AFRICA GROWTH INITIATIVE
WORKING PAPER 19 | DECEMBER 2016

Africa Growth Initiative
at BROOKINGS

DOMESTIC RESOURCE MOBILIZATION AND EXTERNAL FINANCING: WHEN DOES GOVERNANCE MATTER? Evidence from sub-Saharan Africa

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Acknowledgments and authors' note:

The authors thank Rabah Arezki for his comments on an earlier draft and Christina Golubski for editorial assistance. All errors or omissions remain ours. December 2016.

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INTRODUCTION

This paper studies the relationship between two global priorities: financing for development and good governance. The Addis Ababa Action Agenda of the Third International Conference on Financing for Development identifies domestic revenue mobilization as central to achieving the Sustainable Development Goals (SDGs). The Action Agenda also recognizes the importance of international finance in the development process (United Nations, 2015). At the same time, the process leading to the SDGs has emphasized good governance as a development priority. One of the SDGs (Goal 16) is solely dedicated to the "[promotion] of peaceful and inclusive societies for sustainable development, [the provision] of access to justice for all and [building] effective, accountable and inclusive institutions at all levels."

But does "good governance" really matter for mobilizing financing for development? And if so, do different financing sources respond equally to good governance? In particular, do domestic financing sources respond to good governance in the same way as external financing sources?

The literature has addressed the first question of whether governance matters for mobilizing financing flows. However, except for Faria and Mauro (2009) who focus on the external capital structure of countries, little is said about whether *domestic* financing sources, government revenues in particular, respond to governance in a different way than *foreign* financing sources. In this paper, we use the World Governance Indicators (WGI) to study how good governance relates to financing sources in sub-Saharan African countries. In particular, we focus on tax revenue on the one hand and on foreign direct investment (FDI) and official development assistance (ODA) on the other. We also take a look at remittances and illicit financial flows in spite of data limitations.

We conduct three separate tests. First, we use Spearman rank correlations to look at the relationship between WGIs and the different types of financing sources. Second, we run panel data regressions where we control for a number of indicators, such as GDP per capita and natural resource rents, which can have an effect on financial flows. Third, we conduct robustness tests using settler mortality as an instrument for governance. The

three analyses all point to the same main finding: Good governance does indeed matter for financing development. However, we find that while good governance matters for raising domestic revenues, its effect on external financing sources is mixed. Good governance does not appear to matter much for FDI or is negatively associated with such flows to the region while ODA is positively associated with good governance.

Our results indicate that the bigger bang for improving governance is at home in the form of increased tax revenue (excluding resource rents). This is all the more important as domestic revenues are the largest sources of development finance. Although good governance does not help raise more resource rents, it has a positive effect on non-resource government revenues. Improving governance can support African countries' efforts to diversify away from natural resources and increase government revenues coming from the non-resource sector.

Improving governance also appears to attract more ODA. In contrast, the inconclusive or negative response of FDI to good governance points to the importance of pursuing efforts on the global agenda that aim at increasing transparency in the natural resource sector (the most important destination of FDI in the region) and on emerging efforts to curb illicit financial flows. We also look at remittances to and illicit financial flows from the region and find that they are associated with governance indicators.

Throughout our analysis, corruption is the governance indicator that is consistently the most significant among the six indicators we consider. This result indicates that addressing corruption in the region could yield quick and important gains in terms of raising the much-needed financing for development.

The rest of the paper continues as follows. First, we use a simple correlation analysis to assess the relationship between good governance and different financing sources. Second, we review the existing literature and use panel data estimations to study this relationship. Finally, we conduct robustness tests before concluding with policy recommendations.

II. GOVERNANCE INDICATORS IN SUB-SAHARAN AFRICA

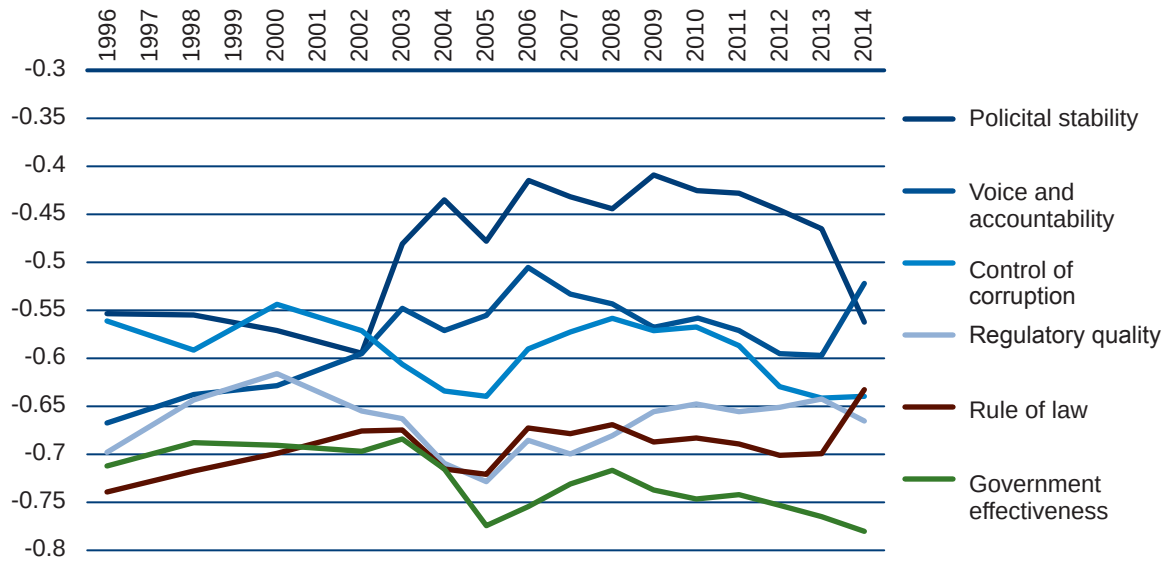
While there are many definitions of "governance," we use the World Governance Indicators (WGI) to evaluate and quantify governance in sub-Saharan African countries (see Annex 1). These indicators have been used extensively in empirical studies, and their advantages and limitations have been extensively documented (Kaufmann, Kraay, and Mastruzzi, 2010). The indicators are generated using underlying data collected from 31 different data sources including: micro-level household and firm surveys (e.g., Gallup Poll), non-governmental organizations (e.g., Freedom House, Reporters without Borders), public sector organizations (e.g., World Bank's CPIA), and commercial business information providers (e.g., the Economist Intelligence Unit). The six indicators—whose values range from -2.5 to 2.5—reflect three aspects of governance:

- Process by which governments are selected, monitored, and replaced
  - *Voice and accountability* looks at the ability of a country's citizens to select their government, as well as freedom of expression, freedom of association, and free media
  - *Political stability* and absence of violence measures the likelihood of political instability and/or politically motivated violence
- Capacity of government to effectively formulate sound policies
  - *Government effectiveness* looks at the quality of public services
  - *Regulatory quality* captures the ability of governments to create and implement sound policies conducive to the development of the private sector
- The respect of citizens and the state for the institutions that govern economic and social interactions among them
  - *Rule of law* captures the extent to which the rules of society are trusted and respected
  - *Control of corruption* measures the extent to which public power is used for private gains

Although governance indicators are correlated, and it is difficult to detect particular trends for the three broad categories detailed above, a closer look at the data shows that specific governance indicators in sub-Saharan Africa have evolved differently over time (see Figure 1). The indicators for *corruption, government effectiveness*, and *political stability* deteriorated since 1996 while measures of *regulatory quality, rule of law*, and *voice and accountability* improved. An improvement in *political stability* was largely witnessed in the early 2000s, but after 2009, *political stability* deteriorated to a level below that of 1996.

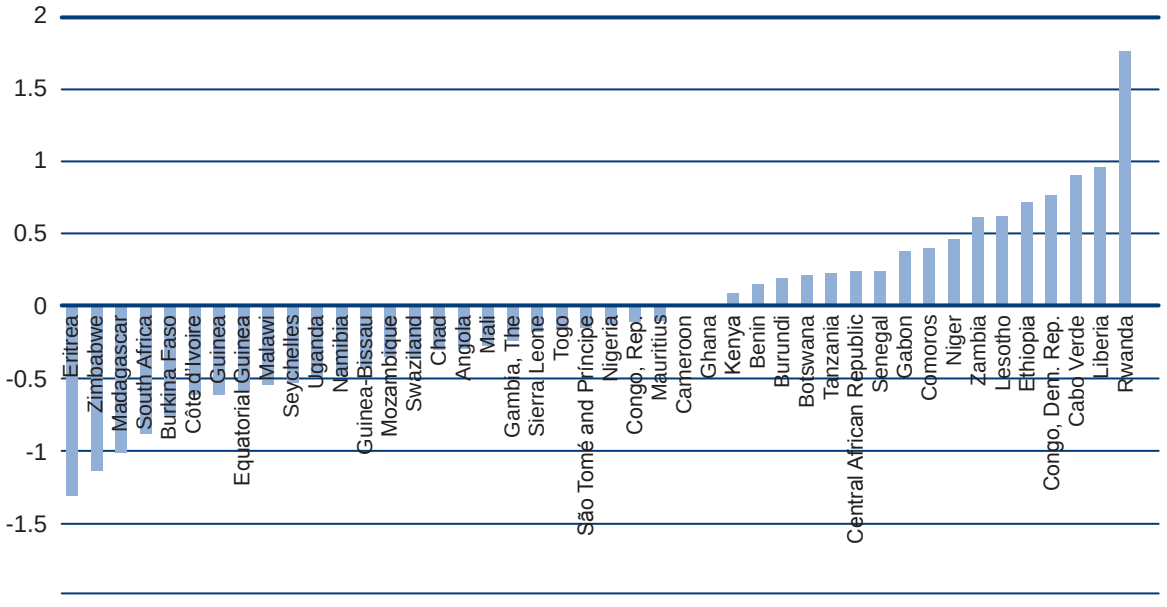
The estimate measuring *voice and accountability* has improved the most, while the *control of corruption* has weakened the most (Figure 1); however, indicator performance varies across countries (Figure 2). The largest improvements in the *control of corruption* have been seen in Rwanda, Liberia, and the Democratic Republic of the Congo. Conversely, in South Africa, Zimbabwe, Eritrea, and Madagascar, the control of corruption estimate has worsened. Indeed, corruption has been cited as one of the "major impediments to structural transformation in Africa," (UNECA, 2016). In its latest African Governance Report, the United Nations Economic Commission for Africa lists three drivers of corruption in the region: (i) weak institutions that have allowed political leaders and civil servants to misuse public funds; (ii) the declining standard of living of public servants that has turned corruption into a livelihood; and (iii) the role of foreign companies and private interests as corruptors.

