

# Natural Resources, Quality of Institutions and Foreign Direct Investment in Sub-Saharan Africa

Feulefack Kemmanang Ludovic  
Ngassam Sylvain Bertelet

Research Paper 421

AFRICAN ECONOMIC RESEARCH CONSORTIUM  
CONSORTIUM POUR LA RECHERCHE ÉCONOMIQUE EN AFRIQUE

# Natural Resources, Quality of Institutions and Foreign Direct Investment in Sub- Saharan Africa

By

Feulefack Kemmanang Ludovic and Ngassam Sylvain Bertelet  
University of Dschang-Cameroon  
Université de Yaoundé II Soa, Cameroon

AERC Research Paper 421  
African Economic Research Consortium, Nairobi  
March 2021

THIS RESEARCH STUDY was supported by a grant from the African Economic Research Consortium. The findings, opinions and recommendations are, however, those of the author and do not necessarily reflect the views of the Consortium, its individual members or the AERC Secretariat.

Published by: The African Economic Research Consortium  
P.O. Box 62882 - City Square  
Nairobi 00200, Kenya

ISBN            978-9966-61-119-2

© 2021, African Economic Research Consortium.

# Contents

List of tables	v
Abstract	vi
1. Introduction	1
2. Review of the literature	5
3. Methodology	8
4. Results and discussions	18
5. Conclusion	27
References	28
Notes	33

## List of tables

1	Weight of the components of the institutional quality index	9
2	Homogeneity tests	13
3	Pesaran test CD	14
4	Pesaran unit root test (2007) or Pesaran CIPS test	14
5	Unit root test of Maddala and Wu (1999) [with specification without trend]	14
6a	Co-integration test on the relationship with extractive FDI	15
6b	Co-integration test on the relationship with non-extractive FDI	16
7	Dumitrescu and Hurlin (2012) homogeneous causality test results	18
8	Effect of institutional quality on extractive FDI	21
9	Effect of institutional quality on non-extractive FDI flows	24

# Abstract

An analysis of statistics on foreign direct investment (FDI) inflows reveals that some countries in sub-Saharan Africa (SSA), which are heavily endowed with natural resources and have internal conflicts, have managed to attract significant FDI. This study sought to determine whether it is possible that, for the same countries with weak institutions, some foreign investors can be attracted to invest in them while others are systematically repelled. We found that weak institutions are favourable to FDI inflows into the extractive sector, while they crowd out FDI into other sectors. Thus, resource-rich countries do not need institutional reforms to attract FDI.

Keywords: FDI, institutions, EITI, natural resources, PMG.

# Introduction

One of the major challenges of sub-Saharan Africa (SSA) is to find ways to finance its development. To this end, several countries in the region have opted for the attractiveness of foreign direct investment (FDI); especially in view of the spectacular economic growth of the countries of South-east Asia due to this capital. FDI is indeed considered as likely to induce transfers of capital, technology and know-how, and, in addition, it does not create debt. With the reforms initiated, going as far as creating an investment promotion agency in 20 years (1996–2016), SSA has witnessed its share of total FDI double. However, despite everything, the SSA share remains seven and 22 times lower than that of developing economies of America and Asia respectively (UNCTAD, 2017).

## Why does capital go so little towards an area that is sorely lacking?

Several empirical studies argue that weak institutions are the main reason explaining why Sub-Saharan Africa appears as a typical example of the Lucas paradox. It means that the poor quality of institutions discourages investors as it constitutes an additional barrier to FDI inflows (Aleksynska and Havrylchuk, 2012). In particular, corruption imposes additional costs to investors and increases uncertainty about future costs and returns on investment (Wei, 1997, 2000; Wei and Shleifer, 2000; Hellman *et al.*, 2002; Javorcik and Wei, 2009; Belgibayeva and Plekhanov, 2015). In Cameroon, for example, the unfair competition occasioned by cigarettes from Nigeria, which fraudulently crossed borders through corruption, caused the foreign-owned British American Tobacco company to close its factories and relocate to neighbouring Nigeria. Similarly, a poor definition of property rights, the impartiality of justice and the risks of expropriation have also been important disincentives (Warrick and Hallward, 2005), as noted in Zimbabwe (Gwenhamo, 2009) and also in the former Zaire, with the brutal nationalization of foreign companies by Mobutu's government. In addition, political instability increases the uncertainty of returns on investment, forcing foreign investors to choose other destinations (Alesina and Perotti 1996; Kaufman *et al.*, 1999; Basu and Srinivasan 2002; Chan and Gemayel, 2004). This indicates that good quality institutions attract FDI and poor quality pushes them back (Dunning, 2002, Brindusa, 2005; Stein and Daude, 2007; Julio *et al.*, 2013; Komlan, 2016).

Surprisingly, Iraq and Afghanistan have recorded increases in peak FDI inflows amid conflicts, and statistical analysis on the World Bank (2017) and UNCTAD (2017) data showed that several SSA countries have also attracted large volumes of FDI during periods of socio-political instability. In South Africa, despite the tensions and hostilities observed during the second half of apartheid (from 1970 to 1991), inflows of FDI accounted for 40%, 48% and 42% respectively of the total FDI for SSA in 1970, 1974 and 1984. In Sudan, throughout the 25 years (from 1980 to 2005) of the second civil war, inflows of FDI steadily increased at the average annual rate of 24.91%. This country also recorded the largest flows in its history (2.5 billion dollars) in 2006, during the Darfur war, often compared to genocide. Throughout its 27-year civil war<sup>1</sup>, Angola saw its inflows of FDI increase, on average, by 47.1% annually. Despite the troubles that accompanied the fall of Mobutu, inward FDI in the Democratic Republic of Congo (DRC) increased by 238% from 1997 to 1998. As if the proliferation of rebel formations and the unrest observed in the following years was insignificant, FDI entering the DRC increased at an average rate of 37% between 1999 and 2004 and then 45.8% between 2006 and 2011. Given that war should cause investors to flee, what explains this inverse phenomenon?

## Would poor institutions be attractive?

Aleksynska and Havrylchuk (2012) argue that foreign investors are discouraged by poor quality institutions, but sometimes their fears are shattered by the abundance of natural resources. Indeed, all these countries have abundant natural resources. Several reasons can then justify the attractiveness of these economies.

Almost invariably, the assaults of rebel groups, formed under the guise of a liberation movement, have primarily targeted areas rich in natural resources. This is the case with oil control (in Angola, Congo, Central African Republic (CAR), Uganda, Sudan, Niger Delta in Nigeria and Chad); diamond mining (in Angola, Guinea, Liberia, northern Côte d'Ivoire, DRC and Sierra Leone); and the control of cobalt, gold and tin in Kivu, Uranium in Niger, forest resources or land (Burundi, Côte d'Ivoire, Darfur and Rwanda). In fact, rebel control of areas endowed with natural resources is strategic because it allows them to buy weapons, finance their actions and recruit militia (Bannon and Collier, 2003; Orruj *et al.*, 2007; Lansana and Gberie, 2007). Thus, foreign companies already in place have often paid royalties to the rebels to continue their operations. This is the case with logging in CAR, in the area controlled by the anti-balaka<sup>2</sup>. More generally, in order to obtain financing, the rebels enter into resource contracts with traders and foreign firms, which can then return to Western markets via mafia networks through some relatively more stable neighbouring countries. This was the case in Angola with diamonds mined and evacuated by Zambia and South Africa, and in the DRC with cobalt routed through Rwanda. However, conflict financing has often forced governments to set a special tax, but often they enter into operating contracts with foreign firms for the few natural resources they still control. Consequently, the governments must guarantee these firms protection that would allow them to conduct the extraction; The Cosleg joint venture is an example.



Given the ORYX Natural Resources diamond consortium, it is worth noting that often foreign firms invest in an unstable environment, establish agreements with local or international military companies and local elites (Bayart *et al.*, 1997; Hugon, 2009). Having become dependent on income from natural resource extraction, political elites have no incentive to initiate effective institutional reforms. On the contrary, they are accomplices to lack of transparency and corruption, which is all in favour of foreign firms. Indeed, taking advantage of this situation, several foreign firms require or pay bribes to avoid paying taxes, to escape the environmental requirements related, for example, to the treatment of extraction sites, some of which (copper) have a real damaging effects on the health of the populations. In some countries, such as Ghana, the management of mining contracts was formerly the responsibility of the mines minister who, against bribes, could decide that the foreign firm should pay the State only 4% or 5% of its exploitation. In 1961, faced with the urgent need to obtain revenue, Niger accepted a deal to exploit its uranium at a price almost five times lower (41 euros instead of 186 euros) than the market price. So, weak institutions allow multinationals, among other things, to obtain contracts, avoid additional costs and increase their profit margins.

Chinese companies specifically choose to invest in countries with a very high political risk. The first reason explaining the propensity of Chinese firms to invest in countries with weak institutions relies on the fact that such economies are little coveted by Nordic firms since they are highly demanding in terms of the quality institutions. Second, it appears that the objectives sought by firms differ according to legal status (Buckley *et al.*, 2007). Thus, public enterprises are not necessarily guided by the pursuit of profit. Very often they are engaged in a conquest to obtain the energy resources essential to the functioning of their economies. It is, therefore, unlikely that public enterprises will be affected by the quality of institutions as would be a private enterprise. The participation of public enterprises in international investment involves a political economy dimension. Thus, Chinese extractive companies have a strong propensity to invest in countries that have strong political ties with their country. In several African countries, such as Tanzania, the Chinese government uses diplomatic tools to negotiate oil and mining contracts for firms from China (Li *et al.*, 2013).

