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by

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Abstract

For the past quarter of a century, foreign direct investment (FDI) flows have grown exponentially across the world. Sub-Saharan Africa has, however, lagged behind and only lured on average a mere 2% of global FDI. The investment that the region attracts tends, moreover, to be concentrated in a number of commodity-rich countries. Natural resources and the size of national markets have generally been considered as the main drivers of FDI. The quality of local institutions has, by contrast, attracted less attention. This paper uses institutional data for 22 countries in order to demonstrate that the quality of governance plays a far from negligible and enduring role in the distribution of FDI in sub-Saharan Africa. It is shown that factors such as political stability, government effectiveness, lower corruption, voice and accountability, and the rule of law not only are more important determinants of FDI than the size of local markets, but also that their influence on the capacity of African countries to attract FDI is long-lasting.

Keywords: Foreign direct investment (FDI), good governance, institutions, markets, natural resources, sub-Saharan Africa

JEL Codes: F21, N57, O43

1. Introduction

For the past quarter of a century, globalisation has unleashed an impressive growth in global Foreign Direct Investment (FDI). Designing, producing, managing, and selling in the four corners of the world has become the norm for an ever-growing number of companies. This phenomenon has certainly not remained without consequences. A company that relocates or invests in a foreign country brings with it physical capital, know-how, jobs, and other positive externalities, such as the promotion of exports and of domestic investment, making FDI very attractive for host countries. At the same time, it is often the case that competition ensues among countries and regions in order to ensure the attraction of FDI. And some countries and regions are simply more competitive than others.

Sub-Saharan Africa as a whole has, however, been somewhat cut off from global FDI flows. Even though the flows towards the region have significantly increased over the past twenty years, its share in global FDI remains very small. There are numerous reasons for this situation. The lack of adequate infrastructure in many parts of the Continent, the relative absence of macroeconomic and political stability, the weak level of human capital, and the frequent uncertainties affecting national legal frameworks represent only a part of the explanation. Some countries—Nigeria or Angola, to name two—are not doing too badly, essentially due to the presence of vast quantities of oil and/or mineral resources. Given the relatively large size of its market, Nigeria and South Africa also feature among the

principal destinations for FDI in the region. For the great majority of countries, however, FDI stocks and flows remain tiny.

The purpose of this paper is to analyse to what extent other factors beyond the presence of natural resources and country size determine the amount of FDI there is channelled to a particular sub-Saharan African country. In particular, we are interested in what measure the quality of local institutions[1] affects the attraction of FDI. We thus examine the evolution and distribution of FDI flows, on a global level, on the one hand, and within sub-Saharan Africa itself, on the other, before looking at the specific factors which may affect the attraction of FDI in the Continent. Section 4 proposes an empirical econometric model of the factors which influence the allocation of FDI in sub-Saharan Africa and explains the data used and their sources. Section 5 introduces the results of the analysis, putting special emphasis on the connection between governance variables and FDI – the main interest of the paper – and on whether this relationship determines long-term decisions on FDI.

2. The distribution of foreign direct investment

2.1. Global distribution[2]

Global FDI has taken off since the mid-1980s. World annual FDI flows grew from a little over US$50 billion in 1983 to a peak of US$1,400 billion in

[1] In this article, institutions refer to any public organization and entity, law and norm that influence the political, legal and economic environment in a particular country. Institutions are proxied by the quality of governance and are measured by means of six indicators developed by Kaufmann, Kraay and Mastruzzi (2008).

[2] If not otherwise indicated, all data in this section are taken from UNCTAD.

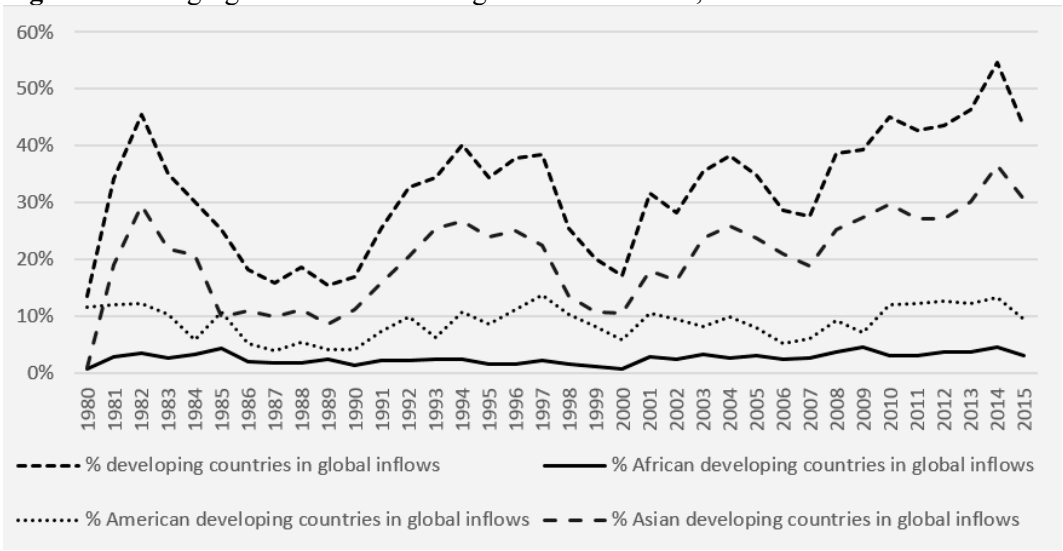
2000. Global flows then decreased by 60% in three years, as the world economy at large experienced a slowdown. From 2004 to 2007, global FDI flows recovered and reached US$1,900 billion, before decreasing again due to the financial crisis in 2008. Global FDI flows went down to US$1,200 billion in 2009 before climbing back to US$1,760 billion in 2015.

Developed countries were first to benefit from this surge in FDI. Emerging countries soon followed suit to the extent that, as in the case of trade (Ezcurra and Rodríguez-Pose, 2014a), today around 50% of FDI is channelled to developing countries. During the 1990s FDI in emerging countries multiplied by a factor of seven, in line with the global trend. The sudden decline in FDI at the beginning of the 21st century was also felt by developing countries, though in much smaller measure. Between 2000 and 2003, the FDI going towards developing countries decreased by 30%, i.e. only half of the global average. Over the following four years, it resumed its previous rate of growth, almost reaching US$500 billion in 2007 (27% of the global total). The 2008 financial crisis represented only a small hiccup for FDI flows towards developing countries. FDI in this part of the world recovered much quicker than in developed countries. After a decline of 20% from 2008 to 2009, investment kept on increasing, reaching US$760 billion in 2015 (43% of the global total).