Figure 1. World Governance Indicators, 1996-2014



Source: World Governance Indicators.

Figure 2. Unit change in control of corruption, 1996-2014

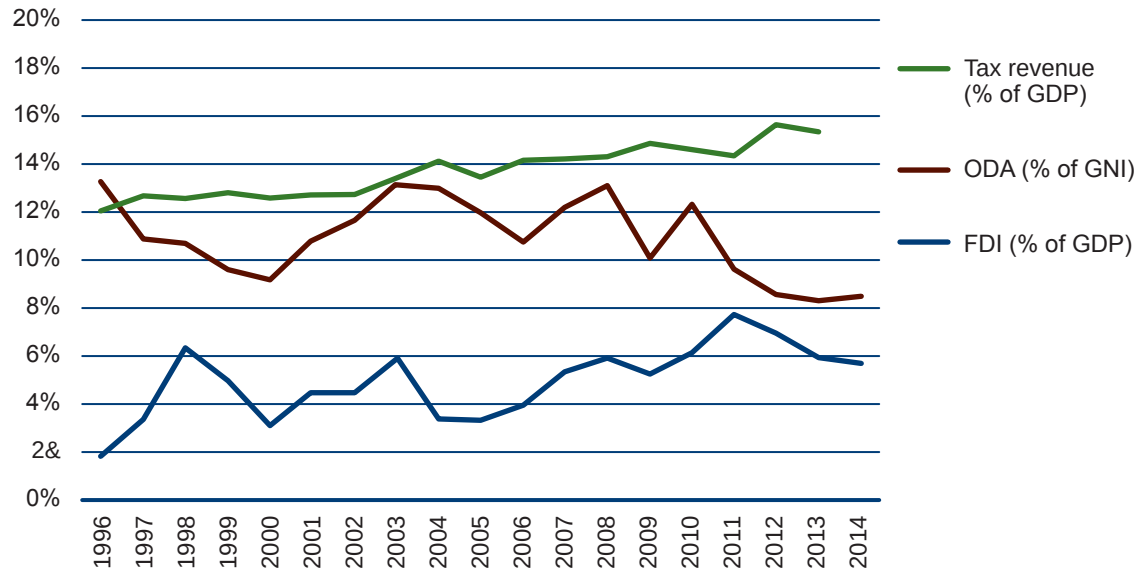


Source: World Governance Indicators.

III. GOOD GOVERNANCE AND FINANCIAL FLOWS IN SUB-SAHARAN AFRICA

Domestic revenues, notably tax revenue, as well as external financial flows such as foreign direct investment (FDI) and official development assistance (ODA) have the potential to significantly and positively affect the development trajectory of African countries. Indeed, the Addis Ababa Agenda recognizes the importance of mobilizing financing sources to finance the efforts to meet the sustainable development goals (SDGs). Among financing sources, government revenues are the most important as a share of GDP (see Figure 3) and while the region has received significant flows of aid and increasing net amounts of foreign investment, tax revenues largely surpass the inflows of foreign capital (Figure 3). However, all sources of finance remain important given the scale of the development needs. In particular, fragile and lower-income countries in the region still heavily depend on official development assistance (Sy and Rakotondrazaka, 2015). In spite of data limitations, we also consider proxies for remittances to and illicit financial flows from the region, given their increasing importance.

Figure 3. Evolution of financial flows sub-Saharan Africa, 1996-2014



Source: UNCTAD, World Economic Outlook, World Development Indicators, Prichard et. al, 2014.

Correlation analysis

We use Spearman rank pairwise correlations between the six WGIs and the financial flows to gain a sense of how good governance is related to domestic and external finance.[1] As we discuss the relationship between the variables, we must emphasize that correlation does not imply causation. A strong positive (or negative) significant correlation coefficient does not imply the existence of a causal relationship between the studied indicators.

At first glance, **domestic resource mobilization has a stronger relationship with governance than external flows of capital.** Overall, there is a strong positive correlation between domestic resource mobilization and good governance. Tax revenue is positively correlated with governance. The correlation analysis finds a weak relationship between external flows and governance. We do not find a significant correlation between illicit financial flows and remittances on one hand and governance on the other.

There is no clear indication that good governance positively affects foreign direct investment. This could indicate that investors do not respond to good governance or that they have ways to manage the lack of good governance. For instance, foreign investors may decide to invest in the infor-

Table 1. Pairwise correlation between financial flows (as % of GDP) and WGI (1996-2014) in sub-Saharan Africa

		Process by which governments are selected, monitored and replaced		Capacity of government to effectively formulate sound policies		The respect of citizens and the state for the institutions that govern economic and social interactions among them	
		Voice and accountability	Political stability	Government effectiveness	Regulatory quality	Rule of law	Control of corruption
External flows	FDI % GDP	0.1132	0.2893*	0.0366	-0.0383	0.1282	0.1117
	ODA (% of GNI)	-0.053	-0.203	-0.2842*	-0.2772*	-0.198	-0.0489
	Remittances (% of GDP)	0.2077	0.012	0.0328	0.1164	0.1129	0.1237
	Illicit financial flows (% of GDP)	-0.0705	0.1249	-0.1667	-0.1782	0.0134	0.0385
Domestic resource mobilization	Tax revenue (% of GDP)	0.4830***	0.5147***	0.5712***	0.4510***	0.6024***	0.6706***

** Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.*

mation, communication, and technology (ICT) sector in Africa, irrespective of the governance of recipient countries because they expect high returns. One exception seen in the correlation analysis is the importance of *political stability* for attracting foreign direct investment. We could conclude that foreign investors place a higher value on *political stability* than the other governance indicators. For example, with 21 percent, Equatorial Guinea, one of the highest recipients of FDI (as a percentage of GDP), places in the bottom quartiles of most governance indicators (Table 2). However, the country is relatively politically stable.

Table 2. Top 10 FDI-receiving countries and governance indicators

	FDI as a percentage of GDP	Control of corruption quartile (1: Worst; 4: Best)	Government effectiveness quartile (1: Worst; 4: Best)	Voice and accountability quartile (1: Worst; 4: Best)	Political stability quartile (1: Worst; 4: Best)	Regulatory quality quartile (1: Worst; 4: Best)	Rule of law quartile (1: Worst; 4: Best)
Liberia	27.2	2	1	2	1	1	1
Equatorial Guinea	21.1	1	1	1	3	1	1
Seychelles	12.0	4	4	4	4	3	4
Republic of the Congo	11.6	1	1	2	2	1	1
Mozambique	11.0	3	3	3	4	3	3
São Tomé and Principe	10.2	3	3	4	4	2	3
Chad	7.8	1	2	1	1	2	1
Madagascar	6.9	4	2	3	3	3	3
Angola	6.7	1	2	1	2	1	1
Cabo Verde	6.5	4	4	4	4	4	4

ODA (in percent of GNI) is negatively correlated with all indicators of governance. **Countries with worse governance indicators receive more ODA (as a share of GNI).** This may be explained by the fact that such countries are the most in need of foreign aid. Specifically, the indicators that measure the government's ability to generate sound policies—*government effectiveness* and *regulatory quality*—have a significantly negative link with ODA. Intuitively, ODA is allocated to the poorest countries. As seen in the table below, countries with the lowest GDP per capita tend to receive relatively high ODA. With a few exceptions—notably Mozambique and Malawi—these countries have relatively low scores on the governance indicators.

Although the correlation coefficients above give us some idea about the association between good governance on the one hand and domestic and external flows on the other, they do not control for a number of explanatory variables such as GDP per capita or natural resource rents. In the rest of the paper, we use regression analysis to obtain a better picture of the relationship between governance and financing flows.

