International aid corruption and fiscal behavior policy

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Abstract

The Okada & Samreth (2012, EL) and Asongu (2012, EB; 2013, EEL) debate on 'the effect of foreign aid on corruption' has had an important influence in policy and academic circles. This paper provides a unifying framework by using investment and fiscal behavior transmission channels in 53 African countries for the period 1996-2010. The richness of the dataset enables us to disaggregate countries into 16 panels depicting fundamental characteristics of corruption based on wealth-effects, legal origins, openness to sea, petroleum-exporting, regional proximity and religious domination. Findings unite the two streams of the debate and broadly suggest that while the 'government's final consumption expenditure' channel is consistent with the latter author, the investment and tax effort channels are in line with the former authors. Justifications for the nexuses are provided. Policy implications on how to use foreign aid constraints in managing fiscal behavior as means of reducing (increasing) corruption (corruption-control) are discussed.

JEL Classification: B20; F35; F50; O10; O55
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1. Introduction

Foreign aid may be one of the most debated and controversial issues in international policy coordination. It has been motivated by a mixture of alleged economic interests, altruism, historical ties and geo-strategic (imperialist[1]) considerations. Grants and soft loans have been offered by donors of the Western capitalist world to developing countries especially after the decolonization process (Oya, 2006). Whereas foreign aid may be necessary in the short-term owing to certain humanitarian concerns, there has been an endless debate on the effectiveness of aid to Africa and the linkage among aid, conditionality[2] and economic policies in recipient countries. This debate has led many analysts to call for alternatives (Oya, 2006)[3]. Accordingly, the Cold war and the battle for geopolitical control in Africa between superpowers was perhaps the most important determinant of soaring aid in the 1980s (Degnbol-Martinussen & Engberg-Pedersen, 2003).

From the interesting literature on foreign aid and institutions, the debate has been centered along three preoccupations (Asongu, 2013a). Firstly, do donors allocate more to poor countries with better institutions? Secondly, does foreign aid induce worse or better institutional quality? Thirdly, how do outsiders engineer a transition from informal to formation institutions by means of foreign aid. The first issue is critical in the debate because there has been a wide

[1] The imperialist origin of poor institutions is still widely debated. See Alam (2004).

[2] This debate on conditionality has recently intensified when the British and the U.S governments threatened to cut-off aid to African nations because of the prosecution of gays, lesbians and transsexuals in recipient countries. Many African government officials and activists have seen the threat as an insult to both moral wellbeing and African values.

[3] The debate has even been extended to areas of external assistance like structural adjustment policies by the International Monetary Fund (IMF). There is substantially documented evidence that the IMF's neoliberal policies have been: perilous to South Korean development after the 1997 crisis (Crotty & Lee, 2002, 2006, 2009), the main cause of the Argentinean crisis in the late 1990s and early 2000s (Levy & Duménil, 2006) and a cause of the failed privatization projects across Africa (Bartels et al., 2009).

supposition on the part of donors that aid would be more effective in countries with better institutions. How the question is answered also affects the manner in which the second question is tackled. Accordingly, if donors allocate more aid to countries with better institutions, this would create an incentive for policy reforms in the recipient country to adapt to better institutions. A substantial bulk of the literature has found no evidence substantiating the thesis that democracies or less corrupt states are rewarded with more aid than their less institutionally developed counterparts (Alesina & Dollar, 2000; Alesina & Weder, 2002). With regard to the second issue, a considerable bulk of the literature has also emphasized the negative incidence foreign aid has on institutional quality (Knack, 2001; Asongu, 2012a, 2013a) and democratic (Djankov et al., 2005), especially in ethnically fractionalized states (Svensson, 2000). Lastly, there is the challenging third question on how development assistance would practically go about transforming institutions in the interest of the recipient countries. As far as we have reviewed, the transition from informal to formal institutions is a complex process and attempts by donors to introduce top-down formal institutions have not fared well in the complicated maze of bottom-up arrangements. Dixit (2004) has presented an interesting analysis to this concern by arguing how introducing rule-based institutions could actually make issues worse as they create outside opportunities for members of relationship-based networks[4]. The scope of the current paper is within the second question in light of a recent debate on the effect of foreign aid on corruption.

The Okada & Samreth (2012) and Asongu (2012a, 2013a) debate on 'the effect of foreign aid on corruption' has had an important influence in policy and academic circles. Accordingly, the debate lacks a unifying framework that synthesizes the thesis and anti-thesis. Both sides of the debate suffer from the insufficiency of modeling corruption as a direct consequence of

[4] Network members can later cheat on their partners and vamoose to operate in the rule-based system. Hence, a society could get caught in-between formal and informal institutional settings with neither working well.

foreign aid. In light of Knack & Keefer (1995)[5], we argue that investigating institutional quality as a direct effect of development assistance may be grossly misleading because it fails to account for mechanisms through which foreign aid is channeled. In uniting the two streams we argue that investment and fiscal behavior mechanisms are essential for a better understanding of the nexuses between aid and corruption. On the one hand, consistent with Easterly (2005), 'Big-Push' (Harrod-Domar and Solow growth) models which constitute the main theoretical underpinnings of foreign aid are premised on the need for large aid-financed increases in investment in order to bridge 'poverty and institutional gaps'. On the other hand, it is common sense to acknowledge that aid affects fiscal behavior in terms of government expenditure and tax effort. Hence, the goal of this paper is to assess how development assistance affects corruption through investment and fiscal behavior mechanisms in 53 African countries. The richness of the dataset permits us to disaggregate the countries into fundamental characteristics of corruption (legal origins, petroleum exporting quality, political instability/conflicts, regional proximity, openness to sea, income-levels and religious domination), which add subtlety to the analysis.

Putting aside the direct contribution of this paper to the current debate, it indirectly has other policy relevant contributions to the literature. Firstly, a great bulk of the literature is based on data collected between 1960 and 2000. By using recent data (1996-2010), we provide an updated account of the nexuses under investigation. Secondly, the global economic downturn has sparked concerns about donor's continued willingness to give and commitment to foreign aid (Ahmed et al., 2011). Hence, assessing the incidence of aid on corruption in a comparative setting could throw more light on this aspect of the debate[6]. Thirdly, a corollary of the second

[5] Knack & Keefer (1995, p. 223) have concluded that more indicators are needed to properly account for the quality of institutions.

[6] Koechlin (2007) has recently reframed the debate by examining three ambitious books (Sachs's *The End of Poverty*, Bhagwati's *In Defense of Globalization*, and Easterly's *The Elusive Quest for Growth*), and has concluded

contribution is the shifting of policy space to aid alternatives from East Asia. Learning from the East Asian success stories has been hampered by an asymmetric bargaining power of African governments, vis-à-vis Western development partners[7]. Fourthly, there have been substantial changes in objectives announced by the donor community which have evolved from intensive industrialization programs advocated in the 1950s to more recent poverty-reduction and institutions-building objectives such the Millennium Development Goals (MDGs). Accordingly, with the year 2015 drawing near this study also provide policy options to donor and multilateral agencies on their assistance objective of building strong institutions.