As illustrated by Figure 1, the developing world's share of total global FDI is highly volatile, often contracting by half, sometimes even more, in the space of a couple of years (e.g. 1983-84 and 1997-2000). However, despite these sudden changes, the general trend in emerging countries has been towards a steady long-term increase, from about 25% of the global total during the 1970s to around 40%

in recent years. This trend has been fundamentally shaped by the trajectories of a handful of countries, including, above all, China and India, but also other Asian countries, such as Singapore, or Mexico and Brazil in Latin America. In 2015, these five countries together attracted 44% of the FDI directed towards emerging countries, with China alone accounting for 18%. The remaining 56% are essentially divided between the Middle East, East and South-East Asia, and the rest of Latin America.

Figure 1: Emerging countries' share of global FDI inflows, 1980 – 2015.



Source: Own elaboration using UNCTAD data.

2.2. The share of sub-Saharan Africa

Africa, by contrast, has been somewhat isolated from these trends. Overall, the whole of Africa has done rather poorly. In North Africa FDI was mainly concentrated in Egypt, which in 2007 accounted for half of the FDI in the region. In sub-Saharan Africa the situation was even worse. Despite the fact that countries south of the Sahara have witnessed a net growth of FDI inflows since the early 1990s, reaching US$42 billion in 2015 – an increase by a factor of 25 between 1990 and 2015 – the starting point was very low. As can be seen in Figure 2, the

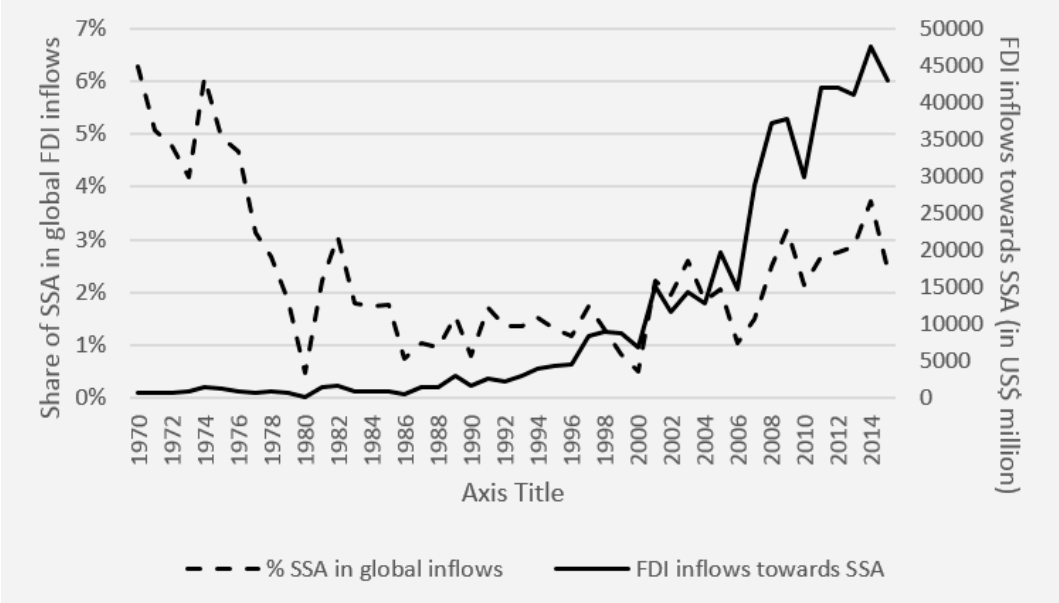
Continent's share of global FDI remains marginal and has not surpassed the 4% mark in 35 years. Since 2003, it has hovered between 2 and 3% of global FDI and we have to go back to before the 1970s in order to find a time when the region accounted for more than 6% of global FDI flows. Sub-Saharan Africa has not only lost ground with respect to the developed world, but also compared to many other emerging economies. Even as the region saw a 218% increase in FDI during the 1980s and 1990s, Latin America registered a growth of 560%, South Asia of 789%, East Asia of 990%, and the developing countries as a whole of 760% over the same period (Asiedu, 2004). During the past 25 years, the region not once managed to attract more than 10% of the FDI directed to developing countries.

Among the principal factors responsible for this gap are the low level of human capital, the economic instability and the lack of infrastructure, not to forget high tariff barriers (internal and external), the difficult and slow implementation of macroeconomic reforms, burdensome tax regimes, and the overregulation of markets feature prominently (Cotton and Ramachandran, 2001). The recent efforts by some countries in sub-Saharan Africa to put in place new policies to attract FDI have not always been successful and often the impact of these policies remains minimal when compared to other developing countries (Asiedu, 2004). The countries which have been more successful in turning around their FDI fortunes have been those, such as Mozambique, Tanzania, or Zambia, where modest privatisation policies and significant advantages in the rule of law and the protection of private property have been achieved (Jenkins and Thomas, 2002).

As is the case with the developing world at large, the FDI directed towards sub-Saharan Africa is concentrated in only a few countries. In 2015, the four principal

recipients of FDI – Angola (US$8,681 million), Mozambique (US$3,711 million), Ghana (US$3,192 million) and Nigeria (US$3,064 million) – alone attracted 43% of all FDI channelled to sub-Saharan Africa. In the same year, four countries together held 52% of the region's total FDI stocks: South Africa (US$124,940 million), Nigeria (US$89,735 million), Mozambique (US$28,768 million), and Ghana (US$26,397 million).

Figure 2: FDI flows towards sub-Saharan Africa: total volume and share of global inflows, 1970 – 2015.



Source: Own elaboration using UNCTAD data.

3. What determines the attraction of FDI in sub-Saharan Africa?

What factors explain the geographical concentration of FDI in certain countries of sub-Saharan Africa and not in others? The drivers of FDI, in general, and in emerging countries, in particular, have attracted considerable interest. Two have been the factors which have drawn the greatest attention as the determinants of FDI in sub-Saharan Africa: the presence of natural resources, on the one hand,

and the role of market size, on the other (Jenkins and Thomas, 2002; Asiedu, 2006).