Table 3. Top 10 aid-receiving countries, GDP, and governance

	ODA a percentage of GNI	Real GDP per capita	Government effectiveness quartile (1: Worst; 4: Best)	Regulatory quality quartile (1: Worst; 4: Best)
Liberia	55.1	211.8	1	1
Burundi	22.9	216.7	1	1
Ethiopia	11.6	240.4	3	2
Democratic Republic of the Congo	13.0	319.8	1	1
Niger	13.2	341.0	2	2
Mozambique	20.5	342.6	3	3
Sierra Leone	20.0	405.1	1	2
Malawi	21.6	414.7	3	3
Madagascar	10.8	417.3	2	3
Guinea	7.5	427.3	2	2

Regression analysis using an average governance indicator

In a first step, we use the average of the six WGIs for each country in our sample as a proxy for governance. Results from a panel regression of the average governance indicator on financing flows, controlling for income levels (log GDP per capita on a PPP basis), natural resource rents, and trade openness indicate that governance helps explain the volume of tax revenue, ODA, and FDI (Annex 3, Table 1). In particular, we find a significant and positive relationship between governance and the log of tax revenue and the log of ODA. In contrast, we find a significant negative relationship between governance and the log of FDI. When we focus on financing flows as a share of GDP, we find a significant and positive relationship between governance and ODA (as a percentage of GNI). As will be outlined later in the discussion, many bilateral and multilateral aid programs use good governance as a condition for aid disbursement.

The literature on the World Governance Indicators typically advises against taking the average of the six indicators and using it for analytical purposes as they each measure different aspects of governance (Kaufmann, Kraay, and Mastruzzi, 2010). In the rest of the paper, we therefore focus on the relationship between the six individual world governance indicators on one hand and the financial flows on the other.

We still question whether there is a statistically significant relationship between good governance and financing sources. If so, does good governance affect domestic finance differently than external finance?

III.1 EXTERNAL FINANCIAL FLOWS

To complement the correlation analysis above, we outline the existing literature on the topic and run a number of panel regressions to assess the relationship between good governance and each type of external financial flow. There are reasons to argue for a positive or negative effect of good governance on such flows.

III.1.1. Foreign direct investment

A number of empirical studies have found that good governance has a positive effect on FDI. In a study looking at the empirical reasons for the lack of flow of capital from rich to poor countries, a study by Alfaro et al. (2008) finds that between 1970 and 2000, low institutional quality is the leading explanation for the differential in inflows of capital between rich and poor countries. To put it in perspective, the paper states that if Peru's institutional quality was to improve to Australia's level, foreign investment would increase fourfold. In addition, the paper argues that foreign investment is the channel through which institutional quality affects long-term development. The paper suggests that in the aim to increase capital inflows, governments should improve stability, improve property rights, reduce corruption, and improve law and order (Alfaro et al., 2008)

In a study looking at the effect of governance infrastructure on FDI flows, Globerman and Shapiro (2002) find that **governance infrastructure is an important determinant of both FDI inflows and outflows**. Additionally, the effectiveness of governance infrastructure is subject to the law of diminishing returns. Therefore the positive effect of governance on FDI is more pronounced for smaller developing economies; the returns to investment in good governance are greater for developing countries. Specifically, the study finds that good political governance—characterized by policies promoting competition, open and transparent regulatory regimes, and effective delivery of government services—is more important than political voice, political stability, and rule of law (Globerman and Shapiro, 2002). Additionally, in a 2003 study focusing on U.S. investment abroad, the authors find that the United States directs foreign investment towards relatively well-governed countries. Additionally, within the countries that receive U.S. FDI, governance infrastructure is an important determinant of the amount received (Globerman and Shapiro, 2003). A 2013 PricewaterhouseCoopers survey finds that companies looking to conduct business in Africa cite political instability as their greatest concern (PwC, 2013).

While good governance is strongly associated with increased FDI flows, some aspects of governance appear to be more important than others. In a study looking at the effect of corruption on growth, Paulo Mauro (1995) finds that corruption has a reducing effect on investment, which in turn negatively affects growth. The paper states that if Bangladesh was to improve its integrity and bureaucratic efficiency to the level of Uruguay, the investment rate would rise by more than 5 percentage points. Other important determinants of growth include political stability and bureaucratic efficiency (Mauro, 1995).

A second paper by Paulo Mauro, co-authored with André Faria, finds that the external capital structure of countries—i.e., the relative share of FDI, portfolio equity, and external debt in a country's external finance—is highly determined by institutional quality. While other factors such as educational attainment,

openness, and natural resource endowment are important, institutional quality is the strongest determinant of the country's external capital structure. The paper concludes by stating that measures that aim to improve a country's capital structure should be evaluated carefully as they are sometimes undermined by poor institutional quality (Mauro and Faria, 2009).

In a study looking in at the disaggregated effect of governance on FDI—using panel data from 20 developed and developing countries—the authors find that, out of the six WGIs, only two have a significant impact on FDI: *political stability* and *regulatory quality*. When solely focusing on developing economies, the study finds that *regulatory quality* is the only governance indicator positively and significantly correlated with FDI (Saidi et al., 2013). Other important institutional determinants of FDI include government stability, the absence of internal and ethnic conflict, and basic democratic rights (Busse and Hefeker, 2005). Additionally, Ibrahim et al. (2011) find a negative link between corruption and FDI inflows. Analyzing the flows of FDI towards oil-exporting African countries, they find that market size, past levels of inward FDI, reduced corruption, domestic credit, and share of oil in total exports are significant drivers of FDI, while political and institutional risk indicators are insignificant. Another study by Yogoub Ali Gangi and Rafid S. Abdulrazak (2010) finds that only three governance indicators are significantly linked to FDI flows to Africa: *voice and accountability, rule of law,* and g*overnment effectiveness*. A 2015 study by the Banco de España finds that while institutional quality matters for FDI inflows, the two most important governance indicators are *government effectiveness* and r*egulatory quality* (Alvarez, 2015).

Conversely, other scholars have found a negative link between good governance and foreign investment. For instance, Ezeoha and Cattaneo (2012) use panel data from 1995 to 2008 to explore the effect of financial development, macroeconomic conditions, and institutional factors on the flows of FDI to the region. Contrary to the studies mentioned above, this paper finds a positive effect of corruption on FDI flows. This effect is higher in resource-rich countries. Still, despite the positive effect of corruption on FDI flows, the authors state that governments must strive to improve governance and fight against corruption, in order to attract the "right kinds of FDI," i.e., FDI that promotes inclusive economic and social development. In their 2005 paper titled, "How Corruption Influences Foreign Direct Investment: A Panel Data Study," Peter Egger and Hannes Winner state that corruption can serve to attract foreign investment as it "greases the wheels […] in the presence of preexisting government failures." Nevertheless, the authors also find that the inviting effect of corruption on FDI is declining, as other factors, such as market size, are becoming increasingly important (Egger and Winner, 2005).

Using FDI inflows as well as FDI stock data from the United Nations Conference on Trade and Development (UNCTAD) statistics database for our dependent variables, we run a panel fixed effects regression looking at the effect of governance indicators on FDI, where we control for trade openness, natural resource rents as a percentage of GDP, and log GDP per capita.[2] **We do not find a significant relationship between governance and FDI (as a percentage of GDP). There is one exception: the *government effectiveness* indicator is positively and significantly correlated with FDI as a percentage of GDP**. **Additionally, when we use the log of the inward FDI stock, we find that all six**

governance indicators are negatively and significantly correlated with FDI (Annex 3, Table 2).

There are instances where the lagged effect of governance is more significant than the present effect. For example, there may be a lag between an investor's decision to invest and the moment during which a flow of FDI is recorded in official statistics. To test for such a delayed effect of governance on FDI, we regress the lagged governance indicators against inward FDI (as a percentage of GDP). We find a **positive relationship between *control of corruption* and FDI inflows lagged two years** suggesting that ***control of corruption* might not have an immediate effect on FDI inflows but rather a delayed pull effect on inflows of foreign direct investment** (Annex 3, Table 3). However, corruption is the only governance indicator where we see this lagged effect of governance as other lagged governance indicators were not significant.[3]

III.1.2. Official development assistance

There are two channels through which governance can affect aid. First, **good governance can help countries meet donors' good governance conditions, which would then allow them to receive aid.** Second, poor governance can negatively affect growth prospects. In this scenario, we would witness a **negative relationship between governance and aid as aid is often allocated to countries with relatively low income.**

A study on the effect of corruption on aid does not find a positive effect of governance on aid inflows. Actually, the study finds that **corrupt governments receive higher amounts of aid** (Alesina and Weder, 1999). The authors looked at the source of aid and found that Scandinavian countries donate to less corrupt countries while the United States donates to more corrupt countries. Conversely, a 2012 study by Kamiljon Akramov, finds that **the quality of governance affects the likelihood of being eligible for aid.** All other things equal, the author finds that low governance countries have a lower probability of receiving aid than high governance countries. As expected, the analysis also finds that recipient needs—as measured through income per capita and life expectancy—are other important determinant of aid inflows (Akramov, 2012).

Political and strategic considerations can be significant determinants of aid inflows. In a study looking at whether developed countries respond to the variables that make aid effective in reducing poverty (e.g., institutions), David Dollar and Alberto Alesina (2009) find that aid is more driven by strategic and political considerations (such as colonial ties) than the quality of institutions. For instance, in the case where countries A and B have similar income levels, and country A has poor institutions with strong ties to a former colonizer, and country B has strong institutions and was never colonized, the paper finds that country A would receive larger amounts of aid than country B. The paper also finds that different donors allocate aid differently: Nordic countries positively respond to good institutions, while France allocates aid to its former colonies, without paying much attention to the recipient's politico-economic regime. The United States' aid pattern is strongly influenced by its interest in the Middle East.

The research on the effectiveness of aid conditionality yields split results. On one side of the argument, scholars argue that conditionality has no significant effect on policy reform (Santiso, 2001; Dijkstra, 2002). Conversely, some scholars argue that conditionality forces countries to slowly imple-

ment governance reforms (Gyimah-Brempong et al., 2012; Zanger, 2000). Overall, conditionality is a controversial issue, as the countries that need aid the most are often the ones with the worst governance scores (Kapur and Webb, 2000; Riegner, 2012). Thus disbursing aid based on the "good governance" criteria can penalize low-income fragile states.