The rest of the paper is organized as follows. Section 2 examines the theoretical underpinnings (with stylized facts), analyzes conflicts in the literature before presenting the scope and positioning of the paper in light of the ongoing debate. Data and methodologies issues are discussed in Section 3. Section 4 covers the empirical analysis. We conclude with Section 5.

2. Foreign Aid and Development

2. 1 Theoretical highlights and stylized facts

The concern of whether foreign aid improves growth and institutions in recipient countries can be traced back to the two-gap model (Chenery & Strout, 1966), which remains the most influential theoretical underpinning of the aid effectiveness literature. In the model, developing countries face serious constraints on savings and exports earnings that deter investment and growth (in economic and institutional terms). Despite severe criticisms since its

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that, the insights and drawbacks of these three books remind us that the status quo is not working and that a rich understanding of globalization and development requires a serious consideration of alternative visions of each. Some new ways of theorizing development in light of the globalized systems of food production have included the USA led 'genetically modified food aid' to the Southern African region, that is widely criticized by the European Union (Herrick, 2008).

[7] For instance, the Chinese 'cooperative and non-interference' oriented foreign aid and foreign direct investment (FDI) policies in Africa are viewed by some as better alternatives. Therefore, the outcome of this study may either reinforce the growing mentality or negate it.

inception, this model has provided the underlying principles for early aid policies (Easterly, 1999) and regression specifications in many aid-oriented empirical papers (Masud & Yontcheva, 2005).

Over the past 50 years since the Official Development Assistance (ODA) programs were instituted, the issue of aid effectiveness has remained widely debated and unsolved. In 2005, Western economies tried hardest to save Africa. In July of that year, the Group of Eight (G8) agreed to double foreign aid to Africa from $25 billion a year to $50 billion to finance the 'Big push', as well as cancel African aid-loans contracted during previous attempts at a 'Big push'. Prior to this effort, Africa was already the most aid-intensive region on the globe. In September of the same year, world leaders gathered at the United Nations to further discuss progress on reducing (if not ending) the stubbornly high poverty in the continent. To highlight some frustrating statistics, sub-Saharan Africa (SSA) contains 11% of the world's population, but produces only 1% of the world's GDP (Easterly, 2005). In the median African country, 43% of the population lives on less than $1 a day. On the World Food Program list, of the 23 countries with more than 35% of the population malnourished, 17 (73%) are in Africa. The long and brutal civil wars in many countries (Angola, Chad, Somalia, Sierra Leone, Liberia…etc) not to mention Rwanda's genocide and recent carnages in Dafur-Sudan and the Democratic Republic of Congo (registering the world's highest causalities since the Second World War) are some recent memories that epitomize the state of institutions in Africa. Accordingly, seven of the eight recent cases of total societal breakdown into anarchy in the world known to the literature have been in Africa: Angola, Burundi, Liberia, Sudan, Sierra Leone, Somalia and Zaire/Congo (beside Afghanistan). The political economy of foreign aid has been indirectly or directly linked to events before or after recent experiences in the collapse of institutions in Africa (Zimbabwe's

economic meltdown, the unending Egyptian revolution, Ivorian post-election nightmare, the Libyan crisis and the recent donor-bid on funds for war-torn Mali).

2.2 Conflicts in the literature

A substantial bulk of the literature has focused on the macroeconomic consequences of aid, but mixed results have been reported and those that have established significant positive effects face heavy methodological criticisms. The absence of analytical framework, heavy reliance on empirical evidence (which is often ambiguous at best) and inconclusive results with recently refined methodologies (Masud & Yontcheva, 2005), have left the subject matter widely open to debate. For organizational purposes, the highlighted conflicts on the effectiveness of aid on development is presented in two main strands summarized in Table 1 below: one advocating the negative consequences of aid and the other acknowledging the positive rewards of development assistance.

The first strand entails authors presenting the case for the insignificant impact of aid on investment, savings, growth and institutions. Aid has been established to breed unproductive public consumption (Mosley et al., 1992) without increasing investment. This latter position has been supported by Boone (1996) and Reichel (1995). Ghura (1995) has pointed to the negative effect of aid on domestic savings whereas Pedersen (1996) has asserted that, foreign aid distorts development and leads to aid dependency. Very recent African aid-development literature has established that aid fuels corruption (Asongu, 2012a), a negative nexus that has been extended to other government quality dynamics of political stability, government effectiveness, rule of law, voice & accountability and regulation quality (Asongu, 2012b) irrespective of initial levels in institutional quality (Asongu, 2013a).

Table 1: Summary of conflicts in the literature

Researchers	Main findings
	First-strand: Aid does not lead to growth (development)
Mosley et al. (1992)	Aid improves unproductive public consumption and fails to promote growth.
Reichel (1995)	Aid fails to promote savings because of the substitution effect.
Ghura (1995)	Aid negatively affects savings.
Boone (1996)	Aid is insignificant in improving economic development for two reasons: poverty is not the effect of capital shortage and it is not optimal for politicians to adjust distortionary policies when they receive aid flows.
Pedersen (1996)	Aid distorts development and leads to aid dependency.
Asongu (2012a)	Aid fuels corruption and mitigates the control of corruption.
Asongu (2012b)	Aid is perilous to government quality dynamics.
Asongu (2013a)	Aid is perilous to institutional quality irrespective of initial levels of institutional development.
	Second-strand: Aid improves growth (development)
Ghura (1995)	Aid positively affects savings for good adjusters.
Burnside & Dollar (2000)	Aid can be effective when economic management and policies are good.
Guillaumont & Chauvet (2001)	Aid effectiveness is contingent on environmental factors (hazards and shocks).
Collier & Dehn (2001)	Aid effectiveness depends on negative supply shocks. Targeting aid contingent on negative supply shocks is better than targeting based on good policies.
Collier & Dollar (2001)	The positive effect of aid on poverty depends on its impact on per-capita income growth and the impact of per-capita income growth on poverty mitigation.
Feeny (2003)	The sectoral allocation of foreign aid to Papua New Guinea has been broadly in accordance with a strategy to effectively reduce poverty and increase human wellbeing.
Gomanee et al. (2003)	Aid has both a direct effect on welfare and indirect effect through public spending on social services.
Clement et al. (2004)	Aid has a short-term positive effect on growth.
Ishfaq (2004)	Aid, in a limited way though, has helped in reducing the extent of poverty in Pakistan.
Mosley et al. (2004)	Aid has an indirect impact on poverty and the well-being of recipient countries.
Addison et al. (2005)	Aid increases pro-poor public expenditure and has a positive effect on growth. Aid broadly works to mitigate poverty, and poverty would be higher in the absence of aid.
Fielding et al. (2006)	There is a straight forward positive effect of aid on development outcomes.
Minou & Reddy (2010)	Aid positively affects growth in the long-term.
Okada & Samreth (2012)	Aid reduces corruption.
Resnick (2012)	Aid has promoted democratic transitions in African countries in the 1990s.