Another reason that drives companies, especially from the South, to invest in countries with worse institutions is linked to the lockdowns put in place by developed countries to thwart the important strategic acquisition attempts initiated by firms from developing countries or from countries in transition. In this way, these firms have little choice but to invest in countries where weak institutions constitute a less rigid constraint, in countries with similar institutions or simply in oil and mining activities regardless of the type of institutions (Aleksynska and Havrylchyk, 2012). The action taken by the Canadian Government in 2004, influenced by public opinion, to prevent the firm “China Minmetals” from investing nearly USD 6.7 billion in the acquisition of the Canadian mining company “Noranda” is an illustration of this.

Aleksynska and Havrylchyk, (2012) consider that without institutional reforms, developing countries will always be attractive. But is it possible to increase the inflow

of FDI to countries with intense natural resources, simply by improving the quality of their institutions? It seems that weak institutions have either no effect on FDI in natural resources or a positive effect. Conversely, can one argue that the impact of the quality of institutions would be identical on foreign firms interested in investments on technology, intellectual property and services?

This study sought answers to these questions with a dual purpose, namely:

- To identify and analyse the link between the exploitation of natural resources and the quality of institutions.
- To assess the effect of the quality of institutions on FDI inflows by sector.

Asiedu (2006) investigated whether natural resources and market size on the one hand, and government policies and institutions on the other, were of equal importance to foreign investors. She concludes that in Africa all these factors matter. Only, it does not distinguish the type of foreign investors. In the Netherlands, Poelhekke and Van der Ploeg (2010) analysed the composition of FDI and hypothesized a resource-FDI curse. They showed that natural resources have a direct and negative effect on non-natural resource FDI inflows. Asiedu and Lien (2011) argued that in developing countries, democracy helps mitigate the curse while Asiedu (2013) disclosed that institutions are the vehicle of the curse. Komlan (2013) concurred for SSA, but Komlan (2016) then concluded that the effect of institutions is negative or pitiful depending on whether the country has abundant natural resources or not.

This study corroborates the hypothesis of a curse conveyed by the quality of the institutions. Only, unlike previous research, we only look at countries with intensive resources and we assume that the negative effect of institutions is not exercised on all FDI, but rather on that directed to non-natural resource sectors. Another contribution of this study lies in the assessment of the quality of institutions directly linked to natural resources, by adopting two variables measuring transparency as institutional variables. These are dummy variables that capture countries' commitment to the Extractive Industries Transparency Initiative (EITI) and countries' compliance with transparency requirements.

The rest of this report is organized in five sections. The second section is devoted to the review of the literature, the third to the methodological framework of the study and the fourth section presents the results obtained and the discussion. The last section is the conclusion.

## 2. Review of the literature

Several studies on Africa argue that natural resources are a curse (Auty, 1988; Sachs and Warner, 1995). One of the reasons for this is the “bureaucratic-over-stretch” syndrome highlighted by Ross (2012) to describe the tendency of politicians to use annuities for personal prestige and for acts of corruption. For example, Ross (2012) concluded that the quality of bureaucracy is bad in oil-rich countries.

These acts of corruption contribute to the formation of what Omeje (2006) describes as “an alliance of forces of the dominant social classes”, comprising, among others, of politicians, retired soldiers, technocrats and international investors (Ross, 2001), who see their taxes reduced or cancelled (Sala-i-Martin and Subramanian, 2003). They thus form allies to stifle any claims of the population (Ross, 2001). The concentration of capital ownership in the hands of the elite reproduces social inequalities between these elites and the rest of the population (Obi, 2007; Chindo *et al.*, 2014; Kim and Lin, 2017; Ebeke and Etoundi, 2017). Inequalities are aggravated by the absence of legislative provisions requiring extractive companies to conclude community development agreements with local populations, so that they can benefit from the income generated by the exploitation of their land. Worse still, local populations are often expropriated without compensation and the income generated by the resources of their basements is used to develop other regions (Watts, 2008; Orogun, 2010). Desperate and seeking means of subsistence by trying to extract low-grade minerals from abandoned and untreated extraction sites, local populations are also exposed to contamination (Ebeku, 2006). This means that property rights and fair justice are not guaranteed and foreign firms seize the opportunity resulting from corruption, poorly developed regulations or better still, regulations which suffer from laxity in its application to comfort their position.

These inequalities drive agitations to achieve equitable sharing of resources (Chindo *et al.*, 2014). Similarly, the concentration of power in the hands of a minority serves as a pretext for the opposition to attempt to acquire power by extra-constitutional means; this is one of the main sources of military coups (Chindo *et al.*, 2014) and also leads to political instability (Jensen and Watchenko, 2004). Of course, conflicts cause enormous losses in human capital and in infrastructure (Wanyande, 1997), and lead to massive and, unfortunately, unproductive investments in military equipment, rather than in financing development (Ikejiaku, 2009). This is without counting the effects on the investment.

One of the first studies to analyse the effect of institutional quality on FDI flows was that of Schneider and Frey (1985). Similar to Kaufman *et al.* (1999) and Chan and Gemayel (2004), they showed that political instability has a negative effect on inward FDI. For Hellman *et al.* (2002), corruption is a factor that reduces FDI inflows into a country. Djankov *et al.* (2008) argued that investors' protection is a fundamental factor in a country's attractiveness. Gradeva (2010), Gwenhamo (2009), Stein and Daude (2007) and Du *et al.* (2007) claimed that the quality of institutions plays a fundamental role in determining the location of multinational firms abroad, both as pull factors and as push factors. Asiedu (2005) also contended that corruption and political instability have a negative effect on FDI in Africa. They also showed that if Nigeria's level of corruption became similar to that of South Africa, the effect would be an increase in FDI and an increase in the share of exports of fuels and minerals in total exports of 34.84%.

Following Asiedu (2003, 2005), Komlan (2006) showed that the quality of institutions, as measured by the International Country Risk Guide (ICRG), has had a significant impact on FDI inflows in SSA. The conclusions of Naudé and Krugell (2007), Djaowe (2009), Benáček *et al.* (2012), Yosra *et al.* (2013) and Julio *et al.* (2013) are consistent with this finding.

These latest studies did not consider the place of natural resources. However, Gylfason and Zoega (2002), Sala-I-Martin and Subramanian (2003), Hodler (2006) and Ako and Uddin (2011), showed that natural resources have a perverse effect on economic factors through their effects on the quality of institutions.

In 2010, Poelhekke and Van der Ploeg (2010) noted that the analysis of the effects of natural resources on the composition and volumes of FDI seems not to have been taken into account in the available studies. They are also the first to approach the analysis of the existence of a resource-FDI curse. From data collected on multinational firms in the Netherlands between 1984 and 2002, Poelhekke and Van der Ploeg (2010) showed that: a) natural resources attract FDI specific to the natural resources sector; and (b) natural resources push back FDI directed to non-resource sectors and this effect is dominant. For example, they showed that if the price of a barrel of oil doubles, it would result in a reduction of inward FDI in non-natural resource sectors by 10%. Thus, globally, FDI inflows are smaller in resource-rich countries. The total effect of natural resources on FDI is negative, especially for countries that are geographically distant from major markets.

This work by Poelhekke and Van der Ploeg (2010) had the merit of analysing the existence of a resource-FDI curse, but the quality of institutions was absent in this relationship. Moreover, Poelhekke and Van der Ploeg (2010) assume that the effect of natural resources on FDI is not direct. They also consider that the quality of institutions is the vector transmitting the resource curse to FDI.

Asiedu and Lien (2011) and Asiedu (2013) examined the interaction between natural resources, the quality of institutions and FDI. However, like Poelhekke and Van der Ploeg (2010), they believe that crowding out effect of natural resources on FDI is straightforward. They, therefore, tried to determine whether the quality of

institutions can mitigate this effect. Moreover, Asiedu and Lien (2011) used only one variable of the quality of institutions, namely democracy. Asiedu (2013) considered more institutional variables, including: the effectiveness of the law, the respect of contracts and corruption. Assuming that the quality of institutions mitigates the perverse effect of natural resources on FDI suggests that the quality of institutions is autonomous. Such consideration cannot be made without foundation. For this reason, this study first examined the relationship between the exploitation of natural resources and the quality of institutions.

Komlan (2013) showed that in SSA, the abundance of natural resources degrades the quality of institutions and thus reduces its ability to attract foreign investors. Komlan (2016) added that in resource-rich countries, the quality of institutions has a negative effect on FDI. However, its effect is positive in the poorly endowed countries.

The studies carried out by Asiedu and Lien (2011), Asiedu (2013) and Komlan (2013, 2016) used aggregated values of FDI flows. In contrast to this work, disaggregated data on FDI flows from the Central African States Bank (BEAC) are used here. In addition, these authors worked on macro-panels but with estimation techniques adapted to micro-panels, which do not take into account stationarity, co-integration and heterogeneity. There is therefore a risk of fallacious regression. This paper focuses on the analysis of co-integration.

This work is therefore distinguished by a prior analysis of the relationship between dependence on natural resources and the quality of institutions. In addition, it attempts from the data on FDI flows by sector to assess the effect of the quality of institutions. Moreover, using the Dumitrescu and Hurlin (2012) test and panel co-integration methods, this work attempts to grasp the dynamic relationships that are established between variables, possibly non-stationary, retained in the long term.