On the presence of commodities, the concentration of FDI across sub-Saharan Africa basically mirrors – and especially in the case of the least developed countries – the distribution of commodities. The main common denominator of the four largest recipients of FDI in sub-Saharan Africa is the possession of large oil or mineral reserves. Oil and mining products make up, on average, more than 80% of the exports of countries like Angola and Nigeria. In 2015, a group of six countries,[3] whose exports were dominated by commodities, possessed more than 30% of FDI stocks in sub-Saharan Africa. Of the other 70%, South Africa accounted for 24%, leaving less than half of FDI stocks for the remaining sub-Saharan countries.

Yet in the case of Nigeria and South Africa, to mention the two largest economies in the Continent, natural resources probably do not constitute the only or principal reason that would explain their privileged position in the FDI ranking. Although Nigeria is a large producer of oil and South Africa possesses large reserves of gold and platinum – these products making up more than a quarter of its exports in 2015 (WTO, 2017) – both countries also owe their share of FDI to the sheer size of their market, the other key determinant for FDI in sub-Saharan Africa according to the literature (Jenkins and Thomas, 2002; Asiedu, 2006). With a GDP of US$ 486 billion and US$314 billion respectively in 2015, Nigeria and South Africa squarely outrank the other economies in the region. Angola comes a very distant third (US$102 billion), followed by Sudan (US$97 billion). Taken

[3] Angola, Cameroon, Gabon, Mozambique, Nigeria and Zambia (WTO, 2017).

together, these four countries represented 63% of sub-Saharan Africa's 2015 GDP, with Nigeria alone accounting for 30%. In that year, 44 countries shared the remaining 37%, of which only twenty had a GDP greater than US$10 billion (World Bank, 2017).

The pre-eminence of natural resources and market size as the key drivers of FDI generates a number of problems. Firstly, the determination to a large extent of FDI flows by the quantity of natural resources a country possesses implies a much greater volatility in these flows (Ndikumana and Verick, 2008). Price fluctuations for these products mean that the interest of foreign investors in these countries will vary. The commodities boom from the early 2000s to 2014 led to a much greater interest among foreign firms, but the recent oil and gas price drop has generated uncertainty and volatility in FDI flows. Secondly, some of the positive externalities associated with FDI seem to be moderated when FDI is primarily devoted to natural resources. In terms of employment, for example, the impact of FDI is limited, given the predominance of physical capital in this sector. In a 2007 report on FDI in natural resources, UNCTAD noted the lack of benefits from FDI for the economies of recipient countries, and stressed the necessity to establish clearly defined development strategies, so that these countries can turn their abundance of natural resources into sustainable development and profit (UNCTAD, 2007). UNCTAD further recommended the encouragement of industrialisation and diversification, using resource extraction as a catalyst for the creation of new sectors adding value to resources before they are exported, as well as for the promotion of industries capable of responding to the demand for goods and/or services on the part of foreign firms active in the region. Thirdly, if natural

resources and market size are really crucial for the attraction of FDI, many countries in sub-Saharan Africa possess neither large reserves of oil and minerals, nor a large market.

Natural resources and local markets are, however, not the only factors which attract FDI. A number of studies have examined the role of other factors on flows of FDI in sub-Saharan Africa (Jenkins and Thomas, 2002; Basu and Srinivasan, 2002; Asiedu, 2006). Colonial links, different privatisation policies undertaken by African states, and macroeconomic and political stability are considered to play a non-negligible role. Basu and Srinivasan (2002) identify the capacity of governments to implement structural reforms as a fundamental element for the attraction of FDI. The presence of sound monetary and fiscal policies, adequate exchange rate policies, and support for the development of the private sector send strong positive signals to investors. In addition, openness to international trade, the level of human capital, macroeconomic and political stability, corruption (or lack of it), and the quality of infrastructure have, among others, been mentioned as other potential factors driving FDI (Bende-Nabende, 2002; Asiedu, 2002 and 2006). Yet few countries in sub-Saharan Africa can claim to be competitive in any of these areas in comparison to most emerging states in Asia or Latin America. The majority of countries in the region are laden with debt and frequent efforts to contain inflation have left, at best, mixed results. Participation rates in education have risen considerably in recent years (particularly at primary level) (World Bank, 2017), but the quality of teaching as well the rate of students holding higher education degrees still remains low: participation in higher education in 2005 hovered around 4% of the population in the relevant age group (Muco,

2008). Moreover, many investors point to the problem of sub-Saharan Africa's 'bad reputation' (Jenkins and Thomas, 2002). "Countries with better governments and governance attract greater FDI" (Ezcurra and Rodríguez-Pose, 2014b), whereas poor governance as well as a certain incapacity or low speed and effectiveness to implement new reforms have become important barriers for trade and FDI. What may amount to a lack of objectivity on the part of foreign firms perhaps offers a plausible explanation for the weak correlation between the adoption of new policies designed to attract FDI and the actual flows entering sub-Saharan Africa (UNCTAD, 2000).

3.1. The role of institutions

In contrast to the importance attached to the above-mentioned factors, institutional factors have tended to be, if not completely ignored, somewhat overlooked by the scholarly literature on the topic. Factors such as political and economic stability have often been deemed to have a limited effect on FDI in sub-Saharan Africa, especially as many of the reforms are either too recent or have been regarded as not particularly credible by investors (Jenkins and Thomas, 2002). Some research claims that good institutions in Africa may have a negative influence on FDI inflows, arguing that more democratic environments hinder monopolistic or oligopolistic behaviour from large foreign investors, allow businesses to organize and protect themselves from foreign capital, and make it complicated for host governments to offer generous fiscal conditions (Li and Resnick, 2003).

However, according to Asiedu (2006), the evidence is far too thin and institutions represent an important omission in our knowledge about what determines FDI in some of the poorest countries of the world. As she underlines, FDI in Africa is not

only determined by exogenous factors. The quality of institutions – proxied by the level of corruption and the rule of law – is a sufficiently important factor explaining why FDI prefers some countries in the region to others (Asiedu, 2006).