Source (Authors)

In the second strand, we find studies supporting the positive effects of aid on development. Among them, we shall highlight that of Burnside & Dollar (2000) which concludes that aid can be effective when policies in place are good. The Burnside & Dollar (2000) work has received abundant comments from researchers (Guillaumont & Chauvet, 2001; Colier & Dehn, 2001; Easterly et al., 2003), whose findings have been challenged as being "extremely data dependent" (Clemens et al., 2004). Whereas Clemens et al. (2004) have shown that aid is beneficial in the short-run; Minou & Reddy (2010) have recently established that the beneficial effects could also be in the long-run. Gomanee et al. (2003) have concluded that aid has both a direct impact on welfare and an indirect effect via public spending and social services. The indirect position has been substantiated by Mosley et al. (2004) on poverty and wellbeing in recipient countries. While the effectiveness of aid is more straight forward for some (Ishfaq, 2004; Addison et al., 2005; Fielding et al., 2006)[8] and aid may promote democratic institutions (Resnick, 2012), the Okada & Samreth (2012) findings on 'the effect of foreign aid on corruption' have recently been object of intense debate from an African perspective (Asongu, 2012a, 2013a).

2.2 Scope and positioning

2.2.1 Scope: a current debate

As highlighted in the introduction, the Okada & Samreth (2012) and Asongu (2012a, 2013a) debate on 'the effect of foreign aid on corruption' has had an important influence in policy and academic circles. Okada and Samreth (O & S) have assessed the nexus in 120

[8] Addison et al. (2005) have concluded that aid solidifies pro-poor public expenditure and has a positive effect on growth as it broadly works towards poverty mitigation. Their stance that poverty will be higher in the absence of aid has been confirmed by Ishfaq (2004). Among the examined proponents of a positive aid-development nexus, Fielding et al. (2006) have been the most optimistic in their conclusion on a straight forward positive impact of aid on development outcomes.

developing countries for the period 1995-2009 and concluded that foreign aid generally reduces corruption and its reduction effect is greater in less corrupt countries. In response Asongu (2012a) has partially negated their criticism of the mainstream approach to the aid-development nexus. Using data from 52 African countries for the period 1996-2010, he has found that aid fuels (mitigates) corruption (the control of corruption) in the African continent and hence, concluded that the O & S finding for developing countries may not be relevant for Africa.

In light of the above, some scholars have informally criticized Asongu (2012a) for not taking into account the conditional element of the O & S finding ("…*reduces corruption especially and its reduction effect is greater in less corrupt countries"* p.1). In response Asongu (2013a) has extended the debate by: not partially negating the methodological underpinning of O & S with a unifying empirical framework and; broadening the horizon of inquiry from corruption to eight institutional quality dynamics (rule of law, regulation quality, government effectiveness, democracy, corruption, voice & accountability, control of corruption and political stability). Core to this extension is a hypothetical contingency of the 'institutional downside of foreign aid' on existing institutional quality such that, the institutional peril of development assistance maybe questionable when greater domestic institutional development has taken place. Based on this hypothesis of institutional thresholds for foreign aid effectiveness, the perilous character of development assistance to institutional quality is broadly confirmed in 53 African countries for the period 1996-2010 (Asongu, 2013a, p. 1).

In response, some scholars have informally pointed-out the lack of fiscal policy and investment channels in the debate. The debate in its present state has not deviated from the Fielding et al. (2006) position on a straight forward relationship between aid and development. Accordingly, consistent with Knack & Keefer (1995) who have concluded that more indicators

are needed to properly account for the quality of institutions (p. 223), this paper further extends the debate by providing an indirect dimension to the nexus: transmission mechanisms of foreign aid to corruption.

2.2.2 Positioning: fiscal behavior and investment mechanisms

We devote space to substantiating the theoretical and empirical underpinnings of the fiscal behavior and investment mechanisms in the aid-corruption nexus. As emphasized in the theoretical highlights above, the 'Big-Push' model on which foreign aid is based suggests that Africa is poor because it is stuck in poverty and institutional traps (Easterly, 2005). To emerge from the traps, it needs a large aid-financed increase in investment: a 'Big Push'. Both the Harrod-Domar and the Solow growth models have been used to discuss these mechanisms. The underlying assumption here is the notion that the 'Big Push' is destined to bridge the saving-investment gap poor countries face (Rostow, 1960; Chenery & Strout, 1966; Easterly, 2005).

From an empirical standpoint, in assessing the impact of foreign aid, a great chunk of studies have focused on the effect of aid-flows on GDP growth and other macroeconomic variables (investment or public consumption). Gomanee et al. (2003) have concluded that aid has both a direct effect on welfare and an indirect impact through public spending and social services. The indirect standpoint has been confirmed by Mosley et al. (2004) on poverty and wellbeing in recipient countries. Aid has also been established to breed unproductive public consumption (Mosley et al., 1992) without increasing investment. This latter point has been supported by Boone (1996) and Reichel (1995). Addison et al. (2005) have found that aid strengthens pro-poor public expenditure. Donors are concerned about how their aid is used especially the manner in which it affects the fiscal behavior of recipient countries because aid

and government fiscal behavior are linked through government spending and tax efforts (Morrissey, 2012).

Two aid mechanisms clearly standout from the theoretical and empirical underpinnings above: fiscal behavior and investment channels. Hence, the goal of this paper is to assess how development assistance affects corruption through investment and fiscal behavior mechanisms.

3. Data and Methodology

3.1 Data

We assess a sample of 53 African with data from the African Development Indicators (ADI) of the World Bank (WB) for the period 1996-2010. Limitations to African countries and periodicity have a twofold justification: on the one hand, they are consistent with the underpinnings of the debate and the other hand; indicators on corruption are not available before 1996[9]. The dependent variables are the corruption perception and corruption-control indexes (Asongu, 2012a).

3.1.1 Determination of fundamental characteristics

We now devote space to discussing the determination of fundamental characteristics which are critical for the relevance of the empirics. The simple intuition motivating this categorization is the interest of more focused policy options based on fundamental characteristics of corruption. Accordingly, government quality dynamics (transparency, regulation quality…etc) and macroeconomic characteristics have the limitation of being time-dynamic. Therefore, the same non-dummy threshold may not be consistent over time, especially on a horizon of 15 years.

[9] It should be noted that this time span is consistent with those employed by Okada & Samreth (2012), Asongu (2012a) and Asongu (2013a). The first have use data on 120 developing countries for the period 1995-2009, the second has used data on 52 African countries for the period 1996-2010 while the third has used data for the period 1996-2010 from 53 African countries.

This is especially the case when short-run (business cycle) disturbances loom substantially large. To categorize the countries, we are consistent with recent African corruption-oriented literature on capital flight (Weeks, 2012; Asongu, 2013b) and software piracy (Asongu, 2012c). Hence, political instability or conflicts, petroleum exports, legal origins, income levels, regional proximity, religious domination and openness to sea (landlocked nature) are fundamental to corruption.