## 3. Methodology

### 3.1. Data and variables of the study

The study covers five SSA countries<sup>3</sup> over the period 1996 to 2015. This sample and the period were selected based on the availability of data on FDI flows to extractive activities. The unavailability of these data in most countries significantly reduced the temporal and spatial dimension of the study. In the end, the selected sample comprised five of the eight SSA countries that the International Monetary Fund (IMF) considers as oil exporters. With the exception of Cameroon, these economies are all dependent on their oil exports.

#### 3.1.1. Natural resources

The natural resources variable, denoted NRdep, is measured by the share of exports of fuels, ores and metals in the total exports of the host country. This variable makes it possible to assess the country's dependence on natural resources. This is because we know that in general, fuels, ores and metals are exploited and managed by the State. So the State's room for manoeuvre in economic policy depends on these flows of income. This variable also measures the level of diversification of the economy. Thus, if its value is high, this indicates that the host economy is not very diversified. On the one hand, the study assumes that dependence on natural resources should determine the quality of institutions. On the other hand, dependence on natural resources should directly and positively impact FDI inflows. This is because of the activities that are emerging around the exploitation of natural resources, in industry and services.

#### 3.1.2. The quality of institutions

The definition of institutions that fits this study is that of North (1990). For him, institutions are the "rules of the game"; that is to say, "the constraints established by men, which structure human interactions". This definition puts man at the forefront of building institutions. These institutions resulting exclusively from the action of man are considered as constraints imposed on human action, and their implications must be apprehended in terms of incentives for human action. Institutions, from this point

of view, comprise formal constraints, informal constraints and the modalities of their application. Acemoglu and Johnson (2005) agree with North (1990), saying that “good institutions” are those that protect property rights, which limit the power of elites and all those who own the power, and that guarantee the protection of property rights and equality of opportunity between men. The institutional variables allow researchers to assess the incentive framework of the investment, thus the constraints related to the legal and socio-political environment which affect the choices of the investors.

Several measures of quality of the institutions were selected to better capture the possible impact of regulatory framework on investment decisions. Also, to capture the effect of the regulation of natural resource exploitation sector, two indicators of measurement of transparency in the management of extractive resources, in dummy variable form, were constructed. All the two indicators refer to EITI. This initiative, which currently has 31 member countries, including 24 SSA countries, requires transparent communication from its members on extractive contracts, extractive resource revenues and uses that are facts of said income. In addition, national reports must be developed in a committee in which must include civil society.

The first of these variables marked “Eitim” takes the value “0” for the years before the country’s accession to EITI, and the value “1” for years thereafter. This variable should capture the reaction of foreign investors to the decision of countries to be transparent in awarding contracts and managing the resulting resources.

Often because of conflict, some countries have been excluded from the list of member countries. This is the case of CAR. Others, however, had their efforts of transparency recognized by their passage at the stage of “compliant country”. A second transparency variable is constructed with the value “0” for the years of non-compliance and the value “1” for the years of compliance. This variable is used to assess the effect of advances in transparency by countries endowed with natural resources on the investment choices of foreign firms.

In addition, a synthetic indicator is also used to capture the overall effect of political institutions and economic institutions. This “INST” indicator is constructed using a weighted arithmetic average of the six indicators that make up the basis of the World Wide Governance Indicator data sets (World Bank, 2017). The weights were obtained using a principal component analysis and are presented in Table 1.

Table 1: Weight of the components of the institutional quality index

Components	Voice and accountability	Political stability	Rule of law	Control of corruption	Regulatory quality	Government effectiveness
Eignvalue	4.36077	0.975336	0.352293	0.171335	0.0817426	0.058527
Proportion	0.7268	0.1626	0.0587	0.0286	0.0136	0.0098

Then, to capture the individual effects, the institution variable was replaced in turn by each variable that composes it. These are six separate governance indicators with values between  $-2.5$  and  $+2.5$ :

- The control of corruption (CCor), which measures the use of power prerogatives for personal ends. A high value characterizes a low level of corruption.

- Political stability and the absence of violence (Pstab), which represent the likelihood of violent changes of regime or government, as well as serious threats to public order, including terrorism. A high value indicates an enabling environment for long-term investments, thus a good predictability of returns on investments.
- Accountability (Actby) or impunity, which apprehends the possibility for the citizens of a country to take part in the choices of the rulers, and measures the freedom of expression, association and the press. A high value indicates a lack of impunity.
- The effectiveness of bureaucracy (Bur), measuring the quality of the public service, the quality of the bureaucracy, the competence of the civil servants, the presence of political pressure in the public service and the credibility of the government in respect of its commitments to political and economic actors. A high value corresponds to efficient institutions, and therefore to a strong attractiveness of foreign investors.
- Regulatory quality (Reg), which measures regulatory impediments to the functioning of markets. A high value refers to a framework conducive to the development of private activity.
- The state of the law (Rlaw), which perceives the confidence that the agents concede to the rules which govern their company, in particular the respect of the contracts, the rights of property, the policies of justice and the probability of being a victim of violence or crime. A high value assumes a low risk.

### 3.1.3. Other variables

Data FDI to extractive activities (Fdiex) or non-extractive activities (Fdinex), gross domestic product (GDP), per capita growth rate (Gdprh), real exchange rate (Rexch), degree of openness (Opens), domestic investment (Invest), inflation rate (Infl) and resource dependency (NRdep) come from the World Investment Report database (UNCTD, 2017). Data on human capital (HUM), infrastructure (Infr: percentage of the population with access to electrical energy), level of financial development (Fdvp: credit to the private sector) and quality of institutions are derived from the basics data from the World Development Indicators (World Bank, 2017a) and WGI dataset (World Bank, 2017b). The data on direct investments in extractive activities are extracted from the national accounts published by the Central Bank (BEAC, 2017). FDI flows to non-extractive activities are therefore the result of the difference between inward and outward flows.

These data are processed to correct the presence of zero flows. To avoid the effects of magnitudes and to be able to interpret the coefficients of the estimate as elasticities, all the data are used in logarithmic value. Referring to the works of Busse and Hefeker (2007) and Chua et al. (2012), the logarithmic transformation of the negative values was made according to the following formula:  $y = \ln(x + \sqrt{x^2 + 1})$



## 3.2. Specification of the models

### 3.2.1. Causal relationship between endowment of natural resources and the quality of institutions

The link between the quality of institutions and the degree of dependence on natural resources was analysed using the non-causality test in the sense of Granger on heterogeneous panel, proposed by Dumitrescu and Hurlin (2012). Compared to the Granger causality test commonly used in panel data, the test proposed by Dumitrescu and Hurlin (2012) takes into account the heterogeneity of the panel and is relatively simple to implement. The basic model assumes two stationary variables  $x$  and  $y$ , observed on  $N$  individuals during  $T$  periods, such that for each individual ( $i$ ) and at each period ( $t$ ), we have:

$$y_{it} = \alpha_i + \sum_{k=1}^K \gamma_{ik} y_{i,t-k} + \sum_{k=1}^K \beta_{ik} x_{i,t-k} + \varepsilon_{it} \quad (1)$$

$\alpha_i$  represents the individual effects, considered as fixed. But generally, it is not possible to grasp all the heterogeneity of the dynamic link that is established between two variables. Thus, parameters  $\gamma_{ik}$  and  $\beta_{ik}$  are assumed to be fixed and different from one individual to another (Dumitrescu and Hurlin, 2012). In most cases, panel homogeneity tests lead to the conclusion that the panel is heterogeneous. As such, if the parameters are abusively imposed as homogeneous, the relevance of the results becomes questionable (Hurlin, 2005). However, the order of lags  $K$  is assumed to be identical for all the countries of the panel. Indeed, if in the panel one assumes a lag specific to each country, the determination of the delay rests then only on the temporal information. It runs the risk of providing very limited results. Thus, admitting a common lag order has the advantage of facilitating the obtention of asymptotic distributions of the statistics intended for the analysis of the causal relation (Dumitrescu and Hurlin, 2012).

For this study, each indicator of the quality of institutions gave rise to a model to be estimated. The variable "INST" was successively replaced by each of the indicators of the quality of the institutions. The following general model had to be tested:

$$Inst_{it} = \alpha_i + \sum_{k=1}^K \beta_{ik} NRdep_{i,t-k} + \varepsilon_{it} \quad (2)$$

### 3.2.2. Impact of natural resources and institutional quality on FDI inflows

Following in the footsteps of Driffield (2002), taken up by Naudé and Krugell (2007), we assume that the entry of a multinational firm or the reinvestment of its profits in one of the SSA countries is attributable to the profits expected. The probability of a firm obtaining such gains can be estimated by assuming that it operates in a finite time universe with a known market interest rate. In reality, this probability is not observable, but it can be approximated by admitting that it is a function of the

characteristics of the host economy. The variables that determine these characteristics are therefore strongly correlated with the profits expected by the foreign firm; either in terms of increased turnover or in terms of cost reduction. These include: degree of openness, market size (GDP per capita growth rate), level of inflation, infrastructure, human capital, exchange rate, labour endowment, natural resources and the quality of institutions. However, it would be difficult to use all these variables in the practical analysis because of the risk of multicollinearity that may arise from the links that certain variables maintain. We must make a choice. That said, the basic model to be estimated can be formulated as an autoregressive time-lagged equation (ARDL ( $p, q_1, q_2, \dots, q_k$ )), formulated by Pesaran et al. (1999). Let the following general form be:

$$y_{it} = \sum_{j=1}^p \lambda_{ij} y_{it-j} + \sum_{j=0}^q \delta_{ij} X_{it-j} + \mu_i + \tau d_{it} + \varepsilon_{it} \quad (3)$$