Good institutions can trump the presence of relatively large markets or natural resources. A country with a low level of corruption and where the rule of law applies is more likely to see its FDI stock increase (Asiedu, 2006). But more than whether the quality of institutions makes a difference, the question is to what extent is the role of institutions important in comparison to that accorded to other factors such as natural resources or markets. Asiedu and Lien (2011) indicate that democracy and FDI are positively correlated in countries where natural resources account for a low share of total exports, while the correlation becomes negative for countries where exports are largely dominated by primary commodities. However, many questions remain. Does an improvement in institutions suffice to counterbalance the lack of natural resources and the small size of some African markets? Can small countries that only possess few natural resources hope to see their FDI stock grow in the same measure as natural resource rich countries, such as Nigeria or Equatorial Guinea? While the answers to these questions are certainly debatable — and this will form the subject of the econometric analysis of this paper — it is logical to assume that better institutions will positively affect the amount of FDI a country succeeds in attracting and that the effect of institutional quality on FDI flows will be long-lasting as institutional change generally happens at a slow pace (Putnam, 1994; Rodríguez-Pose, 2013) and certainly slower than changes in the price of natural resources or in the size of African economies. As has been underlined, an increase in FDI inflows would

ensure a greater diversification of investors who will be attracted by factors other than commodities, thereby partly solving the problem of the lack of benefits from FDI for the local economy.

Overall, the existing literature on the determinants of FDI in sub-Saharan Africa has failed to reach a strong consensus about which are the essential determinants for inward investment – or, at least, on the dimension of the impact of individual variables. While some regard political and economic stability and trade openness as strong promoters of FDI – the key issue seems to be related not to these factors, but to their credibility – other authors, for example, see market size as being the most significant factor for FDI (Jenkins and Thomas, 2002; Asiedu, 2006). Others, in contrast, do not even mention it (Basu and Srinivasan, 2002). The same holds for human capital, to which Asiedu (2006) alone seems to attach any importance. Anyanwu and Yameogo (2015) demonstrated that domestic investments and the urbanization rate – the latter associated with the creation of urban clusters, transport corridors and the necessary infrastructure – tend to attract FDI in sub-Saharan Africa.

In any case, the most astonishing gap in the literature relates to institutions and good governance. Only Asiedu places institutional variables at the centre of her analysis, without sufficiently scrutinising them, as she contents herself with observing the influence of corruption levels and of the rule of law (Asiedu, 2006). This paper will aim to fill this gap by dividing the notion of good governance into six distinct variables, while controlling for a host of other factors identified in the literature as key promoters of FDI in sub-Saharan Africa. It will also explore the time influence of country-level institutional quality. The slow pace of institutional

change may imply that institutional conditions can determine FDI inflows into specific countries and other economic outcomes for years and, in some cases, decades to come.

4. Model and data

4.1 Econometric analysis

This section aims to provide an answer to the three main questions emerging from the discussion above. The first is what is the role of institutions – and in particular good governance – on the attraction of FDI towards countries in sub-Saharan Africa. Second, whether this role by institutions is more or less significant than that awarded to other key factors behind FDI, such as a country's endowment of natural resources and its market size. And, third, whether the effect of institutions on FDI flows persists in time. The model used in order to address these questions adopts the following form:

$$FDI_{i,t} = \alpha + \beta Gov_{i,t} + \lambda Natres_{i,t} + \theta MSize_{i,t_0} + \phi X_{i,t} + \mu_t + \varepsilon_i \qquad (1)$$

where *FDI* depicts the foreign direct investment as a percentage of GDP received by country *i* in any given year *t*; *Gov* represents a matrix of variables depicting the quality of governance; *Natres* is an indicator of natural resources, proxied by the percentage of oil and mining and exports; *MSize* represents an indicator of the potential market in any given country; and *X* is a vector of other variables which are assumed to influence the location of FDI. Finally, μ are unobservable time-specific effects and ε depicts the residual factor.

4.2. Data

Dependent variable

The dependent variable is represented by the FDI inflows as the percentage for GDP in every sub-Saharan African country for which complete sets of data are available. FDI inflows are preferred to stocks as they present a snapshot of the current situation without (or only marginally) taking into account the historical events that have influenced a country's FDI stock. The GDP data are taken from the Economic Outlook Database of the International Monetary Fund. The data concerning FDI inflows are available from the United Nations Conference on Trade and Development.

Explanatory variables

- Good governance

The explanatory variables of interest are linked to the notion of good governance. Good governance is measured by means of six indicators developed by Kaufmann, Kraay and Mastruzzi (2008) at the World Bank, which are based on hundreds of individual variables contained in 35 databases that were compiled by 32 different organisations (Kaufmann, Kraay, and Mastruzzi, 2008). The six 'good governance' variables include: *voice and accountability*; *political stability and absence of violence*; *government effectiveness*; *regulatory quality*; the *rule of law*; and *control of corruption*. These indicators aim to represent the perceptions of governance held by the public and private sectors, NGOs, businesses, and individual citizens. Information for the variables is gathered from organisations located in different regions of the world in order to minimise potential biases. The

authors attribute each variable a value ranging from -2,5 (poor performance) to 2,5 (excellent performance). Given that political instability, lack of government credibility and poor quality of institutions are often cited as factors that limit the amount of FDI directed towards sub-Saharan Africa, the expectation is, *a priori*, that a good performance in any of these domains would be related to higher levels of FDI.

In particular, each of the six good governance indicators represents the following. *Voice and accountability* measures the perception of the capacity of the citizens of a given country to participate in the selection of its government, alongside the freedoms of expression, assembly, and the press. *Political stability* aims to assess the probability that a government would be destabilised or overthrown by violent or unconstitutional means, and also includes politically motivated violence and terrorism. *Government effectiveness* assesses the perception of the quality of public services and of the civil servants who deliver them, as well as their degree of independence from political pressure. It also takes into account the quality of policy formulation and implementation, along with the credibility of a government's policy commitments. *Regulatory quality* measures the perception of a government's capacity to formulate and implement sound regulatory policies that facilitate and promote the development of the private sector. *Rule of law* gauges the confidence actors have in societal rules, as well as the respect accorded to them, with particular reference to the reliability of contracts, property rights, the police, and the courts. It equally considers the levels of crime and violence. Finally, *control of corruption* assesses the extent to which the public sector is used

for private ends, including both minor and major forms of corruption, and any 'appropriation' of the state by elites and private interests in general.

Because of the high correlation among some of the 'good governance' variables, we resort to principal component analysis (PCA) in order to create a number of composite variables capable of capturing different institutional and governance dimensions in sub-Saharan Africa. Three composite governance variables are created. These are *government quality*, *citizens' rights and political stability*, and *overall governance*.