Firstly, the 'conflict affected' characteristic presents analytical and practical issues. Difficulties arise in assigning countries to this category in an exclusive and non-arbitrary manner. Accordingly, few countries in Africa are completely conflict-free. Hence, distinctions must be made on the basis of degree and significance of conflict-span relative to data-span. Given the 53 countries over the period 1996-2010 two strands emerge: civil wars and conflicts/political strife. For the first strand on civil wars, few would object to the inclusion of Angola (1975-2002), Burundi (1993-2005), Chad (2005-2010), Central African Republic (plethora of failed coup d'états between 1996-2003 and the 2004-2007 Bush War), Congo Democratic Republic, Côte d'Ivoire (1999 coup d'état, 2002-2007 civil war, rekindled in 2011), Liberia (1999-2003), Sierra Leone (1991-2002), Somalia and Sudan. In the second strand, despite the absence of some formal characteristics of civil war, we also include Nigeria and Zimbabwe due to the severity of their internal strife.

Secondly, concerning petroleum countries, a critical categorical objection is that some petroleum countries also clearly qualify as conflict-affected (e.g Angola and Sudan). As opposed to Weeks (2012) we impose no constraints of categorical priority. Hence, a country may fall in many categories if it has the relevant categorical characteristics. Accordingly for this class, arbitrariness also arises if a country qualifies for only a part of the time period, either because of

recent discovery or substantial declined in production. Another objection could by that; some producers (e.g Botswana) have macroeconomic characteristics similar to petroleum exporting countries. We take a minimalistic approach by adhering strictly to the petroleum category and including only countries whose exports have been oil-dominated for over a decade within the period 1996-2010: Algeria, Angola, Cameroon, Chad, Congo Republic, Equatorial Guinea, Gabon, Libya, Nigeria and Sudan.

Thirdly, the premise of legal origin is based on: the emphasis legal origins place on private property rights vis-à-vis those of the state (La Porta et al., 1998); the empirical evidence on the link between legal origins and corruption (La Porta et al., 1999) and; recent African comparative institutional literature on the weight of legal origins on government quality (Asongu, 2013c) and property rights (Asongu, 2012c). Accordingly, the hypothesis that English common-law countries place more emphasis on private property rights, while French civil-law focuses more on state power has been confirmed by recent African literature. Hence, the underlying logic for this segmentation is that the institutional web of informal norms, formal rules and enforcement characteristics affect corruption (corruption-control). The legal origin classification is guided by La Porta et al. (2008, p. 289).

Fourthly, the inclusion of income-levels to assess wealth-effects appears sound for a number of reasons. (1) Economic prosperity can be associated with an increase in rent seeking activities. (2) Recent African institutional literature has clearly established that wealth-effects are instrumental in institutional quality (Asongu, 2012d) especially corruption (Asongu, 2013d). Income-levels are based on the classification from the Financial Development and Structure Database (FDSD) of the WB.

Fifthly, 'religious influence' has been documented as a significant instrument of government quality. It is based on the intuition that religious institutions play a significant role in the fight against corruption due to their orientation towards morally sound citizens. Apart from the particularity of religious institutions on ethical related issues, Christianity and Islam significantly differ in the perception of punishments related to corruption. From an African standpoint, the edge of Christian dominated countries over their Islam oriented counterparts in corruption-control is consistent with Asongu (2012d, p. 191). Religious classification is in accordance with the Central Intelligence Agency's (2011) World Fact book.

Sixthly, there is an institutional cost of being landlocked (Arvis et al., 2007) especially in terms of corruption. Based on a preliminary assessment from our data, Landlocked countries have a slightly higher average Corruption Perception Index (CPI) (3.04) than their counterparts which are opened to the sea (2.96).

Seventhly, in order to add subtlety to the analysis we distinguish sub-Saharan Africa from North African countries. This distinction which is broadly in line with the World Bank's regional classification is relevant for regional policy implications. Moreover, such a classification has been essential to understand the dynamics of corruption-oriented literature on capital flight (Boyce & Ndikumana, 2008).

3.1.2 Endogenous explaining, instrumental and control variables

The theoretical and empirical underpinnings for the endogenous explaining variables (channels) have already been substantially covered in Section 2.2.2. In light of the above ,we use aggregate investment dynamics (public and private) and fiscal behavior channels (government's final consumption expenditure and tax revenues), in accordance with the literature (Rostow,

1960; Chenery & Strout, 1966; Mosley et al., 1992; Boone, 1996; Addison et al., 2005; Reichel, 1995; Easterly, 2005; Morrissey, 2012).

The instrumental variables include: Total Net Official Development Assistance (NODA), NODA from the Development Assistance Committee (DAC) countries, NODA from Multilateral Donors (MD) and Grants excluding technical cooperation.

Owing to identification constraints, we cannot control for many macroeconomic and structural characteristics. Accordingly, there are substantial constraints in the degrees of freedom needed for the Sargan overidentifying restrictions (OIR) test for instrument validity[10]. We have four foreign aid instruments and cannot model with more than three endogenous explaining variables. Where the linear instruments are complemented with a nonlinear pair, we cannot employ more than seven endogenous explaining variables. To avoid misspecification in the transmission mechanisms, we control only for economic prosperity and inflation. These two control variables are added to reduce the degree of identification when foreign aid instruments are invalid. From intuition, foreign indirectly fuels demand-pull inflation and directly increases GDP.

Details about the summary statistics, correlation analysis (showing the basic correlations between key variables used in this paper), variable definitions (with corresponding data sources) and categorization of countries are presented in Appendix 1, Appendix 2, Appendix 3 and Appendix 4 respectively. The descriptive statistics of the variables reveal that, there is quite a degree of variation in the data utilized so that one should be confident that reasonable estimated nexuses would emerge. The object of the correlation matrix is to mitigate concerns of

[10] An OIR test is only applicable in the presence of over-identification. That is, the instruments must be higher than the endogenous explaining variables by at least one degree of freedom. In the cases of exact- identification (instruments equal to endogenous explaining variables) and under-identifications (instruments less than endogenous explaining variables) an OIR test is by definition impossible.

overparametization and multicolinearity. From the correlation coefficients, there do not appear to be any serious issues in terms of the relationships to be estimated.

3.2 Methodology

The paper adopts a Two-Stage Least Squares (2SLS) Instrumental Variable (IV) estimation technique for two main reasons. While addressing the issue of endogeneity, the IV estimation underpinnings are consistent with the problem statement of the study. Our concern for endogeneity is valid on two main counts. Firstly, the CPI and corruption-control index are perception based measures that may be subject to public opinion bias owing to media propaganda for instance, hence issues of measurement error and omitted variables. Secondly, while investment and fiscal behavior affect corruption, the other way round cannot be ruled-out, hence the concern of reverse causality.

The estimation procedure entails the following steps.

First-stage regression:

$$FB/Investment_{it} = \gamma_0 + \gamma_1 (Instruments)_{it} + \upsilon_{it} \qquad (1)$$

Second-stage regression:

$$Corruption_{it} = \beta_0 + \beta_1 (FB/Investment)_{it} + \beta_i X_{it} + \mu_{it} \qquad (2)$$

In Eq. (2), *X* is a set of control variables which include: *GDP growth* and *inflation*. *FB* denotes *Fiscal behavior* which encompasses *Government's final consumption expenditure* and *Tax revenues*. *Investment* entails *Public investment* and *Private investment*. Instrumental variables are: *Total NODA, NODA from DAC countries, NODA from MD* and *Grants.* For the first and second equations, v and u, respectively represent the error terms.