Where  $X_{it}$  is the vector of the explanatory variables  $\mu_i$  designates the fixed effects. The group number is  $i = 1, 2, 3 \dots N$ ; the number of period is  $t = 1, 2, 3, \dots T$ .  $\lambda_{it}$  is a scalar and  $\delta_{it}$  is the vector of the coefficients. If it turns out that the variables of Equation 3 are stationary of order  $I(1)$  and co-integrated, then the error term  $\varepsilon_{it}$  is stationary of order  $I(0)$  for all the individuals of the panel. The main interest in having co-integrated variables lies in their ability to react to any deviation from the long-term equilibrium. It is therefore possible to rewrite Equation 3 in the form of an error-correction equation, in which the short-run dynamics of the variables is influenced by the deviation from the long-run equilibrium. So, we have the following equation:

$$\Delta y_{it} = \Phi_i (y_{it-1} - \theta_i' X_{it}) + \sum_{j=1}^{p-1} \lambda_{ij}^* \Delta y_{it-1} + \sum_{j=0}^{q-1} \delta_{ij}^* \Delta X_{it-j} + \mu_i + \varepsilon_{it} \quad (4)$$

Where  $\Phi_i$  is the adjustment coefficient (assumed to be negative),  $\theta_i$  is the vector of the long-term coefficients, and  $\Delta$  is the variation between two given dates.

With this ARDL formulation, it will be possible to jointly estimate the short and long-term parameters. Moreover, there will be no difficulty in taking into account both stationary  $I(0)$  and  $I(1)$  or cointegrate variables (Pesaran and Shin, 1999). In passing, note that, the values of  $p$  and  $q_i$  which indicate the number of lags to be taken in the equation is determined by the Schwarz Information Criterion (SIC).

$$Fdi_{it} = \beta_0 + \beta_1 Inst_{it} + \beta_2 NRdep_{it} + \beta_3 Hum_{it} + \beta_4 Opens_{it} + \beta_5 Rexch_{it} + \beta_6 Gdprh_{it} + \varepsilon_{it} \quad (5)$$

The long-run equation to be estimated is presented in the following form:

Where:  $\varepsilon_{it}$  is the error term.

### 3.3. Estimation methods

#### 3.3.1. Preliminary tests

Before any estimation on panel data it is necessary to check the stationarity of the variables. Indeed, it is now proven that it is possible to have fallacious regressions on panel data. In many studies, the choice of the unit root test is almost random. The approach adopted here consists of determining the stationarity test adapted from the study of homogeneity and the cross-dependence test.

##### 3.3.1.1. The Poolability test

This homogeneity test is performed by interpreting the Fisher statistic, obtained from the estimation of the Equation 5 by fixed effects. Table 2 shows that the p-values associated with Fisher's statistics are below the 5% threshold. Hence, the assumption of perfect homogeneity of the different models cannot be retained.

Table 2: Homogeneity tests

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Inst	Eitim	Eitic	Pstab	Actby	Ccor	Reg	Bur	Rlaw
FDlex									
F-Statistic	9.82***	5.86***	6.80***	8.46***	9.43***	8.36***	10.10***	7.95***	9.41***
	(0.0000)	(0.0003)	(0.0001)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
FDInex									
F-Statistic	6.56***	3.88***	5.05***	5.02***	5.14***	7.30***	6.62***	6.03***	6.12***
	(0.0001)	(0.0060)	(0.0010)	(0.0011)	(0.0009)	(0.0000)	(0.0001)	(0.0002)	(0.0002)

p-values in parentheses. \*\*\*p < 0.01.

For the rest, we assume that the heterogeneity of the models comes from the constant.

##### 3.3.1.2. Cross-dependence test

To test the cross-dependence of each variable, the Pesaran test (2004) was used. Table 3 presents the results obtained for each case. The null hypothesis (H0) is that there is independence in cross section. The Pesaran CD-statistic is based on the average correlation coefficients between different countries taken two-by-two for each period of time. Under the null hypothesis, this statistic is asymptotically distributed according to a standard normal  $N(0, 1)$ .

These results show strong evidence of transversal dependence for the variables NRdep, Actby, Bur, Hum, Rexch, Infl, Infr and Fdvp.

Table 3: Pesaran test CD

Variables	Fdiex	Fdinex	NRdep	Inst	Actby	Pstab	Ccor	Reg	Rlaw
CD-test	-1.20	-1.62	5.97***	-0.35	3.30***	-0.35	-1.10	0.45	-1.10
	(0.229)	(0.106)	(0.000)	(0.728)	(0.001)	(0.725)	(0.269)	(0.651)	(0.270)

  

Variables	Bur	Hum	Opens	Gdprh	Rexch	Invest	Infl	Infr	Fdvp
CD-test	3.24***	13.06***	1.87*	-0.59	11.63***	0.78	13.64***	13.94***	8.95***
	(0.001)	(0.000)	(0.062)	(0.557)	(0.000)	(0.435)	(0.000)	(0.000)	(0.000)

p-values in parentheses. \*\*\*p < 0.01, \*p < 0.1.

Therefore, the behaviours of each of these variables among the countries studied are influenced by each other. However, the attractiveness of FDI in each country responds to the internal specificities of the economy.

The correct unit root test can now be determined.

### 3.3.1.3. Unit root tests

The results of the Pesaran stationarity test (2007) are shown in Table 4.

Table 4: Pesaran unit root test (2007) or Pesaran CIPS test

At level			In first difference		
Variables	Z[t-bar]	P-value	Variables	Z[t-bar]	P-value
NRdep	1.013	0.844	$\Delta$ NRdep	-1.445*	0.074
Actby	0.006	0.502	$\Delta$ Actby	-4.029***	0.000
Bur	-1.759	0.039	$\Delta$ Bur	-4.831***	0.000
Rexch	0.564	0.714	$\Delta$ Rexch	-5.434***	0.000
Hum	1.916	0.972	$\Delta$ Hum	-1.647*	0.050
Infl	-1.118	0.132	$\Delta$ Infl	-1.845**	0.033
Infr	-0.269	0.394	$\Delta$ Infr	-5.881***	0.000
Fdvp	-2.135**	0.016	$\Delta$ Fdvp	-2.377***	0.009

\*\*\*p < 0.01, \*\*p < 0.05, \*p < 0.1.

This test is used to test the presence of unit root in a heterogeneous panel when there is evidence of transverse dependence. It appears that at level, almost none of the variables are stationary. However, when they go into difference, they all become one.

The test of Maddala and Wu (1999) is more adapted in cases of transversal independence. The results of this test are shown in Table 5.

Table 5: Unit root test of Maddala and Wu (1999) [with specification without trend]

	At level				In first difference			
	Lags	0	1	2	3	0	1	2
Fdiex	8.495	9.071	8.720	19.169	101.14***	54.407***	28.873***	24.117***
	(0.581)	(0.525)	(0.559)	(0.038)	(0.000)	(0.000)	(0.001)	(0.007)
Fdinex	35.375	14.946	27.328	5.775	219.564***	82.582***	58.376***	31.926***
	(0.000)	(0.134)	(0.002)	(0.834)	(0.000)	(0.000)	(0.000)	(0.000)

Inst	6.209 (0.797)	14.039 (0.171)	10.669 (0.384)	9.090 (0.524)	57.408*** (0.000)	52.466*** (0.000)	16.562* (0.085)	23.961*** (0.008)
Pstab	11.047 (0.354)	8.248 (0.605)	4.177 (0.939)	4.629 (0.915)	79.381*** (0.000)	54.622*** (0.000)	14.327 (0.159)	13.694 (0.187)
Ccor	17.486 (0.064)	15.701 (0.109)	14.431 (0.154)	16.656 (0.082)	61.713*** (0.000)	46.757*** (0.000)	19.987** (0.029)	17.799* (0.058)
Reg	15.175 (0.126)	10.495 (0.398)	8.801 (0.551)	8.305 (0.599)	125.105*** (0.000)	50.503*** (0.000)	34.023*** (0.000)	32.952*** (0.000)
Rlaw	13.495 (0.197)	10.560 (0.393)	8.711 (0.560)	11.183 (0.343)	65.663*** (0.000)	69.223*** (0.000)	35.075*** (0.000)	22.754** (0.012)
Opens	23.280 (0.010)	12.897 (0.229)	27.438 (0.002)	6.560 (0.766)	103.464*** (0.000)	70.511*** (0.000)	23.263** (0.010)	12.482 (0.254)
Gdprh	50.225 (0.000)	26.302 (0.003)	17.958 (0.056)	12.218 (0.271)	162.577*** (0.000)	102.913*** (0.000)	90.056*** (0.000)	27.611*** (0.002)
Invest	10.890 (0.366)	14.415 (0.155)	11.576 (0.314)	11.997 (0.285)	111.679*** (0.000)	70.327*** (0.000)	20.722** (0.023)	16.055* (0.098)

p-values in parentheses. \*\*\*p < 0.01, \*\*p < 0.05, \*p < 0.1.

The observation is the same: at this level, it is difficult to conclude that the variables are stationary, but as first difference, all the variables become stationary. The next step is to verify the existence or not of a long-term relationship between model variables.