Another question is, does aid perform better in countries with good governance? A 2000 paper by David Dollar and Craig Burnside finds that aid is most effective in countries where good fiscal monetary and trade policies are present. Conversely, in the presence of poor policies, aid has a small effect on growth. A more recent study by Cevdet Denizer, Daniel Kaufmann, and Aart Kraay examines the effectiveness of World Bank-funded projects and find that over the last 25 years, World Bank projects have performed better in well-governed countries (Denizer, Kaufmann, and Kraay, 2013). While aid may flow to poorly governed countries—as these countries often fall in the low-income countries (LIC) category—aid performs better in well-governed countries.

Over the years, a handful of organizations—such as the World Bank and the Millennium Challenge Corporation (Annex 2)—have included a good governance condition in some of their lending programs. Bilateral donors have also been increasingly focused on promoting good governance. For instance, the Swedish International Development Agency (SIDA) provides development assistance by means of a country-strategy progress, which includes an assessment of good governance (Chakravarti, 2005).

Using ODA data from the World Development Indicators, we run a panel fixed effects regression looking at the effect of governance on ODA (as a percentage of gross national income), we find that, as we control for log GDP per capita,[4] the governance indicators are significantly and positively correlated with ODA. There are two exceptions: *political stability* and *rule of law,* which are not statistically significant. In other words, **when we control for income levels, development assistance is allocated to relatively well-governed countries** (Annex 3, Table 4).

III.2. DOMESTIC RESOURCE MOBILIZATION

Domestic resource mobilization—defined here as the domestic generation of revenue—can serve as an important tool for developing countries to attain and sustain high rates of growth when they are allocated to socially productive investments (Culpeper and Bhushan, 2010). Given the volatility of FDI flows and the reduction in aid budgets, domestic resource mobilization is becoming increasingly important for financing African development.

III.2.1. Tax revenue

Many studies highlight the importance of governance for building a strong tax base. A study by Ajaz and Ahmad (2010) looks at the effects of corruption and governance on tax revenue, using panel data from 25 developing countries—including Côte d'Ivoire, Nigeria, and South Africa—over the 1990-2005 period. **They find that corruption has a negative effect on tax collection.** Moreover, good governance improves countries' tax collection efforts (Ajaz and Ahmad, 2010). Gupta (2007) looks at the determinant of tax revenue efforts in developing countries. He finds that GDP per capita, agricultural share in GDP, trade openness, and aid are important determinants of tax revenue. Other determining factors include corruption and political stability. Specifically, the paper finds that **corruption has a more significant effect than political stability on tax collection efforts (Gupta, 2007).**

Bird, Martinez-Vasquez, and Torgler (2008) look at the effect of corruption and voice and accountability on tax efforts in developing and high-income countries. The paper argues that a **country's tax structure is highly responsive to its governance structure.** The paper states that while supply-side factors—described as the easily taxed economic activities such as foreign trade and mining—matter for increasing tax income, demand-side factors—corruption, voice, and accountability—are also determinants of tax effort to a significant extent. The paper states that supply-side factors, e.g., natural resource endowment, can significantly improve tax efforts. (As will be highlighted later, oil-rich African countries are not necessarily the ones with the highest tax-to-GDP ratio.) However, demand-side factors, such as corruption, voice, and accountability, also have a significant determining effect on tax efforts. For instance, taxpayers who perceive their governments to be corrupt may not be willing to comply with tax laws. Demand-side factors are easier to shape than supply-side factors: While is it possible to improve a country's institutional quality, it is quite hard to increase a country's natural resource endowment. The authors thus suggest that policy recommendations on improving tax efforts stress the importance of a good institutional environment for tax collection.

In a paper looking at the costs and mitigating strategies, the IMF Fiscal Affairs and Legal Departments study the link between corruption and tax revenue. The study finds a significant effect of corruption—measured by Transparency International on a 0-100 scale—on tax revenue as a share of GDP. Specifically, the study finds that a one standard deviation improvement (22 points) in the corruption perception index, leads to a 0.88 percentage point increase in tax revenue as a percentage of GDP. The paper lists several reasons that can perpetuate the existence of a negative link between corruption and taxation. For instance, corruption can fuel a government official's ability to provide tax cuts to corporations. In addition, this could also reduce taxpayers' willingness to pay taxes. As taxpayers perceive that large companies are not paying their

fair shares, they might be unwilling to comply with tax laws (IMF, 2016).

However, in resource-rich countries, the existence of a positive relationship between governance and taxation remains debatable. For instance, Bornhorst et al. (2008) find that good governance does not necessarily translate into an improved tax base when a country is resource rich.

Many tax data sets include revenue from natural resources, which, if used, could create erroneous results in the analysis. It is important to separate tax revenues from natural resources from other types of taxes. For instance, Angola shows a tax-to-GDP ratio above 40 percent when tax revenues from oil are included. A closer look at the data shows, however, that the country's tax-to-GDP ratio, when excluding natural resource revenue, stands at about 7.27 percent. In order to solve this discrepancy, we use tax revenue data from the International Center for Tax and Development (ICTD), which, using disaggregated data from the IMF Article IV reports, generates tax figures that exclude natural resource rents.

Table 4. Top 10 tax-collecting countries and governance

	Tax Revenue (% of GDP)	Control of corruption quartile (1: Worst; 4: Best)	Government effectiveness quartile (1: Worst; 4: Best)	Political stability quartile (1: Worst; 4: Best)	Regulatory quality quartile (1: Worst; 4: Best)	Rule of law quartile (1: Worst; 4: Best)	Voice and accountability quartile (1: Worst; 4: Best)
Lesotho	45.5	4	4	3	3	4	3
Swaziland	28.3	3	3	3	3	3	1
Namibia	26.9	4	4	4	4	4	4
Seychelles	26.5	4	4	4	3	4	4
South Africa	26.3	4	4	3	4	4	4
Zimbabwe	19.0	1	2	2	1	1	1
Cabo Verde	18.0	4	4	4	4	4	4
Senegal	17.4	3	4	3	4	4	4
Mauritius	16.9	4	4	4	4	4	4
Botswana	16.9	4	4	4	4	4	4

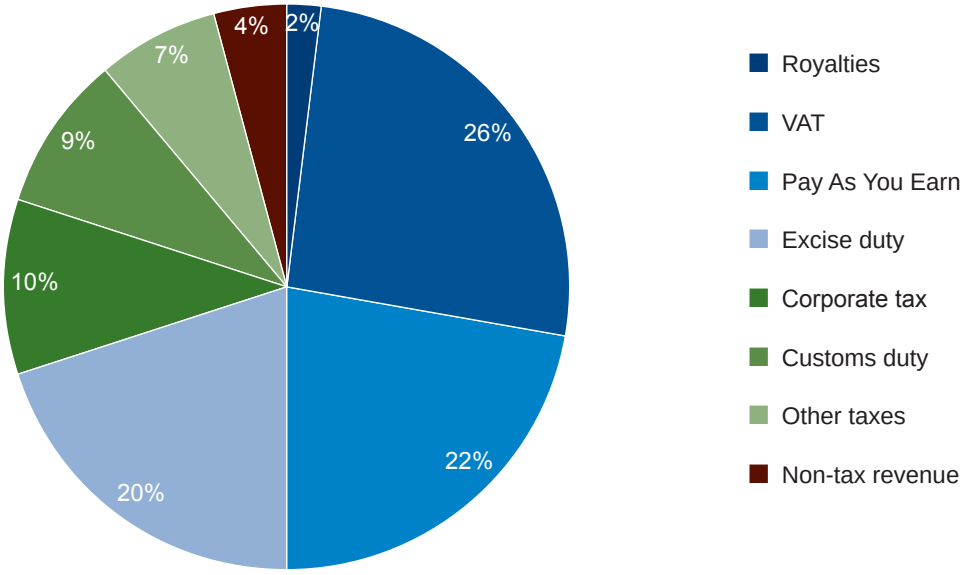
Table 4 shows the 10 countries with the highest tax-to-GDP ratio in sub-Saharan Africa. Most countries in the list have relatively good governance scores. The only exception is Zimbabwe, which scores in the bottom half of all governance indicators. In Zimbabwe, a high percentage of government revenue is generated from taxes: As seen in Figure 4, in 2015, taxes made up 96 percent of government revenue.

Over the last decade and a half, Zimbabwe received little funding from multilateral organizations, as the country has accumulated arrears. For instance, Zimbabwe currently owes the IMF and the World Bank $111 million and 1 billion, respectively (Pilling and England, 2016). Thus, the country has had to overly rely on tax revenue to raise government revenues. Currently, the personal income tax rate is relatively high with a maximum of 50 percent, and the corporate tax rate stands at 26 percent.

The case of Zimbabwe, where poor governance is associated with high tax revenues, may not be as surprising as it looks. Gerard and Ruiz (2009) study the United States' tax environment and find that the tax rate increased during periods of crisis (such as during WWI, WWII, and the Vietnam War). In such periods, the government needed more resources. Conversely, the tax rate decreased when the country was relatively stable.