Government quality combines the three variables, which according to their respective definitions best reflect the quality of government in a general sense. These are *government effectiveness*, *regulatory quality*, and *control of corruption*. The outcomes of the PCA have the expected signs and are listed in Annex 1a. The first principal component, which we use as our government quality variable, accounts for 79% of the total variance.

Citizens' rights and political stability combines the remaining governance variables. The first principal component, used as the composite variable, explains almost 82% of the total variance (Annex 1b).

Overall governance combines all six variables as a means to evaluate the importance of the quality of governance at large in the attraction of FDI. All the variables included in the composite governance index have the expected signs and the first principal component accounts for almost 75% of the total variance (Annex 1c).

- Natural resources and market size

The relevance of the good governance variables for FDI is weighed against that of the two other fundamental factors for the attraction of FDI in sub-Saharan Africa, according to the scholarly literature: natural resources and market size.

Regarding *natural resources*, the African Continent probably possesses more natural wealth than any other region in the world and for many sub-Saharan African countries proceeds from natural resources are a substantial source of revenue. It is therefore essential to include a variable that permits the assessment of the actual influence of these resources on the distribution of FDI in sub-Saharan Africa. We therefore look at oil and mining products as a share of any given country's total exports. The relevant figures are taken from the statistical database the World Trade Organisation (WTO, 2017). A positive correlation between a country's quantity of natural resources and the flows of FDI it attracts is to be expected.

Market size has also been generally perceived as a key driver of FDI across the world, although, because of the presence of relatively small markets, its influence may not be quite as felt in many sub-Saharan African countries. We proxy the size of the market of a country by its overall GDP, measured at constant prices. The GDP data are the same as those used for the denominator of the dependent variable. We expect, as per the relevant literature, the relationship between market size and FDI to be positive. However, we use the natural logarithm of GDP as the positive effect of the market is likely to fizzle out beyond a certain threshold.

- Other control variables

We also control for an additional number of factors which, according to the literature, may have some influence on the attraction of FDI. These include the *wealth of the population* proxied by GDP per capita at constant prices. As Asiedu (2002) points out, the views on the association between this variable and FDI are ambiguous. A higher level of wealth generally bodes well for investment, since a company would want to place its products on the local market upon establishing itself in a country. A lower level of wealth, on the other hand, could spark the interest of investors, as poorer countries may offer a greater potential return on capital. It is therefore difficult to anticipate *ex ante* what the sign of the coefficient will be. The figures for GDP per capita are extracted from the International Monetary Fund's online database. Following the same logic as in the case of *market size*, GDP per capita is expressed as a logarithm.

Macroeconomic stability is also used as another potential driver of FDI. We use the inflation rate as our proxy for macroeconomic stability. The source of data is, once more, the International Monetary Fund. High levels of inflation are a clear symptom of macroeconomic instability, leading to the expectation of a negative relationship between this variable and the dependent variable.

The two final variables represent *human capital* and *market openness*. The endowment of *human capital* in any given country is likely to have a positive association with FDI; the better the endowment of human capital, the higher the level of FDI. However, this potential association is likely to be mediated by the type of investment coming into the country and it is therefore not always clear-cut that the association would always be positive. As educational data are frequently elusive, we resort to the enrolment rate in primary education as our measure of

human capital. The data are taken from the World Bank (WB, 2008). The final variable is *market openness*. It is expected that open markets would facilitate trade with the rest of the world and particularly favour investors seeking to export their products. *Market openness* is measured by the total of a country's imports and exports as a share of GDP. The relevant figures come from the online database of the World Trade Organisation (WTO, 2009). The sign of the coefficient is expected to be positive.

The key variables and their sources are presented in Table 1.

Table 1. Summary of the variables used in the econometric analysis

Variable	Measure	Source	Expected sign
Dependent variable			
FDI flows	FDI inf*lows in %* of GDP	UNCTAD and IMF	/
Good governance variables			
Voice and accountability Political stability Government effectiveness Regulatory quality Rule of law Control of corruption	Value between -2,5 and 2,5	World Governance Indicators (World Bank)	+
Natural resources and market size			
Natural resources	% of oil and mining products in exports	WTO	+
Market size	Log GDP		+
Other control variables			
Wealth of the population	Log GDP per capita	IMF	?
Macroeconomic stability	Inflation rate		-
Human capital	Enrolment rate in primary education	World Development Indicators (World Bank)	+
Market openness	Imports + exports in % of GDP	WTO and IMF	+

5. Results of the analysis

Model (1) is estimated by means of a balanced panel data analysis for the 22 sub-Saharan African countries[4] for which complete sets of data are available. Two

[4] The countries considered in the analysis include Burkina Faso, Cameroon, Ivory Coast, Ethiopia, Gabon, Gambia, Ghana, Mauritius, Kenya, Madagascar, Malawi, Mozambique, Niger, Nigeria, Senegal, South Africa, Sudan, Tanzania, Togo, Uganda, Zambia, and Zimbabwe.

periods considered. First, the analysis is conducted between 1996 and 2005, covering the period before the commodity-driven hike in FDI towards sub-Saharan Africa. Second and in order to evaluate the medium- to long-term influence of country level conditions on FDI, the connection between specific country conditions during the period between 1996 and 2005 and FDI 10 years later – that is between 2006 and 2015 – is estimated. Following the results of the Hausman test, panel data estimations with random effects are preferred to the use of fixed effects. Four main tables are extracted from the analysis. In Table 2 the results of estimating model (1) are presented for every single individual 'good governance' variable. Table 3 introduces the three composite governance variables (*government quality*; *citizens' rights and political stability*; and *overall governance*), while Table 4 inserts a dynamic element to the analysis, by looking at the evolution of the coefficients of the six governance variables over time. The same analysis is conducted for up to 3 annual lags. For each regression a number of normality, specification error, heteroscedasticity, and autocorrelation tests are conducted. Finally, Table 5 looks at the medium- to long-term impact of FDI, by connecting country specific conditions between 1996 and 2005 with FDI flows between 2006 and 2015.

Regressions (1) through (6) in Table 2 assess the connection between each of the individual 'good governance' variables (*voice and accountability*; *political stability*; *government effectiveness*; *regulatory quality*; the *rule of law*; and *control of corruption*) and foreign investment in sub-Saharan Africa, while controlling for natural resources, market size, and the other independent variables. In regression

(7) all the governance variables are included together simultaneously, although the significance of this latter regression is seriously undermined by problems of multicollinearity, derived from the high level of correlation between the individual governance variables.