### 3.3.1.4. Co-integration test

The co-integration test chosen is that of Pedroni. Pedroni (1999, 2004) proposes several tests to verify the null hypothesis H0 of non-integration for all the observations by allowing the heterogeneity of the parameters for each one of these.

This test is performed on Equation 5, first, by replacing the dependent variable with extractive FDI flows and then, with non-extractive FDI inflows. In each case, care was taken to also replace the institutions variable by each of the indicators selected for its measurement. This is to ensure that there is a long-run relationship in each case.

Table 6a: Co-integration test on the relationship with extractive FDI

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Inst	Eitim	Eitic	Pstab	Actby	Ccor	Reg	Bur	Rlaw
Panel v	0.31 (0.3764)	0.05 (0.4796)	-0.84 (0.7997)	0.89 (0.1866)	-0.69 (0.7565)	1.29 (0.0989)	-0.85 (0.8037)	-0.95 (0.8298)	-0.22 (0.5893)
Panel rho	1.08 (0.8602)	0.85 (0.8037)	0.66 (0.7463)	1.19 (0.8829)	1.13 (0.8719)	0.93 (0.8250)	1.15 (0.8761)	1.14 (0.8732)	0.92 (0.8204)
Panel PP	-4.77*** (0.0000)	-3.41*** (0.0003)	-3.60*** (0.0002)	-5.13*** (0.0000)	-5.52*** (0.0000)	-5.72*** (0.0000)	-6.54*** (0.0000)	-5.41*** (0.0000)	-5.99*** (0.0000)
Panel ADF	-4.11*** (0.0000)	-3.75*** (0.0001)	-3.37*** (0.0004)	-4.39*** (0.0000)	-4.44*** (0.0000)	-3.60*** (0.0002)	-5.05*** (0.0000)	-4.38*** (0.0000)	-3.54*** (0.0002)
Group rho	2.10 (0.9823)	1.86 (0.9686)	1.44 (0.9248)	2.44 (0.9927)	2.10 (0.9822)	2.00 (0.9772)	2.18 (0.9856)	2.13 (0.9835)	1.92 (0.9729)
Group PP	-3.80***	-3.12***	-3.25***	-5.11***	-4.38***	-4.45***	-5.45***	-4.29***	-4.82***

	(0.0001)	(0.0009)	(0.0006)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Group ADF	-3.36***	-2.93***	-3.05***	-2.96***	-3.28***	-3.19***	-4.08***	-3.13***	-3.03***
	(0.0004)	(0.0017)	(0.0011)	(0.0015)	(0.0005)	(0.0007)	(0.0000)	(0.0009)	(0.0012)

p-values in parentheses. \*\*\*p < 0.01.

Table 6b: Co-integration test on the relationship with non-extractive FDI

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Inst	Eitim	Eitic	Pstab	Actby	Ccor	Reg	Bur	Rlaw
Panel v	-1.01 (0.8449)	-0.63 (0.7349)	-1.1591 (0.8768)	-1.49 (0.93)	-2.18 (0.9854)	-2.12 (0.9832)	-1.75 (0.9598)	-2.09 (0.9816)	-1.98 (0.9764)
Panel rho	1.87 (0.9696)	0.56 (0.7117)	0.6987 (0.7576)	2.26 (0.9881)	1.97 (0.9758)	1.65 (0.9510)	2.02 (0.9783)	2.29 (0.9889)	1.52 (0.9355)
Panel PP	-6.10*** (0.0000)	-7.36*** (0.0000)	-8.40*** (0.0000)	-4.75*** (0.0000)	-5.64*** (0.0000)	-6.76*** (0.0000)	-4.72*** (0.0000)	-4.99*** (0.0000)	-5.71*** (0.0000)
Panel ADF	-5.17*** (0.0000)	-4.57*** (0.0000)	-4.89*** (0.0000)	-3.40*** (0.0003)	-4.55*** (0.0000)	-4.33*** (0.0000)	-3.17*** (0.0008)	-3.91*** (0.0000)	-5.65*** (0.0000)
Group rho	2.01 (0.9779)	0.99 (0.8394)	0.97 (0.8339)	2.36 (0.9909)	2.18 (0.9853)	2.14 (0.9840)	2.03 (0.9789)	2.34 (0.9904)	1.86 (0.9684)
Group PP	-6.53*** (0.0000)	-11.41*** (0.0000)	-10.80*** (0.0000)	-7.03*** (0.0000)	-6.66*** (0.0000)	-7.44*** (0.0000)	-7.29*** (0.0000)	-6.44*** (0.0000)	-6.13*** (0.0000)
Group ADF	-5.08*** (0.0000)	-5.20*** (0.0000)	-6.40*** (0.0000)	-3.66*** (0.0001)	-4.80*** (0.0000)	-4.22*** (0.0000)	-3.55*** (0.0002)	-4.43*** (0.0000)	-5.03*** (0.0000)

p-values in parentheses. \*\*\*p < 0.01.

The results reveal that four out of seven statistics are significant at the 1% level. It is therefore easy to conclude that the null hypothesis of non-co-integration cannot be accepted.

Thus, the estimation of the effects of the quality of institutions and natural resources can be made using the Pool Mean Group (PMG) method. As for the test of causality envisaged, it requires only the stationarity of the variables, moreover proved.

### 3.3.2. Estimation of the causal relationship

This estimate requires the determination of the number of delays by the Schwartz Bayesian Information Criterion (SBIC). Then, it becomes easy to carry out the causality test of Dumitrescu and Hurlin (2012). It is only necessary to read the calculated P-values and to compare them to the threshold of 5%. Thus, any P-value below this threshold reflects the existence of a causal relationship for at least one country in the sample.

### 3.3.3. Estimation of FDI determinants

The effects of institutional quality on FDI flows are estimated by the aggregated average grouped method, or PMG, proposed by Pesaran *et al.* (1999). In other words, it is assumed that in the short term, the effects specific to individuals are so important

that each of them must be represented by a single equation, but that in the long run, individuals' behaviours converge, and can be represented by identical coefficients. The PMG estimator has the advantage of having good properties even when the size  $N$  of the sample is small relative to the time dimension (Pesaran *et al.*, 1997, 1999; Hsiao *et al.*, 1999; Blackburne and Frank, 2007). It provides unbiased and convergent results even with evidence of endogeneity, and takes into account panel heterogeneity in estimating the long-term dynamic relationship (Pesaran *et al.*, 1999). In addition, it makes it possible to simultaneously estimate the short and long-term relationship as well as the temporal adjustment between the two periods.

## 4. Results and discussions

### 4.1. Results of the causality test

The question here is whether dependence on natural resources determines the quality of institutions in the countries studied. The results obtained are shown in Table 7.

These results show that dependence on natural resources does not determine the quality of institutions in the oil exporting countries studied. This result is contrary to that of Ross (2001, 2012) who argues that the abundance of natural resources makes institutions indeterminate and that in particular, it causes the inefficiency of the bureaucracy. To say that the quality of institutions does not derive from dependence on natural resources certainly does not mean that this dependence has no effect on it. Moreover, this result suggests that the quality of the institutions has its origins elsewhere. Perhaps as postulated by Acemoglu *et al.* (2001) and Acemoglu and Robinson (2012), it could be the colonial system.

Table 7: Dumitrescu and Hurlin (2012) homogeneous causality test results

Relationship	Lags	Statistics	P-values
Inst does not homogeneously cause nrdep	1	2.8619**	0.0334
Nrdep does not homogeneously cause inst	1	0.9918	0.8517
Pstab does not homogeneously cause nrdep	2	2.9091	0.6676
Nrdep does not homogeneously cause inst	2	2.6687	0.8102
Actby does not homogeneously cause nrdep	1	1.6274	0.5488
Nrdep does not homogeneously cause actby	1	0.6665	0.5555
Ccor does not homogeneously cause nrdep	1	1.8309	0.3946
Nrdep does not homogeneously cause ccor	1	0.8812	0.7461
Bur does not homogeneously cause nrdep	1	0.9321	0.7942
Nrdep does not homogeneously cause bur	1	0.5193	0.4403
Reg does not homogeneously cause nrdep	2	1.0518	0.3018
Nrdep does not homogeneously cause reg	2	2.8941	0.6763
Rlaw does not homogeneously cause nrdep	1	1.0359	0.8947
Nrdep does not homogeneously cause rlaw	1	0.6230	0.5200

\*\* $p < 0.05$

However, the quality of institutions causes dependence on natural resources, and this link is significant at the 5% level. This indicates that the weakness of local institutions poses obstacles to the development of non-extractive activities, leading to low diversification of the economies concerned. Indeed, the economies of Chad, Gabon, Congo and Equatorial Guinea are so dependent on oil revenues that a sharp



drop in the price of a barrel of oil in the short term causes a slowdown in the economic activity of these countries, making it difficult for the State to meet its commitments. In recent years the effects have been observed on the ability of these countries to meet their domestic commitments, particularly in terms of salary payments. In reality, the development of processing activities in Gabon is only very recent. The effect is less important in Cameroon which is a slightly more diversified economy. But the fact remains that because of corruption, several domestic companies operating in various fields (textile, cigarette, battery and agro-food,) have seen their market share sharply reduced in favour of imports that cross borders by paying bribes.

Similarly, with the large size of the informal sector, it is possible to conclude that the regulatory framework is rigid, in this case a high tax burden. In addition, the recurrence of socio-political turmoil in the area tends to make returns on investments uncertain. It must be said that the rise of terrorism in the region does not make the context better. Moreover, this dependence on oil revenues is itself a source of uncertainty because of the risks of economic instability, particularly due to shocks on commodity prices.