Using the data highlighted in the previous paragraph, we run a fixed effects panel regression of governance indicators on tax revenue (as a percentage of GDP) and find that the coefficients for the *control of corruption* and *voice and accountability* indicators are positive and significant. In addition, when we look at the effect of governance on the log of tax revenue, we find that all the governance indicators—with the exception of control of corruption and government effectiveness—are positively and significantly correlated with the dependent variable (Annex 3, Table 5). In addition, poor governance scores are associated with high natural resource rents-to-GDP ratios; all six WGI are negatively and significantly associated to resource rents (Annex 3, Table 6).

Figure 4. Contribution to total national revenue by revenue source, Zimbabwe, January–September 2015



Source: Zimbabwean Ministry of Finance and Economic Development.

IV. ILLICIT FINANCIAL FLOWS

Illicit financial flows and remittances are two additional flows that affect Africa's resources available for financing development. Illicit financials flows are illegitimately withdrawn from Africa, thus challenging domestic resource mobilization efforts and leaving a resource gap that is tentatively filled with aid and foreign investment. As most statistics rely on proxies to capture illicit financial flows, our analysis may not fully capture the relationship between illicit financial flows and governance.

Despite the levels of ODA and FDI the African continent receives, Africa is currently a net creditor to the world. When looking at net resource transfers, the outflow of capital surpasses the inflow of capital into the continent. The large outflow of capital from the African continent is largely driven by the high amount of unrecorded capital flows, also called illicit financial flows (IFFs). Global Financial Integrity (2015) estimates that up to $1.4 trillion in net resources transfer left the African continent between 1980 and 2009. The resources transferred out through illicit financial flows could be used for domestic development. For example, one report estimates that, in 2009, illicit financial flows out of Africa were three times the amount of ODA received (Kar, 2013).

Bad governance is both a cause and consequence of illicit financial flows. On one hand, bad governance enables illicit financial flows. Weak institutions and poor regulatory environments create an enabling environment for the outflow of illicit capital (UNECA, 2014). Corruption, notably, is an important determinant of illicit financial flows as the funds are often earned through illegal means that involve corruption (Goredema, 2011). On the other hand, illicit financial flows also enable bad governance as they reduce the resources necessary for the government to provide social services and increase accountability.

As seen in Table 5 below, the three countries with the highest illicit financial flows to GDP ratio score in the bottom half of the *political stability* indicator. In Liberia, over the coverage period, the average amount of emitted illicit financial flows is greater than the country's average GDP. This was notably seen in 2006 and 2007, when illicit financial flows made up 224.5 and 233.1 percent of GDP, respectively. In recent years, however, the IFF-to-GDP ratio declined. In 2013, the IFF-to-GDP ratio fell down to 28.1 percent. The remaining seven countries in the top 10 have relatively good political stability scores.

In aggregate amounts, South Africa and Nigeria, the two largest economies in the region, emit 56 percent of illicit financial flows out of the continent, with South Africa alone emitting 30 percent of all illicit financial flows from sub-Saharan Africa. South Africa scores in the top quartile for both indicators.

Using data from Global Financial Integrity, which provides figures for illicit financial flows between 2004 and 2013, our panel fixed effect regression of the governance indicators on illicit financials flows finds that **there is a significant positive relationship between control of corruption and illicit financial flows** (Annex 3, Table 7). In other words, countries with relatively controlled levels of corruption emit the highest amounts. This could mean that as corruption is controlled at home, illicit financials flows are sent abroad where the risk of expropriation is potentially lower. When we regress governance indicators on log illicit financial flows, we find that regulatory quality is positively and significantly associated with illicit financial flows.

Table 5. Top 10 emitters of illicit financial flows and political stability

	Illicit financial flows (% of GDP)	Political stability quartile (1: Worst; 4: Best)
Liberia	114.6	1
Togo	73.2	2
Sierra Leone	27.3	2
Lesotho	19.4	3
Zambia	18.6	4
Swaziland	16.1	3
Equatorial Guinea	14.7	3
Namibia	14.3	4
Malawi	12.1	3
Botswana	11.8	4

Table 6. Top 10 emitters of illicit financial flows, government effectiveness, and regulatory quality

	Illicit financial flows (in billions of dollars)	Government effectiveness quartiles (1: Worst; 4: Best)	Regulatory quality quartile (1: Worst; 4: Best)
South Africa	20.92	4	4
Nigeria	17.80	2	2
Zambia	2.89	2	3
Ethiopia	2.58	3	2
Côte d'Ivoire	2.33	2	2
Togo	2.23	1	2
Equatorial Guinea	2.18	1	1
Republic of the Congo	1.52	1	1
Namibia	1.39	3	4
Botswana	1.37	4	4

V. REMITTANCES

Remittances—money transfers from foreign workers to their home countries—play an important role in African development as such inflows make up a large part of the GDP in certain African countries. As seen with the literature on aid, a number of papers looking at the relationship between remittances and governance find that remittances negatively affect governance, without addressing the inverse direction of the relationship. A few studies have looked at the relationship between remittances and good governance, finding a negative effect of remittances on governance (Ahmed, 2013; Gautam, 2014).

Studies on the effectiveness of remittances insist that, in order for remittances to have an effective impact, i.e., promote investment and increase credit availability, good institutions must be in place. In order to direct remittances toward growth enhancing activities, good governance is crucial (Olubiyi, 2013; Ahoure, 2008).

Using remittances data from the world development indicators (WDI), the regression analysis, focusing on the net inflow of remittances finds that countries with the lowest scores in control of corruption receive the largest inflows of remittances (as a percent of GDP). Such countries include Liberia, Togo, Nigeria, and Uganda, who all score in the bottom half of the indicator in question. In other words, corruption has an increasing effect on the inflow of remittances (Annex 3, Table 8). Conversely, countries with relatively high rule of law and regulatory quality scores see relatively high inflows of remittances (as a percentage of GDP).

Table 7. Top 10 remittances recipients and control of corruption

	Remittances (% of GDP)	Control of corruption quartile (1: Worst; 4: Best)
Lesotho	39.9	4
Comoros	17.9	2
Liberia	13.5	2
Cabo Verde	12.2	4
The Gambia	12.2	3
Senegal	8.0	3
Togo	7.1	2
Nigeria	5.6	1
Mali	4.6	3
Uganda	4.3	2

VI. REVERSE CAUSALITY AND ROBUSTNESS TESTS

Although this paper studies the effect of good governance on financing flows, it is possible that the reverse may be true as financing flows may affect governance indicators. Looking at whether foreign aid harms political institutions, Jones and Tarp (2016) find a small positive net effect of total aid on political institutions. The authors find that the results vary depending on the type of aid provided. The paper distinguishes "governance aid" from "economic aid." Governance aid is used to strengthen government policies and plans, the public sector, and civil society organizations. Economic aid is used to support the production sector (agriculture and industry) as well as infrastructure and trade-related activities. Flows of governance aid are largely and positively associated with good political institutions. Conversely, "economic aid" has a less significant relationship with political institutions. While the impact of governance aid is relatively easy to measure, due to donor requirements, the authors state that the outcomes from economic aid are rather difficult to verify and funds can be misused (Jones and Tarp, 2016).

The reverse causality is also seen with domestic resource mobilization. Brautigam et al. (2008) argue that well-designed tax systems can help create stable institutions and improve democratic accountability in developing counties, as they lead to increased revenues and can help direct government spending toward public sector provision. They state that taxation fuels requests for representation. They give the example of Western Europe, which used taxation to develop strong states capable of supporting service provision and economic growth. Still, they urge the reader to be cautious as the Western Europe from centuries ago and today's developing countries are not comparable. There are three key differences: First, developing countries today are highly dependent on natural resources exports; second, developing countries today face a different global environment; and third, developing countries today receive large portions of aid, which often serve as a substitute for tax revenue. While improved tax systems should lead to improved government accountability, in practice different factors have halted the existence of a positive link between taxation and accountability.

We use an instrumental variable approach to test for the robustness of our results in the presence of reverse causality. Statistics on settler mortality can be used as an instrument for governance indicators.[5] This approach was proposed by Acemoglu, Johnson, and Robinson (2001), who argue that the quality of current institutions is highly correlated to European colonizers' mortality. In places where the settler mortality was low, Europeans physically settled and created good institutions. Conversely, in places with high settler mortality rates, Europeans did not physically settle and were more likely to set up extractive institutions. The article uses settler mortality as an instrument for current institutions and finds a large effect of institutions on income per capita.

In order to assess the link between governance and financial flows, we run a two-stage least square regression, using settler mortality as an instrument for control of corruption. As settler mortality does not vary over time, we take averages of the flows for our studied period 1996-2014. Looking at the first stage of our 2-SLS regression, we find that settler mortality is a strong instrument for control of corruption and government effectiveness (Annex 3,

Table 9). Since corruption is consistently significant in our analysis above, we focus on the link between corruption and financial flows. The analysis finds that instrumented control of corruption has a positive impact on tax revenue as a percentage of GDP (Annex 3, Table 9). Using settler mortality as an instrumental variable shows that domestic resource mobilization—as measured by tax revenue—responds positively to improved control of corruption. A simple OLS regression of control of corruption on financial flows yields similar results.

VII. CONCLUSION AND POLICY RECOMMENDATIONS

We use the World Governance Indicators to assess whether good governance matters for financial flows to sub-Saharan Africa. If so, how do domestic flows, i.e., tax revenue, respond to good governance compared to external flows? The domestic flows we consider is tax revenue while the external flows are FDI and ODA. We also consider remittances and illicit financial flows although data are less reliable.