The results of the analysis highlight that the quality of governance of different sub-Saharan nations makes an important difference for FDI (Table 2). Five out of the six good governance variables considered display significant coefficients. Countries that are politically more stable, which have more effective governments, where the rule of law prevails, and which tend to control corruption, once other factors are controlled for, attract FDI to a much greater extent than countries that do not. The only exceptions are *regulatory quality*, which seems to be completely dissociated from FDI in sub-Saharan Africa, and *voice and accountability*, which has a negative association with FDI.

On top of quality of governance a number of other control variables display a strong connection with FDI in sub-Saharan Africa. This is particularly the case, as was expected by theory, of the presence of natural resources. The coefficient for our *natural resources* proxy is always a positive and significant, indicating that African nations with a good endowment of oil and minerals are magnets for FDI. The other factor highlighted by the literature as a key determinant of FDI, *market size*, displays by contrast a non-significant coefficient in all regressions. Once other factors are controlled for, it does not seem that foreign investors are attracted by the dimension of the market of African countries. Similarly, *market openness* is also totally dissociated from FDI. A further sign that markets may not seem to matter for FDI in sub-Saharan Africa is the negative and insignificant

coefficient of the *wealth of the population* in all regressions. Richer countries not only do not attract greater FDI, but, once other factors are controlled for, seem to be pushing FDI away. Finally, human capital is positively connected to FDI, while macroeconomic instability, proxied in our analysis by the inflation rate of every country, displays the expected negative and significant sign.

Table 2. Estimation of the model (1) with individual good governance variables.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dependent variable: FDI inflows as a % of GDP							
Natural resources	0.026***	0.027***	0.031***	0.026***	0.031***	0.033***	0.029***
	(0.0079)	(0.0078)	(0.0078)	(0.008)	(0.0079)	(0.008)	(0.0075)
Market size	-0.0003	0.472	-0.431	-0.045	0.127	-0.232	0.065
	(0.893)	(0.908)	(0.868)	(0.89)	(0.876)	(0.868)	(0.753)
Wealth level of the population	-3.083***	-3.386***	-3.425***	-3.38***	-3.238***	-3.392***	-3.095***
	(1.036)	(1.029)	(1.005)	(1.041)	(1.008)	(1.01)	(0.791)
Inflation rate	-0.011***	-0.007**	-0.007**	-0.008**	-0.006*	-0.007**	-0.006
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.003)	(0.004)
Human capital	0.038**	0.03*	0.029*	0.034*	0.023	0.033*	0.02
	(0.018)	(0.018)	(0.017)	(0.018)	(0.018)	(0.017)	(0.015)
Market openness	-0.374	-0.67	-0.767	-0.303	-1.302	-1.132	-1.044
	(1.33)	(1.313)	(1.307)	(1.342)	(1.358)	(1.333)	(1.278)
Voice and accountability	-0.663*						-1.811***
	(0.369)						(0.401)
Political stability		0.879***					0.66*
		(0.313)					(0.356)
Government effectiveness			1.459***				1.768***
			(0.467)				(0.607)
Regulatory quality				0.447			0.171
				(0.347)			(0.376)
Rule of law					1.304**		0.071
					(0.526)		(0.66)
Control of corruption						1.161***	0.659
						(0.419)	(0.526)
Constant	7.780**	8.181**	12.066***	9.482***	10.001***	10.965***	9.96***
	(3.725)	(3.643)	(3.664)	(3.646)	(3.576)	(3.619)	(3.078)
Time controls	YES	YES	YES	YES	YES	YES	YES
R^2 within	0.2050	0.2334	0.2230	0.1969	0.2058	0.2088	0.3089
R^2 between	0.1062	0.0727	0.1269	0.0821	0.1305	0.1295	0.2578
R^2 overall	0.1122	0.0903	0.1404	0.0929	0.1379	0.1419	0.2716
Normality of Residuals (prob>chi^2)	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0003
Ramsey – Reset (prob>chi^2)	0.0459	0.3885	0.3978	0.2454	0.0205	0.0451	0.0000
Heteroscedasticity (prob>chi^2)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Autocorrelation (prob>F)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Number of observations	176	176	176	176	176	176	176

*Standard error is in parentheses. *, ** and *** denote significance at 0.10, 0.05 and 0.01 respectively.*

In Table 3 we introduce the three composite governance variables calculated by means of principal component analysis (PCA) in replacement of the

individual variables. The introduction of the composite governance variables does not affect the sign and significance of the coefficients of the control variables.

The combination of individual governance variables into composite variables does not alter the perception that governance matters for FDI in sub-Saharan Africa. *Government quality* displays a clearly positive and significant coefficient, while the association between *citizens' rights and political stability* and FDI is positive, but not significant. Finally, the combination of all six individual governance variables, *overall governance*, is strongly and positively connected with FDI. This indicates that countries with the best levels of governance in sub-Saharan Africa are also those more likely to attract FDI, once other factors such as the presence of natural resources, macroeconomic stability and human capital – which appear to be the other main drivers of FDI – are taken into account.

Table 3: Estimation of the model (1) with the composite good governance variables.

Variables	(1)	(2)	(3)
Dependent variable: FDI inflows as a % of GDP			
Natural resources	0.0299***	0.0287***	0.0296***
	(0.0078)	(0.008)	(0.0079)
Market size	-0.147	0.033	0.008
	(0.88)	(0.897)	(0.888)
Wealth level of the population	-3.686***	-3.294***	-3.492***
	(1.033)	(1.035)	(1.037)
Inflation rate	-0.0053	-0.0078**	-0.0061*
	(0.0035)	(0.0036)	(0.0036)
Human capital	0.0303*	0.031*	0.029*
	(0.017)	(0.018)	(0.018)
Market openness	-0.695	-0.737	-0.813
	(1.305)	(1.345)	(1.327)
Government quality	1.007***		
	(0.317)		
Citizens'rights and political stability		0.431	
		(0.299)	
Overall Governance			0.574**
			(0.24)
Constant	11.684***	9.509***	10.578***
	(3.704)	(3.657)	(3.689)
Time controls	YES	YES	YES
R^2 within	0.2336	0.1954	0.2153
R^2 between	0.0903	0.0903	0.0850
R^2 overall	0.1102	0.1005	0.1002
Normality of Residuals (prob>chi^2)	0.0000	0.0000	0.0000
Ramsey – Reset (prob>chi^2)	0.2260	0.1764	0.2285
Heteroscedasticity (prob>chi^2)	0.0000	0.0000	0.0000
Autocorrelation (prob>F)	0.0000	0.0000	0.0000
Number of observations	176	176	176

*Standard error is in parentheses. *, ** and *** denote significance at 0.10, 0.05 and 0.01 respectively.*

In order to test whether the connection between good governance and FDI in sub-Saharan Africa expands beyond the short-term, we introduce two different types of analyses: a) we consider a series of annual lags in model (1) (Table 4); and b) we analyse the connection between country-level conditions during the period 1995-2006 and FDI 10 years later (2006-2015) (Table 5).