## 4.2. Sectoral analysis of the effects of institutional quality on FDI flows

Table 8 presents the results of the estimates of the effect of institutional quality on inflows of FDI into the extractive sector. This is actually the estimation of Equation 5 where the institution variable has, in turn, been replaced by each of its components. This made it possible to avoid a possible multicollinearity bias, due to the strong link that exists between indicators of the quality of institutions.

It shows that natural resources have a positive and significant effect on extractive FDI flows. This result is in line with the findings of Asiedu (2005), Ajayi (2006), Anyanwu (2002), Komlan (2016) who showed that natural resources are the main factor of attractiveness of SSA economies. Extractive FDI is therefore oriented towards rent-seeking.

Institutional quality, taken as a whole, does not have a significant effect on extractive FDI flows. It goes without saying that the expected benefits of extraction make foreign firms interested in this sector insensitive to political and economic risks. However, when we analyse the effect of the composite variables, we realize that the effect is mixed.

Accession to EITI did not have a significant impact on the decisions of foreign firms to invest in the extractive sector. However, countries' compliance with a level of transparency has had a negative effect on FDI flows in the extractive sector. This seems to support the argument that foreign firms like a poor institutional environment where, for example, it is possible to obtain bribes and escape environmental constraints by the same means.

We also note that political stability has a positive and significant effect at 5% on extractive FDI flows. Knowing the regularity with which socio-political troubles have

been observed in the region (including the Bakassi conflict, the food riots, the fight against Boko Haram and the Anglophone problem in Cameroon; conflicts in Chad and CAR; the post-election crisis in Gabon; and failed coups d'état in Equatorial Guinea), political instability appears to create a beneficial context for foreign firms interested in investing in the extractive sector (Hugon, 2009). Indeed, in this context, it is easy to obtain less binding contracts both from the government, which needs the means to maintain the heavy incompressible loads of the army, than from the rebels who very often control and who need the means to finance their insurrection.

Table 8: Effect of institutional quality on extractive FDI

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Institutions	Transparency initiation	Transparency compliance	Political Stability	Control of Corruption	Voice and Accountability	Regulatory Quality	Bureaucracy	Role of Law
NRdep	1.303** (0.637)	1.162*** (0.306)	1.506*** (0.232)	1.214*** (0.241)	0.975*** (0.270)	1.281** (0.570)	0.877*** (0.193)	0.919* (0.484)	0.970*** (0.366)
Hum	2.659*** (0.475)	2.009*** (0.411)	2.012*** (0.331)	2.914*** (0.298)	2.438*** (0.341)	2.351*** (0.365)	2.757*** (0.342)	2.257*** (0.530)	2.840*** (0.343)
Gdprh	0.233*** (0.0603)	0.169*** (0.0387)	0.0874** (0.0349)	0.138*** (0.0400)	0.133*** (0.0393)	0.152*** (0.0448)	0.185*** (0.0394)	0.158*** (0.0415)	0.156*** (0.0510)
Opens	-7.473*** (1.913)	-7.413*** (1.205)	-9.269*** (0.986)	-7.121*** (0.876)	-7.242*** (1.074)	-9.616*** (2.295)	-6.727*** (0.827)	-7.127*** (1.504)	-6.998*** (1.664)
Rexch	-5.426*** (1.953)	-1.310 (1.297)	-1.072 (0.858)	-2.146 (1.366)	-2.819** (1.210)	-3.947*** (1.445)	-3.750*** (1.255)	-2.320* (1.317)	-3.114** (1.413)
Inst	-0.593 (1.691)								
Eitim		0.252 (0.238)							
Eitic			-0.973*** (0.273)						
Pstab				1.089** (0.432)					
Ccor					-2.054 (1.357)				
Actby						-1.979** (0.990)			
Reg							-1.414*** (0.543)		
Bur								-0.519 (0.846)	

Rlaw																	0.260 (1.370)
Constant	-7.303 (5.571)	-2.076 (2.106)	-0.884 (1.678)	-3.070 (3.265)	-4.043 (3.300)	-5.203 (3.697)	-6.519 (5.663)	-4.106 (3.436)	-5.748 (4.952)								

p-values in parentheses. \*\*\* p < 0.01, \*\* p < 0.05, \* p < 0.1.

Corruption control has no significant effect on extractive FDI flows. So, it is easy to assume that the mechanisms for controlling corruption are ineffective or at least that foreign firms know how to act to divert the attention of the bodies concerned by the control. Corruption, therefore, acts as a “helping hand”, that is, a greasing mechanism for foreign extractive companies.

The effect of accountability is negative and significant. So, the less impunity and laxity in the control of public affairs management, the more foreign investors in the extractive sector want to change their environment. Similarly, they are negatively affected by any form of regulation of extractive activity. This is because the quality of regulation has a negative effect on FDI flows in this sector. However, foreign investors in this sector are insensitive to administrative slowness and freedom of expression.

Overall, these findings are consistent with the findings of Buckley *et al.* (2007), Aleksynska and Havrylchyk (2012) and Li *et al.* (2013) that show foreign investment is possible despite the presence of weak institutions.

When one examines the effects of institutional quality on FDI inflows into the non-extractive sector, the difference is quite significant. As can be seen in Table 9, the quality of institutions has a negative and significant effect at the 1% level on FDI inflows in the non-extractive sector. Thus, deterioration in the quality of institutions of 1% causes a decrease in FDI inflows of 4.8%. This is a more than proportional decline. This result is consistent with those of Asiedu (2013) and Komlan (2013, 2016).

The transparency initiative did not really help to explain non-extractive FDI inflows. Probably the effect of countries' adherence to this initiative did not significantly affect the quality of institutions. It is likely that over time this effect will become more significant.

Political stability, which has a positive effect on extractive FDI flows, has the opposite effect on non-extractive FDI. This means that for foreign investors concerned with this sector, socio-political unrest makes future returns uncertain, and leads them to arbitrate between several territories. They therefore prefer politically stable economies.

In addition, the control of corruption has a positive effect on incoming foreign investment in the non-extractive sector. Thus, the more efficient the control of corruption, the more foreign firms can reduce their transaction costs.

Table 9: Effect of institutional quality on non-extractive FDI flows

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Institutions	Transparency initiation	Transparency compliance	Political Stability	Control of Corruption	Accountability	Regulatory Quality	Bureaucracy	Role of Law
NRdep	-2.724*** (0.208)	-1.921*** (0.634)	-2.388*** (0.328)	-2.353*** (0.561)	-1.154*** (0.419)	-7.704*** (1.579)	-0.828*** (0.116)	-0.792** (0.379)	-10.63*** (3.968)
Hum	1.102*** (0.242)	3.185*** (1.181)	1.417*** (0.352)	0.200 (0.913)	5.901*** (0.819)	6.895*** (1.828)	1.743*** (0.413)	0.131 (0.560)	7.206** (3.275)
Gdprh	0.812*** (0.0449)	0.590*** (0.148)	0.509*** (0.0652)	0.0902* (0.0547)	0.175*** (0.0655)	0.520*** (0.171)	0.0836*** (0.0182)	0.0746 (0.0823)	0.321* (0.183)
Opens	12.08*** (2.327)	12.32*** (4.767)	22.24*** (3.821)	4.528 (2.795)	31.01*** (5.627)	45.63*** (10.08)	-3.408*** (0.547)	12.82*** (3.222)	54.48** (22.13)
Rexch	-10.69*** (0.887)	-12.40*** (2.672)	-10.40*** (1.497)	-5.578*** (2.058)	-12.20*** (3.010)	-35.05*** (6.139)	-4.657*** (1.240)	-5.050*** (1.807)	-35.15** (15.54)
Inst	-4.821*** (1.662)								
Eitim		-3.621*** (0.651)							
Eitic			-3.677 (3.656)						
Pstab				-2.498*** (0.783)					
Ccor					12.74*** (1.259)				
Actby						-8.678* (4.838)			
Reg							5.661*** (0.423)		

Bur									4.630*** (1.262)
Rlaw									1.723 (4.148)
Constant	18.97 (14.72)	43.81*** (13.20)	31.17** (12.34)	27.65** (11.33)	25.62 (15.81)	75.85** (30.19)	26.26** (12.89)	19.64*** (6.170)	52.27 (45.33)

p-values in parentheses. \*\*\*p < 0.01, \*\*p < 0.05, \*p < 0.1.

The results also show that a well-structured and stable regulation will have a positive and significant effect on non-extractive FDI. Regulatory reforms are, therefore, highly valued by foreign firms in this sector, as is effective bureaucracy. However, it appears that the level of impunity has a negative effect on non-extractive FDI flows, even if the effect is only significant at 10%.

Overall, these results corroborate those of Gradeva (2010), Gwenhamo (2009), Stein and Daude (2007) and Du *et al.* (2007) who argue that the quality of institutions plays a fundamental role in determining the location of multinational firms abroad. They are also in line with the conclusions of Asiedu (2003), Naudé and Krugell (2007), Djaowe (2009), Benáček *et al.* (2012), Yosra *et al.* (2013) and Julio *et al.* (2013).

The results in table 9 show that the effect of natural resources on non-extractive FDI flows is negative. This result corroborates the resource-FDI curse hypothesis formulated by Poelhekke and Van der Ploeg (2010) and supported by Asiedu and Lien (2011), according to which natural resources have a crowding-out effect on foreign investment flows. The results obtained here confirm the hypothesis at the beginning of the study, since they show that the curse relates to non-extractive FDI. For extractive FDI, the weakness of institutions in the countries studied seems rather to be a blessing.