Three main steps are adopted in the estimation process. First, we justify the choice of the 2SLS IV estimation strategy with a Hausman test for endogeneity. Second, we verify that the instruments are exogenous to the endogenous components of explaining variables (fiscal behavior and investment channels) conditional on other covariates (control variables). Third, we ensure the instruments are valid and not correlated with the error term in the equation of interest with an OIR test. Further robustness checks will be ensured with: (1) modeling with robust Heteroscedasticity and Autocorrelation Consistent (HAC) standard errors; (2) usage of two corruption indicators and; (3) employment of linear and nonlinear instrumental variables.

4. Empirical Analysis

4.1 Presentation of results

The section aims to examine two main issues: (1) the capacity of the exogenous components of fiscal behavior and investment mechanisms to explain corruption and; (2) the ability of the instruments to explain corruption through the mechanisms. While the first issue is addressed by the significance and signs of estimated coefficients, the second concern is tackled with the Sargan-OIR test. The null hypothesis of this test is the position that, the aid instruments explain corruption only through the fiscal behavior and investment mechanisms. Hence, a rejection of this null hypothesis is a rejection of the view that the instruments do not explain corruption beyond the proposed channels. A Hausman test is performed prior to the 2SLS-IV estimation. The null hypothesis of this test is the position that estimated coefficients by OLS are efficient and consistent. Hence, a rejection of this null hypothesis points to the concern of endogeneity due to inconsistent estimates and thus, justifies to the choice of the IV estimation technique. Given the problem statement of the paper, the Hausman is a necessary but not a

sufficient condition for the 2SLS-IV approach. Hence, we still employ the IV procedure even in the absence of endogeneity.

Table 2 below presents a summary of results in Tables 3-4. Modeling in Table 3(4) is based on linear (nonlinear) instruments. Panel A (B) of Tables 3-4 is concerned with the effect on corruption (corruption-control). Whereas Tables 3-4 assess the first and second issues highlight above, Table 2 is based on only the second issue. We are more interested in the second issue because it is premised on evidence of the first issue. In other words, the second issue can only be examined once the first has been confirmed. The synthesis in Table 2 is based on the following information criteria: (1) the estimated coefficient should be significant; (2) the adjusted coefficient of determination should not be negative; (3) the Fisher statistics should be significant; (4) the null hypothesis of the Sargan OIR test should not be rejected for the validity of the foreign aid instruments; (5) the Hausman test has a purely informational role and is not indispensible for the validity of the model and; (6) a positive effect on the CPI indicates a decrease in corruption because the CPI measures corruption in decreasing magnitude.

The following general conclusions could be drawn from Table 2. (1) With the instrumentality of foreign aid, tax efforts broadly decrease (increase) corruption (corruption-control) while government's final consumption expenditure has the opposite effects. (2) Foreign aid that is channeled through investment mechanisms (public and private) broadly mitigates (improves) corruption (corruption-control). (3) There are no significant asymmetries in the signs of dimensions in comparable fundamental characteristics. Hence, evidence of wealth-effect, legal-origin effect…. landlocked-effect cannot be genuinely established. (4) Most of the significant control variables have the expected signs: inflation broadly encourages corruption as public officials turn to seek more rents in order to cope with rising prices and; economic

prosperity in African countries has been found to deteriorate corruption-control irrespective of initial corruption-control levels (Asongu, 2013e, pp. 43-44).

Table 2: Summary of Results

	Income Levels				Legal Origins		Religious Dom.		Regions		Resources		Stability		Landlocked(LL)		Africa
	UMI	LMI	MI	LI	English	French	Christ.	Islam	SSA	NA	Oil	Non-oil	Conflict	Non-co.	LL	Not LL	
Panel A: Specifications in Panel A of Table 3 (Corruption)																	
Gov. Exp.	na	-	na	na	na	na	na	na	na	-°	-	na	na	na	na	na	na
Tax Rev.	+	na	na	na	na	na	na	na	na	+	+	na	na	na	na	na	+
Pub. Invt.	na	+	na	na	na	na	na	na	na	na	-	na	-	na	na	na	na
Panel B: Specifications in Panel B of Table 3 (Corruption-Control)																	
Gov. Exp.	na	na	na	na	na	na	na	na	na	-°	-	na	+	na	na	na	na
Tax Rev.	na	na	na	na	na	na	na	na	na	+°	+	na	na	na	+	na	na
Pub. Invt.	na	+	na	na	na	na	na	+	na	na	-	na	+	na	na	na	na
Panel C: Specifications in Panel A of Table 4 (Corruption)																	
Gov. Exp.	-	na	na	na	na	na	-	na	na	na	-	-	na	-	na	na	-
Tax Rev.	na	-	na	na	+°	na	na	-	+	+	na	na	na	+	+	na	+
Pub. Invt.	+	+	+°	na	na	na	na	+	+	+	+	na	+°	na	na	+°	na
Priv. Invt.	na	+	na	na	na	+	na	+	na	+	na	+	na	+	na	na	+
Panel D: Specifications in Panel B of Table 4 (Corruption-Control)																	
Gov. Exp.	-	na	na	na	na	na	na	na	na	na	-	-	+	na	na	na	na
Tax Rev.	na	na	na	na	+	na	na	+	na	-	na	na	+	na	na	na	na
Pub. Invt.	na	+	na	+	na	na	+	-	+	+	+	na	na	na	na	na	+
Priv. Invt.	-	+	na	na	na	+	+	-	na	+	na	+	-	na	na	na	na

Gov. Exp: Government Expenditure. Tax Rev: Tax Revenue. Pub. Invt: Public Investment. Priv Invt: Private Investment. UMI: Upper Middle Income. LMI: Lower Middle Income. MI: Middle Income. LI: Low Income. English: English Common-law. French: French Civil-law. Christ: Christianity dominated countries. Islam: Islam dominated countries. SSA: Sub-Saharan Africa. NA: North Africa. Oil: Petroleum exporting countries. Non-oil: Countries with no significant exports in petroleum. Conflict: Countries with significant political instability. Non-co: Countries without significant political instability. Dom: Domination. na: insignificant estimate or variable not included in model. °: negative coefficient of determination, significant Sargan OIR test (invalid instruments) or insignificant Fisher statistics. +(-): positive (negative) effect.