Table 4 reports only the coefficients for the six governance variables without the controls. The introduction of time lags does not fundamentally alter the

coefficients of the control variables. Market size and market openness remain insignificant in all specifications of the model, whereas the positive and significant association between natural resources and FDI persists in time. The same could be said for the negative connection between wealth and inflation, on the one hand, and FDI, on the other. If anything, and as could be expected, the coefficients tend to become somewhat weaker over time. The only control variable which experiences a change in coefficient is human capital, which becomes insignificant once in the first time lag is introduced in the analysis.

Regarding the governance variables, only *rule of law* and *control of corruption* show a consistent and enduring association with FDI in sub-Saharan Africa. Countries that effectively apply the rule of law and have better systems for the control of corruption are capable of attracting a greater share of FDI relative to their GDP. Investors deem it to be unlikely that the legal framework of a country and its level of corruption can change radically in the relative short-term and hence, once a certain level has been reached in these two areas, investors may consider the risk that the country will regress to be generally relatively small. *Government effectiveness* displays a similar behaviour, although its significance tends to wane with time, as shown by the coefficient in the regression including three annual lags (Regression 4). Making a government more effective is a task that requires patience, which, in turn, renders it difficult for the newly acquired effectiveness to collapse in the short-term.

Table 4. Dynamic analysis.

Variables	(1) No lag	(2) 1 lag	(3) 2 lag	(4) 3 lag
Dependent variable: FDI inflows as a % of GDP				
Voice and accountability	-0.663* (0.369)	-0.483 (0.396)	-0.415 (0.449)	-0.458 (0.511)
R^2 overall	*0.1122*	*0.1000*	*0.0898*	*0.0908*
Political stability	0.879*** (0.314)	0.317 (0.353)	0.033 (0.417)	-0.356 (0.482)
R^2 overall	*0.0903*	*0.0840*	*0.0764*	*0.0906*
Government effectiveness	1.459*** (0.467)	1.582*** (0.503)	1.068* (0.579)	0.757 (0.644)
R^2 overall	*0.1404*	*0.1327*	*0.1106*	*0.0900*
Regulatory quality	0.447 (0.347)	-0.276 (0.361)	-0.906** (0.397)	-1.423*** (0.424)
R^2 overall	*0.0929*	*0.1005*	*0.1076*	*0.1255*
Rule of law	1.304** (0.526)	2.047*** (0.567)	1.931*** (0.641)	1.976*** (0.697)
R^2 overall	*0.1379*	*0.1406*	*0.1236*	*0.0981*
Control of corruption	1.161*** (0.419)	1.488*** (0.438)	1.696*** (0.482)	2.035*** (0.51)
R^2 overall	*0.1419*	*0.1369*	*0.1146*	*0.0795*
Number of observations	176	154	132	110

*The standard error is in parentheses. *, ** and *** denote significance at 0.10, 0.05 and 0.01 respectively.*

Finally, Table 5 reports the results of regressing the three key determinants of FDI – natural resources, market size, and institutional quality – between 1996 and 2005 on FDI 10 years later, between 2006 and 2015. The results highlight that both natural resources and institutional quality trump market size as the fundamental determinants of FDI in sub-Saharan Africa over the medium- and long-term. The coefficients for natural resource endowment and the different institutional variables, by and large, remain positive and significant. By contrast,

that for market size, which was insignificant in Tables 2 and 3, becomes negative and significant at the 1% level. This implies that, once institutions and natural resources are accounted for, large countries in Africa attract less and not more FDI over the medium-term. Moreover, four of the six institutional quality variables – voice and accountability, political stability, government effectiveness, and control of corruption – seem to exert a long-lasting influence on the amount of FDI that is directed to any particular sub-Saharan African country ten years later (Table 5). Hence, countries with poor governance quality can endure the consequences of their weak institutions over a considerable amount of time.

Table 5. Institutional conditions (1996-2005) and FDI 10 years later (2006-2015).

Variables	(1)	(2)	(3)	(4)	(5)	(6)
Dependent variable: FDI inflows as a % of GDP						
Natural resources	0.0779***	0.0644***	0.0783***	0.0644***	0.0696***	0.0737***
	(1.499)	(1.458)	(1.601)	(1.514)	(1.592)	(1.654)
Market size	-0.4599***	-0.2745***	-0.4710***	-0.3974***	-0.3788***	-0.4126***
	(0.837)	(0.909)	(0.891)	(0.848)	(0.839)	(0.853)
Voice and accountability	2.418***					
	(0.628)					
Political stability		1.715***				
		(0.593)				
Government effectiveness			2.333***			
			(0.884)			
Regulatory quality				0.826		
				(0.760)		
Rule of law					1.164	
					(0.798)	
Control of corruption						1.544*
						(0.906)
Constant	19.34***	12.30***	19.80***	16.31***	15.90***	17.11***
	(3.380)	(3.460)	(3.670)	(3.417)	(3.338)	(3.451)
Time Controls	YES	YES	YES	YES	YES	YES
Number of observations	220	220	220	220	220	220
Number of years	10	10	10	10	10	10
R^2 overall	0.217	0.193	0.188	0.165	0.169	0.172

*Standard error is in parentheses. *, ** and *** denote significance at 0.10, 0.05 and 0.01 respectively.*

Overall, the results of the empirical analysis indicate that FDI in sub-Saharan Africa is mainly driven by two out of the three key factors identified by the literature. FDI flows towards countries with a good endowment of natural resources. Hence, countries with a good endowment of natural resources but relatively weak institutions, such as Nigeria, can still attract a considerable amount of FDI.