However, the size of the market, the human capital and the openness of the economy substantially improve non-extractive FDI inflows.



## 5. Conclusion

The study of the determinants of FDI has been the subject of much work. The existing studies have resulted in giving pride of place to the quality of institutions. From this point of view, it is considered that good institutions attract FDI and bad institutions repel them. Yet it is still possible to observe that some attractive countries do not have institutions of better quality than those of other countries which are less attractive. Aleksynska and Havrylchuk (2012) argue that it all depends on the similarity between the institutions of the investor's country and those of the host country. This study assumes that this could perhaps be explained by the sector of the host economy that interests the investor. This assumption is confirmed at the end of the analysis carried out using the PMG method on a sample of five SSA oil-exporting countries. This means that investments in extractive activities are not sensitive to the quality of institutions in general, and to a certain extent, weak institutions have an attractive effect. However, the same institutions exert a crowding-out effect on inward FDI flows to non-extractive activities. As argued by Aleksynska and Havrylchuk (2012), there will always be firms to invest in the primary sector regardless of the quality of institutions. In this way, it is possible in resource-rich countries to increase FDI inflows, especially in non-natural resource sectors, by improving the quality of institutions. In particular, the risks of political instability must be reduced by promoting true democracy and decentralization, strengthening the control of corruption and accountability through full transparency. In the same vein, countries with abundant resources have every interest in joining the EITI and complying with the requirements of transparency. This is because, it is an effective way to move away from unethical firms, and to limit opportunistic behaviour that often leads to socio-political unrest. Moreover, dependence on natural resources does not determine the quality of institutions. Conversely, the low economic diversification of the countries studied is attributable to the poor quality of their institutions. Unfortunately, the study does not determine the origin of the quality of the institutions nor does it examine the effect of the neighbourhood, which could nevertheless reveal the interdependencies between countries and the need to conduct coordinated institutional policies.

## References

- Acemoglu, D. and Johnson, S., 2005. Unbundling Institutions. *Journal of Political Economy*, pp 949-995.
- Acemoglu, D. and Robinson, J. A. 2012. *Why Nations Fail: The Origins of Power, Prosperity and Poverty*. New York, NY: Crown Publishers.
- Acemoglu, D., J.A. Robinson and S. Johnson. 2001. "The colonial origins of comparative development: An empirical investigation". *American Economic Review*, 91: 1369–1401.
- Ajayi, S.I., 2006. The Determinants of Foreign Direct Investment in Africa: A Survey of the Evidence. in Ajayi, S.I., ed., *Foreign Direct Investment in Sub-Saharan Africa: Origins, Targets, Impact and Potential*, African Economic Research Consortium
- Ako, R. and N. Uddin. 2011. Good governance and resource management in Africa. In F. Botchway, ed., *Natural Resource Investment and Africa's Development*. Cheltenham: Edward Elgar.
- Aleksynska, M. and O. Havrylchuk. 2012. "FDI from the South: the role of institutional distance and natural resources". *European Journal of Political Economy*, 29, 38-53.
- Alesina, A. and Perotti, R., 1996. Income distribution, political instability, and investment. *European Economic Review*, 40(6): 1203-1228.
- Anyanwu, J.C. 2002. "Economic and political causes of civil wars in Africa: some econometric results". *Economic Research Papers* No. 73. African Development Bank, Abidjan, Côte d'Ivoire.
- Asiedu, E. 2013. Foreign direct investment, natural resources and institutions. International Growth Centre Working Paper. IGC, London, March.
- Asiedu, E. 2006. "Foreign direct investment in Africa: the role of natural resources, market size, government policy, institutions and policy stability". *The World Economy*, Vol.29, Iss.1, p 63-77.
- Asiedu, E. 2003. "Foreign direct investment to Africa: The role of government policy, governance and political instability". Mimeo. Department of Economics, University of Kansas.
- Asiedu, E. and D. Lien. 2011. "Democracy, foreign direct investment and natural resources". *Journal of International Economics*, 84: 99–111.
- Auty R. M. (2001), *Resource Abundance and Economic Development*. Oxford: Oxford University Press.
- Bannon, I. and Collier, P. (2003), "Natural Resources and Violent Conflict", *Options and Actions*,

- The World Bank, pp.429.
- Basu, A. and K. Srinivasan. 2002. "Foreign direct investment in Africa—Some case studies". IMF Working paper WP/02/61. International Monetary Fund, Washington, D.C.
- Bayart, J-F., Ellis, S. and Hibou, B., 1999. *The criminalization of the State in Africa*. Bloomington and Indianapolis, Indiana University Press.
- BEAC, 2017. Offre et Emplois des Ressources. Rapports annuels (2001-2017), Banque des Etats d'Afrique Centrale. <https://www.beac.int/economie-stats/statistiques-economiques/>.
- Belgibayeva, A. and Plekhanov, A. (2015), "Does Corruption Matter for Sources of Foreign Direct Investment?"; EBRD Working Paper No. 176. Available at: <http://dx.doi.org/10.2139/ssrn.3119692>.
- Benáček, V., H. Lenihan, B. Andreosso-O'Callaghan and E. Michalíková. 2012. Political risk, institutions and foreign direct investment: How do they relate in various European countries? *The World Economy*, 37(5), 625-653.
- Blackburne, E.F. and M.W. Frank. 2007. Estimation of nonstationary heterogeneous panels. *The Stata Journal*, 7(2): 197–208.
- Brindusa, A., 2005. Do Institutions Affect Foreign Direct Investment? International Doctorate in Economic Analysis, Universidad Autónoma de Barcelona, October, p.40.
- Buckley, P.J., J. Clegg, A.R. Cross, X. Liu, H. Voss and P. Zheng. 2007. "The determinants of Chinese outward foreign direct investment". *Journal of International Business Studies*, 38(4): 499–518.
- Busse, M. and Hefeker, C., 2007. "Political risk, institutions and foreign direct investment". *European Journal of Political Economy*, Elsevier, 23(2): 397-415.
- Chua, C. R.; Zulkefly, A. K. and Mohd.Azlan, S. Z., 2012. Institutions and Foreign Direct Investment (FDI). in "Mena Countries: A Panel ARDL Study", *Prosiding perkem VII, JILID 2*, pp.1349 – 1355.
- Chan, K.K. and Gemayel, E.R., 2004. Risk Instability and the Pattern of Foreign Direct Investment in the Middle East and North Africa Region. IMF Working Paper.
- Chindo, M., Naibbi, A.I. and Abdullahi, A., 2014. The Nigerian Extractive Economy and Development", *Human Geographies. Journal of Studies and Research in Human Geography*, Vol. 8, No. 2, pages 71-87.
- Djankov, S.; La Porta, R.; Lopez-de Silanes, F. and Shleifer, A., 2008. "The law and economics of self-dealing". *Journal of Financial Economics*, (2008), pp.430-465.
- Djawoe, J. 2009. Investissements Directs Etrangers (IDE) et Gouvernance: les pays de la CEMAC sont-ils attractifs ? *Revue africaine de l'Intégration*, 3(1). Pages 32-45.
- Du, J.; Lu, Y. and Tao, Z., 2007. Economic Institutions and FDI Location Choice: Evidence from U.S. Multinationals in China. Working Paper, Chinese University of Hong Kong, March.
- Driffield, N., Munday, M. and Roberts, A., 2002. "Foreign Direct Investment, Transactions Linkages, and the Performance of the Domestic Sector". *International Journal of the Economics of Business*, 9, (3), 335-351.
- Dumitrescu, E. and C. Hurlin. 2012. Testing for Granger non-causality in heterogeneous panels. *Economic Modelling*, 29: 1450–60.
- Dunning, J.H. 2002. Determinants of foreign direct investment: Globalization induced changes and the role of FDI policies. *Journal of International Business Studies*. 15(2), pages 55-72.