Table 3: Comparative assessment with linear foreign aid instruments (with HAC standard errors)

	Income Levels				Legal Origins		Religious Dom.		Regions		Resources		Stability		Landlocked (LL)		Africa
	UMI	LMI	MI	LI	English	French	Christ.	Islam	SSA	NA	Oil	Non-oil	Conflict	Non-co.	LL	Not LL	
Panel A: Corruption																	
Constant	**4.05*** **	1.479	**3.839*** **	7.986	6.068	2.776	3.097	-1.434	1.922	-0.984	**0.83*** **	2.864	**2.60*** **	2.864	0.087	**4.689*** **	**1.879***
	(0.000)	(0.352)	**(0.003)**	(0.310)	(0.188)	(0.472)	(0.540)	(0.921)	(0.648)	(0.466)	**(0.000)**	(0.284)	**(0.000)**	(0.284)	(0.980)	**(0.000)**	**(0.055)**
Gov. Exp.	-0.023	**-0.288** **	-0.204	0.090	-0.100	-0.024	-0.113	-0.785	-0.084	**-0.2*** **	**-0.009*** **	-0.068	-0.021	-0.068	0.060	-0.018	-0.061
	(0.428)	**(0.035)**	(0.223)	(0.587)	(0.355)	(0.496)	(0.380)	(0.796)	(0.460)	**(0.000)**	**(0.000)**	(0.462)	(0.365)	(0.462)	(0.526)	(0.870)	(0.491)
Pub. Invt.	0.041	**0.359** **	0.141	-0.164	-0.329	-0.004	-0.009	0.414	0.050	0.154	**-0.07*** **	-0.050	**-0.08*** **	-0.050	0.168	-0.207	---
	(0.599)	**(0.049)**	(0.271)	(0.608)	(0.261)	(0.989)	(0.971)	(0.722)	(0.817)	(0.284)	**(0.000)**	(0.748)	**(0.001)**	(0.748)	(0.460)	(0.086)	
Tax rev.	**0.02*** **	0.035	0.005	-0.347	-0.005	0.031	0.039	0.345	0.073	**0.22*** **	**0.08*** **	0.057	---	0.057	0.039	---	**0.091** **
	(0.000)	(0.309)	(0.920)	(0.455)	(0.959)	(0.724)	(0.791)	(0.783)	(0.560)	**(0.000)**	**(0.000)**	(0.468)		(0.468)	(0.500)		**(0.013)**
Hausman	**17.7*** **	5.533	6.182	**12.91*** **	**18.0*** **	0.690	**7.405***	**8.124***	**6.330***	**13.0*** **	---	**13.87*** **	**3.43*** **	**13.87*** **	1.941	**25.82*** **	**5.361***
	(0.000)	(0.136)	(0.103)	**(0.004)**	**(0.000)**	(0.875)	**(0.060)**	**(0.043)**	**(0.096)**	**(0.000)**		**(0.000)**	**(0.000)**	**(0.000)**	(0.584)	**(0.000)**	**(0.068)**
Sargan OIR	**2.661**	**0.002**	**1.757**	**0.001**	**0.172**	**2.55**	**1.051**	**0.002**	**1.786**	**0.305**	**0.004**	**0.542**	**3.060**	**0.542**	**0.131**	4.977*	**0.436**
	(0.102)	**(0.963)**	**(0.184)**	**(0.973)**	**(0.677)**	**(0.110)**	**(0.305)**	**(0.960)**	**(0.181)**	**(0.580)**	**(0.948)**	**(0.461)**	**(0.216)**	**(0.461)**	**(0.717)**	(0.083)	**(0.803)**
Adjusted R^2	0.051	0.463	0.025	-0.063	-0.035	0.022	0.060	-0.056	0.183	-0.097	0.869	0.107	0.100	0.107	-0.057	0.011	0.183
Fisher	**8.02*** **	**3.621** **	**2.436***	0.699	1.486	0.215	1.499	0.116	2.026	**39.0*** **	---	**2.964** **	**17.1*** **	**2.964** **	0.360	**2.452***	**5.488*** **
Panel B: Corruption Control																	
Constant	-0.019	-1.811	0.662	-0.283	0.618	-2.306	-0.987	**-1.2*** **	-2.590	**-2.01** **	**-1.2*** **	-2.848	**-1.9*** **	-2.848	**-1.513** **	-2.347	-3.122
	(0.914)	(0.135)	(0.776)	(0.808)	(0.631)	(0.403)	(0.704)	**(0.000)**	(0.531)	**(0.025)**	**(0.000)**	(0.558)	**(0.000)**	(0.558)	**(0.036)**	(0.165)	(0.640)
Gov. Exp.	-0.024	-0.000	-0.209	0.040	-0.072	0.033	-0.061	-0.006	-0.069	**-0.07*** **	**-0.004***	-0.076	**0.01*** **	-0.076	-0.005	0.062	-0.076
	(0.243)	(0.999)	(0.333)	(0.357)	(0.163)	(0.617)	(0.337)	(0.835)	(0.555)	**(0.000)**	**(0.064)**	(0.561)	**(0.000)**	(0.561)	(0.786)	(0.367)	(0.627)
Pub. Invt.	0.047	**0.288** **	0.064	-0.005	-0.076	0.203	0.079	**0.107** **	0.200	0.029	**-0.03*** **	0.242	**0.30*** **	0.242	0.064	0.223	0.266
	(0.205)	**(0.034)**	(0.851)	(0.931)	(0.583)	(0.518)	(0.578)	**(0.015)**	(0.491)	(0.498)	**(0.000)**	(0.580)	**(0.000)**	(0.580)	(0.331)	(0.356)	(0.650)
Tax rev.	0.006	-0.027	-0.008	-0.047	-0.001	0.016	0.016	---	0.061	**0.09*** **	**0.03*** **	0.059	-0.005	0.059	**0.022***	0.023	0.065
	(0.165)	(0.105)	(0.838)	(0.505)	(0.968)	(0.623)	(0.837)		(0.623)	**(0.000)**	**(0.000)**	(0.626)	(0.858)	(0.626)	**(0.075)**	(0.266)	(0.642)
Hausman	**8.717** **	**12.60*** **	**21.08*** **	6.148	**26.3*** **	**6.853***	**6.441***	3.922	5.908	**6.392***	---	5.910	**12.4*** **	5.910	**8.379** **	**8.654** **	4.112
	(0.033)	**(0.005)**	**(0.000)**	(0.104)	**(0.000)**	**(0.076)**	**(0.092)**	(0.140)	(0.116)	**(0.093)**		(0.116)	**(0.000)**	(0.116)	**(0.038)**	**(0.034)**	(0.249)
Sargan OIR	**0.001**	**1.707**	**0.064**	**0.350**	**1.697**	**1.050**	**0.413**	**0.453**	**0.016**	**0.474**	**2.216**	**0.097**	**0.087**	**0.097**	**1.384**	**0.385**	**0.048**
	(0.964)	**(0.191)**	**(0.799)**	**(0.553)**	**(0.192)**	**(0.305)**	**(0.520)**	**(0.797)**	**(0.896)**	**(0.490)**	**(0.136)**	**(0.755)**	**(0.767)**	**(0.755)**	**(0.239)**	**(0.534)**	**(0.824)**
Adjusted R^2	-0.012	0.197	-0.026	0.021	-0.035	0.255	-0.002	0.016	0.123	-0.109	0.519	0.099	0.474	0.099	0.230	0.161	0.097
Fisher	1.958	**9.188*** **	0.443	**2.282***	**2.352***	0.270	0.848	**2.945***	0.707	**2133*** **	**1e^14*** **	0.546	**68.6*** **	0.546	**4.436*** **	**2.300***	0.403
Instruments	Constant, Total NODA, NODADAC, NODAMD, Grants																