We find that good governance is positively associated with financing flows. However, not all financing flows respond to good governance. In particular, our analysis finds that good governance matters more for raising domestic flows than external flows. In particular, we find that good governance has a positive effect on domestic resource mobilization, in the form of increased tax revenue. In contrast, its effect on external flows is mixed. While ODA responds positively to good governance, once we control for a country's income, FDI is typically not responsive to good governance.

From a policy perspective, the relatively stronger association between good governance and domestic financing sources compared to external financing sources is important because domestic revenues are the largest source of development finance for sub-Saharan countries. A domestic policy agenda to improve governance has, therefore, the potential to earn large dividends in terms of increasing financing for development. Our results confirm the importance of the Addis Ababa Financing for Development agenda, which aims to increase domestic revenue mobilization to finance the sustainable development goals (SDGs). The goals point to improvements in governance to complement efforts such as improvements in tax systems and administration and the efficiency of spending. In terms of a specific governance indicator, our analysis yields the most consistent results when we use corruption. This finding suggests that addressing corruption in the region could lead to significant gains in terms of financing development.

The weaker or lack of response of FDI to good governance points to the importance of identifying specific policies to improve the link between good governance and FDI in natural resource rich countries. Despite data limitations, we find a positive link between control of corruption and illicit financial flows. This could point to the importance of having a global agenda to address illicit financial flows. Such an agenda includes initiatives that address base erosion and profit shifting by global corporations.

The analysis also shows a negative relationship between control of corruption and remittances. This could indicate that in countries where corruption is controlled, there is a smaller need to rely on remittances. However, it is important to note that data on remittances can be unreliable as informal remittances are not captured.

ANNEX 1: DEFINING GOOD GOVERNANCE

Defining good governance

The concept of "governance" is defined as the process by which decisions are made and implemented. Governance looks at how governments are chosen, evaluated, and replaced, as well as the ability of said governments to create and implement sound policies. The concept of "good governance," though widely used and promoted, is interpreted differently by different organizations. The IMF defines good governance as *"the management of government in a manner that is essentially free of abuse and corruption, and with due regard for the rule of law."* According to the OECD, good governance *"encompasses the role of public authorities in establishing the environment in which economic operators function and in determining the distribution of benefits as well as the relationship between the ruler and the ruled."* The United Nations looks at good governance in relation to the *"degree in which a country's institutions and processes are transparent."*

It is important to note that the World Governance Indicators (WGI) are based on perception-based measures of governance. This may create challenges as perception may be different from reality. However, the creators of the WGI claim that perception is important because agents act based on perception. For example, if an investor perceives a country to be corrupt, she might refrain from investing in said country. Thus, a qualitative perception of governance could result in actual losses. In addition, there are a few alternatives to perception indicators. For instance, as stated by Kaufmann et al., corruption, by definition, does not leave a paper trail, that can solely be assessed through objective means (Kaufmann, Kraay, and Mastruzzi 2010).

In addition, one should note that the WGI are highly correlated, as shown in Table 1.

A1. Table 1. Spearman Correlation among WGI

	Control of corruption	Government effectiveness	Political stability	Regulatory quality	Rule of law	Voice and accountability
Control of corruption	1					
Government effectiveness	0.8144***	1				
Political stability	0.7323***	0.6607***	1			
Regulatory quality	0.7134***	0.8694***	0.6444***	1		
Rule of law	0.8826***	0.8742***	0.8136***	0.8676***	1	
Voice and accountability	0.6883***	0.7274***	0.7025***	0.7826***	0.8091***	1

** Significant at the 10% level; ** Significant at the 5% level; *** Significant at the 1% level.*

ANNEX 2: THE CPIA AND THE MCC

Country Policy and Institutional Assessment

Since 1980, the World Bank has used the Country Policy and Institutional Assessment (CPIA) to allocate funds from its concessional lending subdivision, the International Development Association (IDA). The IDA, established in 1960 has one key mission: helping the world's poorest countries. Consequently, the division provides concessional loans and grants to countries with the aim to promote economic growth, reduce inequalities, and improve living conditions. The IDA uses the Country Performance Ratings (CPR), which are (mainly) calculated using the CPIA.

The CPIA, measures the conduciveness of countries' policy and institutional framework to poverty reduction, sustainable growth, and the effective use of development assistance. The CPIA is divided in 16 criteria, distributed in four clusters: economic management (A), structural policies (B), policies for social inclusion and equity (C), and public sector management and institutions (D) (see Box 1). The CPR, is a weighted average of clusters A-C (24 percent), cluster D (68 percent), and the Bank's Annual Report on Portfolio Performance-ARPP[6] (8 percent). The weighted average used to calculate the CPR demonstrates the IDA's emphasis on promoting good governance, transparency, accountability, and proper public sector management.

In recent years, several studies have looked the effectiveness of the CPIA. A Smets and Knack (2015) study found there is a significant positive (concave) relationship between conditions related to public sector governance and the quality of public sector governance. However, when looking at specific conditions, World Bank lending has not been successful in improving the quality of administration and fighting corruption. Conversely, conditionality targeting public financial management and tax systems seem to be effective. The authors explain this difference in outcomes with the argument that reforming public administration and fighting corruption is a time-consuming, long-term process. Additionally, governments are not always willing to dedicate time and resources to implementing public sector governance reforms.

Box 1. CPIA Criteria

A. Economic Management
- 1. Monetary and Exchange Rate Policies
- 2. Fiscal Policy
- 3. Debt Policy and Management

B. Structural Policies
- 4. Trade
- 5. Financial Sector
- 6. Business Regulatory Environment

C. Policies for Social Inclusion/Equity
- 7. Gender Equality
- 8. Equity of Public Resource Use
- 9. Building Human Resources
- 10. Social Protection and Labor
- 11. Policies and Institutions for Environmental Sustainability

D. Public Sector Management and Institutions
- 12. Property Rights and Rule-based Governance
- 13. Quality of Budgetary and Financial Management
- 14. Efficiency of Revenue Mobilization
- 15. Quality of Public Administration

In 2009, the Independent Evaluation Group—the World Bank Group body in charge of evaluating activities of the IDA—published an evaluation of the CPIA. The evaluation found that CPIA ratings are correlated to aid effectiveness. More precisely, the study found that the higher the CPIA score, the lower the share of problem loans a country receives. The World Bank attaches the label "problem" to a loan when the implementation progress and development objective of said loan was rated "unsatisfactory." Therefore, improvement in CPIA score is correlated to improved loan performance. When addressing the relationship between good governance and aid effectiveness, the study found no evidence that the governance cluster is better associated with loan performance than other clusters. While policies and institutions matter for loan performance, the study does not conclude that the governance cluster has a more significant effect on loan performance due to the existing interrelatedness among CPIA clusters.

Millennium Challenge Corporation

In 2004, the United States Congress created the Millennium Challenge Corporation (MCC), a bilateral independent foreign aid agency. The MCC aims to reduce poverty and promote economic growth all while improving countries' institutional environments. The agency provides grants based on countries' commitment to ruling justly, investing in their citizens, and promoting economic freedom. The conditionality the organization uses is based on two arguments. First, aid is more effective when given to well-governed countries. Second, countries will respond to conditionality through the implementation of sound policy reform. This second argument is called the MCC effect (Johnson et al., 2014).

While there is some qualitative evidence supporting the existence of an MCC incentive effect, the quantitative evidence lacks significance. A 2014 Johnson et al. study looked at the relationship between an MCC incentives effect and policy reform. The study found no evidence of significant, broad-based reform attributable to the MCC eligibility rules. *There was also no evidence that countries that were just below the eligibility threshold reformed faster than countries that just passed that threshold.* The paper however did find some evidence when looking at country specific estimates. A 2012 study by Ohler et al. examines whether the MCC was successful in promoting better control of corruption and finds that the MCC has been successful. However, these results were only witnessed immediately after the announcement of the MCC and its incentive structure.

ANNEX 3: REGRESSION TABLES

Tables 1-8 are obtained using a panel data estimation with fixed effects for the period 1996-2014.

A3. Table 1. Governance and financial flows

	1	2	3	4	5	1	2	3	4	5
Variables	FDI (% of GDP)	ODA (% of GNI)	Tax revenue (% of GDP)	IFF (% of GDP)	Remit-tances (% of GDP)	Log FDI	Log ODA	Log tax revenue	Log IFF	Log remit-tances
Governance	2.425 (1.547)	5.991*** (1.993)	0.42 (0.753)	8.091 (7.060)	-0.0121 (0.912)	-1.290*** (0.168)	0.525*** (0.140)	0.215*** (0.074)	0.355 (0.414)	-0.153 (0.334)
Log GDP per capita (PPP)	-3.785** (1.508)	-4.253** (1.963)	5.995*** (0.732)	-47.15*** (9.212)	-1.647 (1.004)	3.431*** (0.165)	1.433*** (0.140)	1.840*** (0.072)	1.533*** (0.540)	2.848*** (0.367)
Natural resource rents (% of GDP)	-0.0111 (0.050)	0.0389 (0.065)	-0.084*** (0.025)	-0.32 (0.202)	0.00882 (0.034)	0.00956* (0.006)	0.0117** (0.005)	-0.00892*** (0.002)	0.0103 (0.012)	0.0210* (0.013)
Openness	0.0800*** (0.011)	0.112*** (0.014)	0.112*** (0.014)	0.496*** (0.058)	0.00495 (0.008)	0.00821*** (0.001)	0.00634*** (0.001)	0.00488*** (0.000)	0.00807** (0.003)	0.0121*** (0.003)
Constant	29.02** (12.100)	37.43** (15.740)	-32.49*** (5.834)	343.7*** (72.600)	16.26** (7.835)	-20.66*** (1.323)	8.368*** (1.117)	11.05*** (0.575)	7.525* (4.259)	-4.884* (2.867)
Observations	679	682	606	372	558	678	642	606	372	558
R-squared	0.127	0.15	0.148	0.256	0.007	0.417	0.251	0.588	0.052	0.149
Number of countries	43	43	43	43	40	43	43	43	43	40