- Ebeke, H.E. and S.M. Etoundi, 2017. The effects of natural resources on urbanization, concentration, and living standards in Africa. *World Development*, 96(C): 408–417.
- Ebeku, K.S.A., 2006. *Oil and the Niger Delta People in International Law*. Cologne: KöppeVerlag.
- Gradeva, M., 2010. FDI integration in an unstable institutional environment: the case of Bulgaria. draft version, Paper to be presented at the Summer Conference 2010, CES, University Paris 1 Pantheon Sorbonne.
- Gwenhamo, F. 2009. Foreign direct investment in Zimbabwe: The role of institutional factors. Working Paper No. 144. University of Cape Town, Cape Town, August.
- Gylfason, T., and G. Zoega. 2002. Natural resources and economic growth: the role of investment. Working Paper No. 142. Central Bank of Chile, Santiago.
- Hellman, J.; Jones, G. and Kaufmann, D., 2002. Far from Home: Do Foreign Investors Import Higher Standards of Governance in Transition Economies? Policy Research Working Paper, The World Bank: Washington, D.C.
- Hodler, R., 2006. "The curse of natural resources in fractionalized countries". *European Economic Review*, 50: 1367-1386.
- Hsiao, C., M.H. Pesaran and A.K. Tahmiscioglu, 1999. "Bayes estimation of shortrun coefficients in dynamic panel data models". In C. Hsiao, L.F. Lee, K. Lahiri and M.H. Pesaran, eds, *Analysis of Panels and Limited Dependent Variables Models*, Cambridge: Cambridge University Press, 268-296.
- Hugon, P. 2009. "Les conflits armés en Afrique : apports, mythes et limites de l'analyse économique". *Revue tiers monde*, 176. pp. 829-856.
- Hurlin, C., 2005. Un Test Simple de l'Hypothèse de Non-Causalité dans un Modèle de Panel Hétérogène. *Revue Economique*, 56(3), 799-809.
- Ikejiaku, B., 2009. The Relationship between Poverty, Conflict and Development. *Journal of Sustainable Development*, 2(1), pages 15-28. DOI: 10.5539/jsd.v2n1p15.
- Javorcik, B.S. and Wei, S-J., 2009. "Corruption and Cross-Border Investment in Emerging Markets: Firm-Level Evidence". *Journal of International Money and Finance*, 28(4):605-624.
- Jensen, N. and L. Wantchekon. 2004. "Resource wealth and political regimes in Africa". *Comparative Political Studies*, 37(7): 816–841.
- Júlio P., Pinheiro-Alves, R. and Tavares, J., 2013. Foreign Direct Investment and institutional reform: evidence and an application to Portugal. Working Papers 06|2013, Banco de Portugal, p.45
- Kaufmann, D.; Kraay, A. and Zoido-Lobaton, P., 1999. Aggregating Governance Indicators. Policy Research Paper 2195, the World Bank.
- Kim, D.H. and S.C. Lin., 2017. "Human capital and natural resource dependence". *Structural Change and Economic Dynamics*, 40(C): 92–102.
- Komlan F., 2016. Quality of institutions, natural resources and foreign direct investment (FDI) in Sub-Saharan Africa: Dynamic approach. *Journal of Economics and Development Studies*, Vol. 4, No. 2, pp. 28-55.
- Komlan, F. 2013. "Do institutions quality affect FDI inflows in sub Saharan African countries?" *Munich Personal RePEc Archive*, March 2013.
- Komlan, F. 2006. "Quality of institutions, natural resources and foreign direct investment

- (FDI) in sub-Saharan Africa: Dynamic approach". *Journal of Economics and Development Studies*, 4(2): 28–55.
- Lansana, G. 2007. "A dirty war in West Africa: The RUF and the destruction of Sierra Leone". *African Affairs*, Volume 106, Issue 424, July 2007, Pages 533–534.
- Li J., A. Newenham-Kahindi., M.D. Shapiro and V.Z. Chen. 2013. Foreign direct investment in natural resource industries in Africa: Chinese versus Western models. Jack Austin Center for Asia Pacific Business Studies Working Paper. Simon Fraser University, Burnaby, BC, Canada.
- Lucas, R.E. 1990. "Why doesn't capital flow from rich to poor countries?" *American Economic Review*, 80: 92–96.
- Maddala, G.S. and Wu, S., 1999. A comparative study of unit root tests with panel data and a new simple test. *Oxford Bulletin of Economics and Statistics*, 61(Supplement 1), pp. 631-652.
- Naudé, W.A. and W.F. Krugell. 2007. "Investigating geography and institutions as determinants of foreign direct investment in Africa using panel data". *Applied Economics*, 39: 1223–33.
- North, D. 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge, UK: Cambridge University Press.
- Obi, C. 2007. "The struggle for resource control in a petro-state: A perspective from Nigeria". In P. Bowles, H. Veltmeyer, S. Cornilissen, N. Invernizzi and K.-L. Tang, eds., *National Perspectives on Globalisation*. Hampshire, UK, and New York, USA: Palgrave Macmillan.
- Omeje, K. 2006. *High Stakes and Stakeholders: Oil Conflict and Security in Nigeria*. Aldershot, Hampshire, UK: Ashgate.
- Orogun, P.S. 2010. "Resource control, revenue allocation and petroleum politics in Nigeria: the Niger Delta question". *Geojournal*, 75(5): 459–507.
- Orruj, F., R. Pelon and P. Gentillhome. 2007. Le diamant dans la géopolitique africaine. *Afrique contemporaine*, 227: 173-203.
- Pedroni, P., 2004. "Panel cointegration: Asymptotic and finite sample properties of pooled time series tests with an application to the PPP hypothesis". *Econometric Theory*, 20: 597–625.
- Pedroni, P., 1999. "Critical values for cointegration tests in heterogeneous panels with multiple regressors". *Oxford Bulletin of Economics and Statistics*, 61: 653–670.
- Pesaran, M.H., 2007. "A Simple Panel Unit Root Test in the Presence of Cross-Section Dependence". *Journal of Applied Econometrics*, 22(2), pp. 265-312.
- Pesaran, M. H., 2004. General diagnostic tests for cross section dependence in panels. University of Cambridge, Faculty of Economics, Cambridge Working Papers in Economics No. 0435.
- Pesaran, M. H. and Shin, Y., 1999. "An Autoregressive Distributed Lag Modelling Approach to Cointegration". in Strom S, ed, *Econometrics and Economic Theory in the 20th Century: The Ragnar Frisch Centennial Symposium*, Chapter 11, Cambridge University Press.
- Pesaran, M.H., Y. Shin and R.P. Smith. 1999. "Pooled mean group estimation of dynamic heterogeneous panels". *Journal of the American Statistical Association*, 94: 621–634.
- Pesaran, M. H., Y. Shin, and R. P. Smith. 1997. Estimating long-run relationships in dynamic heterogeneous panels. DAE Working Papers Amalgamated Series 9721.
- Poelhekke, S. and F. van der Ploeg. 2010. Do natural resources attract FDI? Evidence from non-stationary sector-level data. DNB Working Paper No. 266. Netherlands Central Bank, Amsterdam, November.
- Ross, M.L. 2001. Extractive sectors and the poor. Report issued by Oxfam America. At [www.oxfam.org](http://www.oxfam.org).

[oxfamamerica.org](http://oxfamamerica.org).

- Ross, M.L. 2012. *Oil Curse: How Petroleum Wealth Shapes the Development of Nations*. Princeton, NJ: Princeton University Press.
- Sala-i-Martin, X. and A. Subramanian. 2003. Addressing the natural resource curse: An illustration from Nigeria. IMF Working Paper 03/139. International Monetary Fund, Washington, D.C., USA.
- Sachs, J. and Warner, A., 1995. "Natural resource abundance and economic growth". in G. Meier and J. Rauch, eds, *Leading Issues in Economic Development*, Oxford University Press.
- Schneider, F. and Frey, B.S., 1985. "Economic and political determinants of foreign direct investment". *World Development*, 13. pp. 161-175.
- Stein, E. and Daude, C., 2007. "The quality of institutions and foreign direct investment". *Economics & Politics*, Vol.19, No. 3, November.
- UNCTAD (2017), *World Investment Report*. New York et Genève : Conférence des Nations Unies sur le Commerce et le Développement.
- Wanyande, P., 1997. *State Driven Conflict in the Greater Horn of Africa*". Revised Paper Presented at the USAID Organized workshop on Conflict in the Great Horn of Africa May 21-23, Methodist House: Nairobi.
- Watts, M. 2008. *Curse of the Black Gold 50 years of Oil in the Niger Delta*. New York: Powerhouse Books.
- Warrick, S. and Hallward-Driemeir, M., 2005. "Understanding the investment climate". *Finance and Development*, p.41.
- Wei, S.J. 1997. Why is corruption so much more taxing than tax? Arbitrariness kills. NBER Working Paper No. 6255. National Bureau of Economic Research, Cambridge, MA, USA.
- Wei, S.J. 2000. "How taxing is corruption to international investors?" *Review of Economics and Statistics*, 82(1):1-11.
- Wei, S.-J. and Shleifer, A., 2000. "Local corruption and global capital flows". *Brookings Papers on Economic Activity*, 2 (2000), pp. 303-346.
- World Bank. 2017a. *World Development Indicators*. Primary data documentation. Washington, D.C.: The World Bank.
- World Bank. 2017b. *Worldwide Governance Indicators Datasets*. Washington, D.C.: The World Bank.
- Yosra, S., A. Ochi and H. Ghadri. 2013. "Governance and FDI attractiveness: Some evidence from developing and developed countries". *Global Journal of Management and Business Research Finance*, 13: 11.

## Notes

- 1 From 1975 to 2002.
- 2 The Anti-balaka is an alliance of militia groups based in the Central African Republic.
- 3 Cameroon, Chad, Congo, Equatorial Guinea and Gabon.



## Mission

To strengthen local capacity for conducting independent, rigorous inquiry into the problems facing the management of economies in sub-Saharan Africa.

The mission rests on two basic premises: that development is more likely to occur where there is sustained sound management of the economy, and that such management is more likely to happen where there is an active, well-informed group of locally based professional economists to conduct policy-relevant research.

[www.aercafrica.org](http://www.aercafrica.org)

## Learn More



[www.facebook.com/aercafrica](https://www.facebook.com/aercafrica)



[www.instagram.com/aercafrica\\_official/](https://www.instagram.com/aercafrica_official/)



[twitter.com/aercafrica](https://twitter.com/aercafrica)



[www.linkedin.com/school/aercafrica/](https://www.linkedin.com/school/aercafrica/)

## Contact Us

African Economic Research Consortium  
Consortium pour la Recherche Economique en Afrique  
Middle East Bank Towers,  
3rd Floor, Jakaya Kikwete Road  
Nairobi 00200, Kenya  
Tel: +254 (0) 20 273 4150  
[communications@aercafrica.org](mailto:communications@aercafrica.org)