***, **,*: significance levels of 1%, 5% and 10% respectively. P-values in parentheses. OIR: Over-identifying Restrictions test. UMI: Upper Middle Income. LMI: Lower Middle Income. MI: Middle Income. LI: Low Income. English: English Common-law. French: French Civil-law. Christ: Christianity dominated countries. Islam: Islam dominated countries. SSA: Sub-Saharan Africa. NA: North Africa. Oil: Petroleum exporting countries. Non-oil: Countries with no significant exports in petroleum. Conflict: Countries with significant political instability. Non-co: Countries without significant political instability. Gov. Exp: Government Expenditure. Pub. Invt: Public Investment. Tax rev: Tax revenues. HAC: Heteroscedasticity and Autocorrelation Consistent. NODA: Net Official Development Assistance. DAC: Development Assistance Committee. MD: Multilateral Donors. NODADAC: NODA from DAC countries. NODAMD: NODA from Multilateral Donors. The relevance of bold values that depict the information criteria is threefold. 1) Rejection of the null hypothesis of the Hausman test for the presence of endogeneity. 2) The significance of estimated coefficients and the Fisher statistics. 3) The failure to reject the null hypothesis of the Sargan OIR test for instrument validity.

Table 3: Table 4: Comparative assessment with nonlinear foreign aid instruments (with HAC standard errors)

	Income Levels				Legal Origins		Religious Dom.		Regions		Resources		Stability		Landlocked (LL)		Africa
	UMI	LMI	MI	LI	English	French	Christ.	Islam	SSA	NA	Oil	Non-oil	Conflict	Non-co.	LL	Not LL	
Panel A: Corruption																	
Constant	2.522	**1.298****	1.211	0.860	3.218	**2.24*****	0.868	-1.567	-1.265	**-0.9*****	**2.30*****	2.211	**2.50*****	-0.789	**2.564*****	**2.733*****	-0.584
	(0.130)	**(0.012)**	(0.218)	(0.621)	(0.225)	**(0.000)**	(0.840)	(0.118)	(0.280)	**(0.000)**	**(0.000)**	(0.549)	**(0.000)**	(0.523)	**(0.000)**	**(0.000)**	(0.650)
Gov. Exp.	**-0.075***	0.043	-0.059	-0.006	-0.039	-0.009	**-0.075****	-0.015	-0.079	-0.033	**-0.04****	**-0.081****	-0.018	**-0.073***	0.001	-0.055	**-0.073***
	(0.090)	(0.169)	(0.510)	(0.567)	(0.152)	(0.744)	**(0.028)**	(0.514)	(0.145)	(0.372)	**(0.032)**	**(0.016)**	(0.334)	**(0.088)**	(0.815)	(0.606)	**(0.087)**
Pub. Invt.	**0.21*****	**0.293*****	**0.304*****	0.067	-0.100	0.048	0.124	**0.49*****	**0.206****	**0.51*****	**0.21*****	0.024	**-0.064***	0.141	0.005	**0.246****	0.145
	(0.000)	**(0.000)**	**(0.000)**	(0.376)	(0.489)	(0.176)	(0.564)	**(0.000)**	**(0.021)**	**(0.000)**	**(0.000)**	(0.892)	**(0.063)**	(0.227)	(0.861)	**(0.040)**	(0.124)
Tax rev.	---	**-0.03*****	0.018	-0.003	**0.078****	---	0.094	**-0.10****	**0.15*****	**0.10*****	---	0.053	---	**0.135****	**0.01*****	---	**0.118*****
		(0.000)	(0.715)	(0.966)	**(0.025)**		(0.480)	**(0.032)**	**(0.001)**	**(0.000)**		(0.613)		**(0.015)**	**(0.000)**		**(0.007)**
Priv. Invt.	0.046	**0.040*****	---	0.074	-0.052	**0.054****	0.029	**0.22*****	0.035	**0.25*****	-0.004	0.064*	---	**0.047***	-0.020	0.034	**0.062***
	(0.635)	**(0.000)**		(0.115)	(0.625)	**(0.046)**	(0.188)	**(0.000)**	(0.163)	**(0.000)**	(0.929)	(0.058)		**(0.060)**	(0.391)	(0.599)	**(0.066)**
GDP growth	-0.005	---	0.124	0.011	---	**-0.094***	-0.130	---	---	**-0.259***	**-0.09*****	-0.151	---	---	---	---	---
	(0.968)		(0.345)	(0.764)		**(0.078)**	(0.549)			**(0.077)**	**(0.000)**	(0.358)					
Inflation	0.030	---	---	0.023	---	---	0.018	---	---	---	**-0.06****	---	---	0.015	---	**-0.214***	---
	(0.663)			(0.458)			(0.816)				**(0.023)**			(0.821)		**(0.051)**	
Hausman	**19.1*****	**14.24*****	**10.45****	**11.573***	**8.142***	**14.2*****	**31.51*****	**16.7*****	**27*****	**66.8*****	**70.2*****	**36.3*****	0.744	**31.85*****	6.465	**13.59*****	**21.66*****
	(0.000)	**(0.000)**	**(0.033)**	**(0.072)**	**(0.086)**	**(0.000)**	**(0.000)**	**(0.002)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	(0.689)	**(0.000)**	(0.166)	**(0.008)**	**(0.000)**
Sargan OIR	**0.250**	**1.899**	11.53**	**2.927**	18.1***	**1.642**	**2.466**	**1.097**	**2.099**	**0.353**	**0.140**	**2.184**	12.39*	**2.953**	**4.013**	12.614**	**1.665**
	(0.969)	**(0.754)**	(0.021)	**(0.231)**	(0.000)	**(0.801)**	**(0.291)**	**(0.894)**	**(0.717)**	**(0.949)**	**(0.986)**	**(0.534)**	(0.053)	**(0.398)**	**(0.404)**	(0.013)	**(0.796)**
Adjusted R^2	0.010	0.641	0.054	0.097	0.149	0.175	0.158	0.306	0.285	0.195	0.020	0.140	0.093	0.242	0.325	0.015	0.269
Fisher	**152*****	**39.52*****	**3.651*****	**2.228***	**3.518****	**5.67*****	**3.79*****	**23.9*****	**8.73*****	**4e^14******	**1516*****	**3.58*****	**24.9*****	**9.970*****	**1058*****	1.554	**7.04*****
Panel B: Corruption Control																	
Constant	-0.635	**-1.55*****	-0.723	**-1.21*****	0.628	**-1.9*****	**-1.387***	1.665	-1.048	**-1.9*****	**-0.91*****	2.211	**-1.59*****	-0.825	-2.332	**-3.309***	-1.402
	(0.395)	**(0.000)**	(0.191)	**(0.007)**	(0.382)	**(0.00)**	**(0.072)**	(0.221)	(0.187)	**(0.000)**	**(0.000)**	(0.549)	**(0.000)**	(0.436)	(0.344)	**(0.097)**	(0.129)
Gov. Exp.	**-0.012***	0.012	-0.020	-0.023	---	0.031	-0.023	---	-0.014	0.0009	**-0.02****	**-0.08****	**0.01*****	-0.026	-0.019	0.098	-0.015
	(0.094)	(0.427)	(0.679)	(0.456)		(0.240)	(0.260)		(0.412)	(0.912)	**(0.000)**	**(0.000)**	**(0.000)**	(0.372)	(0.399)	(0.254)	(0.355)
Pub. Invt.	-0.007	**0.095***	0.016	**0.103****	0.016	0.171	**0.102*****	**-0.162***	**0.081****	**0.16*****	**0.09*****	0.024	0.035	0.079	0.085	0.026	**0.100****
	(0.889)	**(0.058)**	(0.842)	**(0.013)**	(0.817)	(0.239)	**(0.000)**	**(0.086)**	**(0.030)**	**(0.000)**	**(0.000)**	(0.892)	(0.633)	(0.238)	(0.451)	(0.592)	**(0.035)**
Tax rev.	---	-0.001	0.013	0.008	**0.045****	-0.014	---	**0.086****	---	**-0.04*****	---	0.053	**0.038****	---	0.017	0.405	---
		(0.847)	(0.186)	(0.734)	**(0.029)**	(0.595)		**(0.031)**		**(0.000)**		(0.613)	**(0.023)**		(0.255)	(0.211)	
Priv. Invt.	-0.003	**0.030*****	---	---	-0.080	**0.04*****	**0.085****	**-0.120***	0.061	**0.09*****	-0.006	**0.064***	**-0.032***	0.068	0.025	-0.001	0.079
	(0.933)	**(0.000)**			(0.184)	**(0.000)**	**(0.039)**	**(0.060)**	(0.114)	**(0.000)**	(0.242)	**(0.058)**	**(0.058)**	(0.260)	(0.801)	(0.978)	(0.118)
GDP growth	**0.139****	**0.027*****	**0.067****	-0.026	---	-0.091	**-0.188****	---	**-0.16****	**-0.04****	**-0.07*****	-0.151	---	**-0.215*****	0.107	-0.104	**-0.17****
	(0.034)	**(0.002)**	**(0.014**	(0.562)		(0.571)	**(0.019)**		**(0.027)**	**(0.010)**	**(0.000)**	(0.358)		**(0.000)**	(0.313)	(0.725)	**(0.029)**
Inflation	**0.07*****	**-0.02*****	---	-0.005	**-0.08*****	---	---	**-0.13****	---	-0.010	**0.01*****	---	---	---	**-0.01*****	0.001	---
	(0.004)	**(0.000)**		(0.248)	**(0.003)**			**(0.0125)**		(0.475)	**(0.000)**				**(0.005)**	(0.948)	
Hausman	**13.17****	2.256	1.987	**12.33****	**81.2*****	6.617	**53.07*****	**25.3*****	**34.2*****	**20.8*****	**43.8*****	**36.36*****	**85*****	**50.09*****	8.443	**20.52*****	**26.16*****
	(0.021)	(0.894)	(0.737)	**(0.030)**	**(0.000)**	(0.250)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	(0.207)	**(0.000)**	**(0.000)**
Sargan OIR	**2.505**	**3.668**	21.33***	**1.842**	**0.384**	**1.550**	**2.148**	**0.487**	**5.337**	**0.496**	**1.172**	**2.184**	**1.203**	**4.627**	**0.260**	**0.1101**	**4.038**
	(0.474)	**(0.159)**	(0.000)	**(0.605)**	**(0.983)**	**(0.670)**	**(0.708)**	**(0.974)**	**(0.254)**	**(0.780)**	**(0.759)**	**(0.534)**	**(0.877)**	**(0.327)**	**(0.877)**	**(0.946)**	**(0.400)**
Adjusted R^2	0.100	0.753	0.040	0.106	0.040	0.294	0.049	0.099	0.053	0.268	0.046	0.140	0.810	0.006	0.074	0.088	0.065
Fisher	**5.01*****	**190.7*****	1.912	**5.154*****	**6.28*****	**4.68*****	**5.006*****	**17.5*****	**3.280****	---	---	**3.583*****	**1e^6*****	**2.822****	**15.84*****	1.549	**2.361***
Instruments	Constant, Total NODA, NODADAC, NODAMD, Grants, (Total NODA)², (NODADAC)², (NODAMD)², (Grants)²																

