendiriken söz konusu gelişmiş üke grubunda yer alan ülkelerin büyük oranda doğrudan yabancı sermaye dışa veren ülkeler olduğu göz önüne alınmalıdır. Çalışmada incelenen az gelişmiş ve gelişmiş ülke grupları temel olarak siyasi durumları (kurumları) açısından birbirlerinden ayrışmaktadırlar. Gelişmiş ülkeler kurumların kalitesini göz önünde bulundurup politikalar geliştirirken az gelişmiş ülkelerde hükümetin etkinliği ve siyasi istikrar alanlarında problem yaşanmaktadırlar.