But right next to natural resources is the prominent role played by governance and institutional aspects on the attraction of FDI. Our analysis underlines that the quality of governance of any given sub-Saharan African nation is definitely connected to the flows of FDI entering that country. In a general manner, this is demonstrated by the coefficient obtained for the *overall governance* variable, which, in addition to being positive, is significant at 5% level. These results regarding the importance of the quality of governance for FDI are reinforced by the strongly significant and positive coefficients for the composite variable *government quality*, as well as by those for the majority of the individual governance variables. More stable, effective, and less corrupt governments that uphold the rule of law act as magnets for FDI in sub-Saharan Africa. Investors have a tendency to shy away from unstable governments, as well as from those regarded as ineffective or where corruption is rife. A functioning legal system and a comparatively low level of crime drive inward investment. Property rights and the reliability of contracts are also crucial for any investor, making the rule of law key amongst the factors driving FDI. More importantly, good institutions have a long-lasting influence on the perception of investors, as the quality of governance in Africa at a given point still determines FDI ten years down the line.

By contrast, the third key determinant of FDI in sub-Saharan Africa – market size – does not make a difference for FDI and, if anything, it may be detrimental for foreign investment. This may be related to the fact that even the largest markets in the region are too small to influence investment decisions, and because many foreign firms export their products outside the countries where they invest in and out of sub-Saharan Africa as a whole. If certain commodity-rich countries have a relatively large market compared to the rest of the region, such as Nigeria or South Africa, this is not necessarily the case for most other countries well-endowed with natural resources. Hence a country like Gabon, where oil and mining products made up more than 80% of exports between 1996 and 2005 (WTO, 2017), remains a tiny market[5] and one with low prospects for significant expansion. Investors in sub-Saharan Africa are first and foremost concerned with the presence of natural resources and the institutional conditions which would guarantee their investment. Whether these countries have a relatively large internal market is of secondary interest and thus irrelevant in the context of our analysis.

The coefficients for the remaining control variables suggest that investors are attracted to poor countries, reinforcing the idea that getting returns from relatively well-off local markets is not one of the main objectives. FDI also takes the level of human capital into consideration. Everything else being equal, foreign investors prefer countries with a relatively good level of education of the labour force to those where the levels of skills are lower. Macroeconomic stability is also a key determinant of FDI, confirming the results of the literature. Multinational

[5] GDP of US$8,7 billion in current prices in 2008 (IMF, 2009).

companies and foreign investors will have an interest in avoiding unstable markets. Last but not least, the openness of a local market does not seem to influence the amount of FDI being channelled to specific sub-Saharan African countries. This may also be the result that in sub-Saharan Africa even the most open countries on paper do not necessarily have policies in place conducive to greater trade. Countries such as the Ivory Coast, Gabon, Ghana, Mauritius, Togo, and Zimbabwe rank amongst the most open in the Continent, but still make a motley crew in terms of the levels of trade and political stability.

6. Conclusion

The aim of this article has been to look at the determinants of FDI in sub-Saharan Africa, paying special attention to the role played by institutional factors and the quality of governance in this respect. The econometric analysis, applied to a total of 22 sub-Saharan African countries for the period between 1996 and 2015, identifies the presence of natural resources, of a degree of macroeconomic stability and of a good level of human capital as important assets for sub-Saharan African countries in their efforts to attract FDI. The size, internal wealth, and openness of a market, however, play an insignificant or, in some cases, negative role for FDI.

The most important finding of the paper relates, however, to the key variable of interest; quality of governance. Despite being somewhat neglected by the literature on FDI in sub-Saharan Africa in the past, we have been able to prove that the quality of local governance plays a non-negligible role in the distribution

of FDI in sub-Saharan Africa. Stable, more credible and effective, and less corrupt regimes greatly encourage and facilitate FDI, as does having a sound and effective legal system in which investors can place their trust. And the positive effects of good institutions on FDI endure over a considerable amount of time.

African leaders are becoming increasingly aware of the importance of local institutions for FDI and are adopting measures aimed at not only improving their countries FDI intake, but also securing a more steady and sustainable inflow of investment. This evolution towards better governance and a greater respect for citizens' and investors' rights is a means to arrive to a more just and sustainable society and also gives reason for hope that investors will eventually change their perception of sub-Saharan Africa and allocate a greater share of global FDI to the region. In that case, a snowball effect could even ensue, with more inward investment signalling both the conduciveness of an environment to FDI and good perspectives for economic and employment growth in the future. Even so, it should be kept in mind that such a phenomenon, which would enable the countries of the region to make their economies more diverse and more dynamic, will only materialise if Africa's leaders and its population as a whole display a clear willingness to address the institutional shortcomings that have plagued the development of the Continent and to make sure that any institutional improvements remain over time.

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Annex 1. Principal component analysis. Governance variables

Annex 1a: Quality of government

Eigenanalysis of the Correlation Matrix – Quality of government

	PC1	*PC2*	*PC3*
Eigenvalue	2.3659	0.4642	0.1698
Proportion	0.7887	0.1547	0.0566
Cumulative	0.7887	0.9434	1.000

Coefficients of the PCA

Variable	*PC1*	*PC2*
Government effectiveness	0.6139	-0.0902
Regulatory quality	0.5475	0.7643
Control of corruption	0.5687	-0.6385

Annex 1b: Citizens' rights and political stability

Eigenanalysis of the Correlation Matrix – Citizens' rights and political stability

	PC1	*PC2*	*PC3*
Eigenvalue	2.4500	0.3692	0.1807
Proportion	0.8167	0.1231	0.0602
Cumulative	0.8167	0.9398	1.0000

Coefficients of the PCA

Variable	*PC1*	*PC2*
Voice and accountability	0.5691	-0.6688
Political stability	0.5616	0.7411
Rule of law	0.6006	-0.0593

Annex 1c: *Overall governance*

Eigenanalysis of the Correlation Matrix – Overall governance

	PC1	*PC2*	*PC3*	*PC4*	*PC5*	*PC6*
Eigenvalue	4.4919	0.5553	0.4779	0.2242	0.1544	0.0961
Proportion	0.7487	0.0926	0.0797	0.0374	0.0257	0.0160
Cumulative	0.7487	0.8412	0.9209	0.9582	0.9840	1.000

Coefficients des composants principaux

Variable	*PC1*	*PC2*
Voice and accountability	0.4298	-0.1676
Political stability	0.3622	0.8410
Government effectiveness	0.4282	-0.4293
Regulatory quality	0.3806	-0.1282
Rule of law	0.4394	0.1710
Control of corruption	0.4034	-0.1862