Standard errors in parentheses.
**** p<0.01, ** p<0.05, * p<0.1*

A3. Table 2. Foreign direct investment

Dependent variables / Independent variables	FDI (% of GDP)						Log FDI					
Control of corruption	1.291 (1.12)						-0.539*** (0.13)					
Government effectiveness		2.384* (1.34)						-0.814*** (0.15)				
Political stability			0.277 (0.67)						-0.377*** (0.07)			
Regulatory quality				1.241 (1.21)						-0.734*** (0.14)		
Rule of law					2.097 (1.32)						-0.662*** (0.15)	
Voice and accountability						1.418 (1.14)						-0.834*** (0.13)
Log GDP per capita (PPP)	-3.297** (1.45)	-3.265** (1.43)	-3.140** (1.47)	-3.401** (1.48)	-3.769** (1.50)	-3.554** (1.49)	3.100*** (0.16)	3.069*** (0.16)	3.225*** (0.17)	3.253*** (0.17)	3.252*** (0.17)	3.342*** (0.17)
Natural resource rents (% of GDP)	-0.0231 (0.05)	-0.012 (0.05)	-0.0278 (0.05)	-0.0229 (0.05)	-0.0114 (0.05)	-0.0196 (0.05)	0.0171*** (0.01)	0.0138** (0.01)	0.0160*** (0.01)	0.0154*** (0.01)	0.0141** (0.01)	0.0134** (0.01)
Openness	0.0819*** (0.01)	0.0814*** (0.01)	0.0837*** (0.01)	0.0829*** (0.01)	0.0799*** (0.01)	0.0801*** (0.01)	0.00676*** (0.00)	0.00680*** (0.00)	0.00661*** (0.00)	0.00677*** (0.00)	0.00732*** (0.00)	0.00843*** (0.00)
Constant	24.61** (11.41)	25.14** (11.28)	22.71* (11.58)	25.32** (11.74)	28.86** (12.04)	26.69** (11.89)	-17.65*** (1.29)	-17.63*** (1.26)	-18.46*** (1.30)	-18.93*** (1.31)	-18.95*** (1.36)	-19.72*** (1.31)
Observations	678	678	679	679	679	679	677	677	678	678	678	678
R-squared	0.126	0.128	0.124	0.125	0.127	0.126	0.377	0.388	0.387	0.391	0.382	0.405

Standard errors in parentheses.
**** p<0.01, ** p<0.05, * p<0.1*

A3. Table 3. Lagged corruption and foreign direct investment

Dependent variables / Independent variables	FDI (% of GDP)				Log FDI stock			
Control of corruption	1.291 (1.119)				-0.539*** (0.127)			
Control of corruption (y-1)		0.651 (1.086)				-0.595*** (0.130)		
Control of corruption (y-2)			3.814*** (1.058)				-0.391*** (0.135)	
Control of corruption (y-3)				2.373** (1.199)				-0.329** (0.140)
Log GDP per capita (PPP)	-3.297** (1.445)	2.946* (1.659)	1.238 (1.530)	2.149 (1.939)	3.100*** (0.163)	3.472*** (0.199)	3.257*** (0.195)	3.437*** (0.226)
Natural resource rents (% of GDP)	-0.0231 (0.049)	0.0897* (0.050)	-0.118** (0.047)	0.0602 (0.053)	0.0171*** (0.006)	0.0185*** (0.006)	0.0215*** (0.006)	0.0182*** (0.006)
Trade (% of GDP)	0.0819*** (0.011)	-0.019 (0.012)	0.0867*** (0.010)	-0.0056 (0.014)	0.00676*** (0.001)	0.00377** (0.001)	0.00525*** (0.001)	0.00451*** (0.002)
Constant	24.61** (11.410)	-17.13 (12.740)	-7.482 (12.030)	-10.45 (14.950)	-17.65*** (1.287)	-20.24*** (1.521)	-18.65*** (1.529)	-19.83*** (1.739)
Observations	678	636	593	551	677	632	592	547
R-squared	0.126	0.013	0.144	0.014	0.377	0.376	0.356	0.349

Standard errors in parentheses.
**** p<0.01, ** p<0.05, * p<0.1*

A3. Table 4. Official development assistance

Dependent variables / Independent variables	ODA (% of GNI)						Log ODA					
Control of corruption	4.392*** (1.46)						0.166 (0.10)					
Government effectiveness		4.784*** (1.73)						0.348*** (0.12)				
Political stability			0.502 (0.87)						0.127** (0.06)			
Regulatory quality				4.657*** (1.57)						0.111 (0.11)		
Rule of law					2.261 (1.72)						0.337*** (0.12)	
Voice and accountability						4.227*** (1.47)						0.533*** (0.10)
Log GDP per capita (PPP)	-2.929 (1.88)	-2.499 (1.87)	-2.554 (1.93)	-3.851** (1.92)	-3.111 (1.97)	-3.977** (1.94)	1.595*** (0.14)	1.603*** (0.13)	1.535*** (0.14)	1.579*** (0.14)	1.495*** (0.14)	1.397*** (0.14)
Natural resource rents (% of GDP)	0.0145 (0.06)	0.0265 (0.06)	-0.0053 (0.06)	0.0201 (0.06)	0.0102 (0.07)	0.0238 (0.06)	0.00810* (0.00)	0.00982** (0.00)	0.00851* (0.00)	0.00779* (0.00)	0.0102** (0.00)	0.0118*** (0.00)
Openness	0.116*** (0.01)	0.118*** (0.01)	0.121*** (0.01)	0.117*** (0.01)	0.117*** (0.01)	0.110*** (0.01)	0.00707*** (0.00)	0.00696*** (0.00)	0.00706*** (0.00)	0.00715*** (0.00)	0.00658*** (0.00)	0.00570*** (0.00)
Constant	26.28* (14.84)	23.42 (14.71)	20.95 (15.16)	33.42** (15.27)	26.55* (15.76)	34.40** (15.46)	6.906*** (1.06)	6.977*** (1.04)	7.321*** (1.08)	6.992*** (1.09)	7.810*** (1.11)	8.667*** (1.07)
Observations	681	681	682	682	682	682	641	641	642	642	642	642
R-squared	0.15	0.148	0.138	0.149	0.14	0.148	0.238	0.245	0.239	0.235	0.244	0.269

Standard errors in parentheses.
**** p<0.01, ** p<0.05, * p<0.1*

A3. Table 5. Tax revenue

Dependent variables / Independent variables	Tax revenue (% of GDP)						Log tax revenue					
Control of corruption	1.128** (0.55)						0.0601 (0.05)					
Government effectiveness		0.0182 (0.63)						0.0505 (0.06)				
Political stability			-0.159 (0.33)						0.0602* (0.03)			
Regulatory quality				-0.115 (0.60)						0.118** (0.06)		
Rule of law					-0.63 (0.65)						0.118** (0.06)	
Voice and accountability						1.052** (0.52)						0.184*** (0.05)
Log GDP per capita (PPP)	5.942*** (0.70)	6.126*** (0.70)	6.247*** (0.73)	6.159*** (0.71)	6.328*** (0.72)	5.704*** (0.72)	1.595*** (0.14)	1.603*** (0.13)	1.535*** (0.14)	1.579*** (0.14)	1.495*** (0.14)	1.397*** (0.14)
Natural resource rents (% of GDP)	-0.0796*** (0.02)	-0.0875*** (0.02)	-0.0898*** (0.02)	-0.0884*** (0.02)	-0.0935*** (0.02)	-0.0781*** (0.02)	-0.0105*** (0.00)	-0.0104*** (0.00)	-0.0100*** (0.00)	-0.0101*** (0.00)	-0.00946*** (0.00)	-0.00918*** (0.00)
Openness	0.0294*** (0.00)	0.0306*** (0.00)	0.0309*** (0.00)	0.0307*** (0.00)	0.0316*** (0.00)	0.0277*** (0.00)	0.00515*** (0.00)	0.00517*** (0.00)	0.00507*** (0.00)	0.00512*** (0.00)	0.00495*** (0.00)	0.00468*** (0.00)
Constant	-31.67*** (5.49)	-33.72*** (5.45)	-34.73*** (5.75)	-34.05*** (5.59)	-35.70*** (5.73)	-29.85*** (5.69)	10.47*** (0.55)	10.41*** (0.54)	10.77*** (0.57)	10.70*** (0.55)	10.86*** (0.57)	11.08*** (0.56)
Observations	605	605	606	606	606	606	605	605	606	606	606	606
R-squared	0.152	0.145	0.148	0.147	0.149	0.154	0.58	0.58	0.584	0.585	0.586	0.591

Standard errors in parentheses.
**** p<0.01, ** p<0.05, * p<0.1*

A3. Table 6. Natural resource rents

Dependent variables / Independent variables	Natural resource rents (% of GDP)					
Control of corruption	-3.145*** (0.900)					
Government effectiveness		-5.741*** (1.036)				
Political stability			-2.164*** (0.531)			
Regulatory quality				-4.037*** (0.959)		
Rule of law					-6.579*** (1.012)	
Voice and accountability						-4.350*** (0.892)
Log GDP per capita (PPP)	1.377 (1.172)	1.267 (1.146)	1.993* (1.189)	2.090* (1.191)	3.168*** (1.187)	2.471** (1.196)
Trade (% of GDP)	0.0511*** (0.008)	0.0511*** (0.008)	0.0494*** (0.008)	0.0501*** (0.008)	0.0575*** (0.008)	0.0580*** (0.008)
Constant	-1.909 (9.258)	-3.216 (9.041)	-5.751 (9.353)	-7.901 (9.476)	-18.71** (9.525)	-11.38 (9.536)
Observations	681	681	682	682	682	682
R-squared	0.068	0.094	0.074	0.076	0.109	0.084

Standard errors in parentheses.
**** p<0.01, ** p<0.05, * p<0.1*

A3. Table 7. Illicit financial flows

Dependent variables / Independent variables	IFF (% of GDP)						Log IFF					
Control of corruption	11.54** (4.98)						0.34 (0.29)					
Government effectiveness		8.735 (6.13)						0.544 (0.36)				
Political stability			-2.045 (2.77)						-0.168 (0.16)			
Regulatory quality				4.657*** (1.57)						1.211*** (0.39)		
Rule of law					12.89** (6.45)						0.566 (0.38)	
Voice and accountability						3.635 (5.24)						-0.0816 (0.31)
Log GDP per capita (PPP)	-48.70*** (8.95)	-45.70*** (8.84)	-42.63*** (8.92)	-46.96*** (9.70)	-48.99*** (9.09)	-44.58*** (8.83)	1.535*** (0.53)	1.563*** (0.52)	1.778*** (0.52)	0.939* (0.56)	1.452*** (0.53)	1.693*** (0.52)
Natural resource rents (% of GDP)	-0.352* (0.20)	-0.338* (0.20)	-0.355* (0.20)	-0.332 (0.20)	-0.283 (0.20)	-0.334* (0.20)	0.00909 (0.01)	0.00948 (0.01)	0.00807 (0.01)	0.0108 (0.01)	0.0119 (0.01)	0.00941 (0.01)
Openness	0.497*** (0.06)	0.493*** (0.06)	0.489*** (0.06)	0.496*** (0.06)	0.492*** (0.06)	0.492*** (0.06)	0.00804** (0.00)	0.00794** (0.00)	0.00761** (0.00)	0.00876*** (0.00)	0.00787** (0.00)	0.00790** (0.00)
Constant	357.9*** (70.10)	334.5*** (69.33)	304.6*** (69.34)	340.8*** (76.65)	361.3*** (71.62)	321.7*** (68.85)	7.521* (4.13)	7.492* (4.06)	5.429 (4.06)	12.53*** (4.43)	8.296** (4.21)	6.077 (4.04)
Observations	372	372	372	372	372	372	372	372	372	372	372	372
R-squared	0.266	0.258	0.255	0.255	0.263	0.255	0.053	0.05	0.053	0.076	0.056	0.05

Standard errors in parentheses.
**** p<0.01, ** p<0.05, * p<0.1*

A3. Table 8. Remittances

Dependent variables / Independent variables	Remittances (% of GDP)						Log remittances					
Control of corruption	-1.708*** (0.62)						-0.380* (0.23)					
Government effectiveness		-0.303 (0.76)						-0.825*** (0.28)				
Political stability			0.107 (0.37)						0.0957 (0.13)			
Regulatory quality				1.409* (0.77)						-0.148 (0.28)		
Rule of law					1.898** (0.75)						0.387 (0.28)	
Voice and accountability						-0.86 (0.62)						0.0122 (0.23)
Log GDP per capita (PPP)	-0.846 (0.96)	-1.274 (0.95)	-1.721* (0.97)	-2.168** (0.98)	-2.414** (0.98)	-1.238 (0.99)	2.952*** (0.35)	2.969*** (0.35)	2.728*** (0.36)	2.844*** (0.36)	2.634*** (0.36)	2.784*** (0.36)
Natural resource rents (% of GDP)	0.00426 (0.03)	0.00701 (0.03)	0.0103 (0.03)	0.0181 (0.03)	0.0209 (0.03)	0.00442 (0.03)	0.0209* (0.01)	0.0189 (0.01)	0.0232* (0.01)	0.0210* (0.01)	0.0244* (0.01)	0.0220* (0.01)
Openness	0.0035 (0.01)	0.0058 (0.01)	0.0051 (0.01)	0.0072 (0.01)	0.0062 (0.01)	0.0050 (0.01)	0.0119*** (0.00)	0.0119*** (0.00)	0.0124*** (0.00)	0.0120*** (0.00)	0.0125*** (0.00)	0.0122*** (0.00)
Constant	9.427 (7.39)	13.16* (7.39)	16.84** (7.48)	20.64*** (7.61)	22.95*** (7.67)	12.83* (7.66)	-5.776** (2.73)	-6.174** (2.69)	-3.901 (2.74)	-4.842* (2.79)	-3.027 (2.82)	-4.336 (2.81)
Observations	557	557	558	558	558	558	557	557	558	558	558	558
R-squared	0.02	0.006	0.007	0.013	0.019	0.011	0.156	0.166	0.15	0.149	0.152	0.149

Standard errors in parentheses.
**** p<0.01, ** p<0.05, * p<0.1*

A3. Table 9. Settler mortality and governance

First Stage for World Governance Indicators

	1	2	3	4	5	6
Dependent variables	Control of corruption	Government effectiveness	Political stability	Regulatory quality	Rule of law	Voice and accountability
Independent variables						
Log settler mortality	-0.12971* (0.077)	-0.18706** (0.081)	0.006421 (0.123)	-0.08595 (0.082)	-0.11446 (0.094)	-0.10959 (0.103)
GDP per capita (PPP 1996)	0.085074 (0.087)	0.195821** (0.092)	0.327645** (0.140)	0.226826** (0.093)	0.189197* (0.107)	0.150691 (0.117)
R-Squared		0.3406	0.1797	0.2563	0.1905	0.127

Two-Stage Least Square Estimates

	1	2	3	4	5	6	7	8	9	10
Dependent variables	FDI (% of GDP)	ODA (% of GNI)	Tax revenue (% of GDP)	Illicit financial flows (% of GDP)	Remit-tances (% of GDP)	Log FDI	Log ODA	Log tax revenue	Log IFF	Log remit-tances
Independent variables										
Control of corruption	-2.528 (6.487)	4.084 (9.832)	11.06* (5.402)	-7.564 (30.19)	-6.618 (6.214)	0.207 (2.316)	0.752 (1.343)	1.928 (1.905)	0.8 (1.956)	-1.574 (2.901)
Log GDP per capita (PPP 1996)	-1.627 (1.233)	-8.320*** (1.868)	-0.172 (1.026)	-8.602 (5.736)	-0.509 (1.165)	0.69 (0.44)	-0.293 (0.255)	0.649* (0.362)	0.417 (0.372)	-0.0201 (0.544)
Constant	14.17 (12.65)	74.59*** (19.17)	20.58* (10.53)	69.42 (58.86)	2.025 (11.73)	2.091 (4.516)	22.42*** (2.619)	21.85*** (3.714)	17.43*** (3.814)	16.98*** (5.475)
Observations	30	30	30	30	28	30	30	30	30	28
R-Squared	0.132	0.529	0.248	0.14		0.146	0.001	0.21	0.126	

Ordinary Least Square Estimates

Control of corruption	-0.636 (1.577)	3.294 (2.089)	7.790*** (1.842)	1.583 (5.637)	2.913 (2.171)	-0.424 (0.501)	0.0611 (0.334)	0.0840 (0.433)	-0.231 (0.466)	0.948 (0.615)
Log GDP per capita (PPP 1996)	-0.661 (0.902)	-7.657*** (1.195)	0.604 (1.053)	-6.739** (3.224)	-1.869 (1.206)	0.588** (0.286)	-0.535*** (0.191)	0.524** (0.248)	0.366 (0.266)	-0.606* (0.342)
Constant	9.446 (7.197)	69.92*** (9.534)	13.81 (8.405)	62.91** (25.72)	19.48** (9.623)	2.218 (2.285)	23.41*** (1.522)	21.11*** (1.978)	16.84*** (2.125)	22.58*** (2.726)
Observations	44	44	44	44	41	44	44	44	44	41
R-Squared	0.028	0.511	0.378	0.106	0.073	0.093	0.182	0.127	0.044	0.094

Standard errors in parentheses.
**** p<0.01, ** p<0.05, * p<0.1*

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ENDNOTES

1. We use the Spearman rank correlation as the governance indicators are ranked variables. Our qualitative results do not change when we use the usual Pearson correlation.
2. The data for trade openness and natural resource rents was sourced from the World Development Indicators, while the data for real GDP was sourced from IHS Connect.
3. We replicated the analysis for the other types of financial flows and did not find any significant lagged effect of governance indicators on ODA and tax revenue.
4. The data for GDP per capita was sourced from IHS Connect.
5. The data for settler mortality can be found on Daron Acemoglu's MIT page http://economics.mit.edu/faculty/acemoglu/data/ajr2001.
6. The ARPP is used to measure the development effectiveness of the World Bank's portfolio of ongoing operations. It informs the Bank's management and Board of Directors on the current status of the Bank's portfolio.

ISSN: 2166-5184 (online) | 2166-5176 (print)

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