***, **,*: significance levels of 1%, 5% and 10% respectively. P-values in parentheses. OIR: Over-identifying Restrictions test. UMI: Upper Middle Income. LMI: Lower Middle Income. MI: Middle Income. LI: Low Income. English: English Common-law. French: French Civil-law. Christ: Christianity dominated countries. Islam: Islam dominated countries. SSA: Sub-Saharan Africa. NA: North Africa. Oil: Petroleum exporting countries. Non-oil: Countries with no significant exports in petroleum. Conflict: Countries with significant political instability. Non-co: Countries without significant political instability. Gov. Exp: Government Expenditure. Pub. Invt: Public Investment. Priv. Invt: Private Investment. Tax rev: Tax revenues. HAC: Heteroscedasticity and Autocorrelation Consistent. NODA: Net Official Development Assistance. DAC: Development Assistance Committee. MD: Multilateral Donors. NODADAC: NODA from DAC countries. NODAMD: NODA from Multilateral Donors. The relevance of bold values that depict the information criteria is threefold. 1) Rejection of the null hypothesis of the Hausman test for the presence of endogeneity. 2) The significance of estimated coefficients and the Fisher statistics. 3) The failure to reject the null hypothesis of the Sargan OIR test for instrument validity.

4.2 Discussion of results, policy implications and caveats

4.2.1 Discussion of results

For over 50 years, the political economy of foreign aid has been substantially debated in academic and policy-making circles. A great chunk of the literature on institutions and development has concluded that Africa is poor because it lacks good institutions: lack of property rights, weak courts and contract-enforcements, dictatorships, political instability, hostile regulatory environment for private business and high corruption (Easterly, 2005; Kodila-Tedika, 2012, 2013). According to this strand, in order to end poverty in Africa, the West needs to promote good institutions in the continent. With the concern of how aid could promote good institutions in aid-recipient countries, a substantial bulk of the literature has focused on how institutions matter in the effectiveness of development assistance (Alesina & Dollar, 2000; Alesina & Weder, 2002; Knack, 2001; Dixit, 2004; Djankov et al., 2005). This paper has focused on the second strand of the challenges (highlighted in the introduction) by extending an ongoing debate on 'the effect of foreign aid on corruption' using investment and fiscal behavior transmission mechanisms. From the available weight of empirical evidence (summarized in Table 2), we have broadly established that, but for government's final consumption expenditure, tax efforts and investment channels (public and private) decrease (increase) corruption (corruption-control).

a) Corruption, (the composition of) government expenditure and aid

On the general negative nexus between government expenditure and corruption-control, we argue that government's final expenditure (both in collective and individual consumption terms) offers a breeding ground for more rent seeking and corrupt activities. The key idea here is

that corrupt politicians and/or government officials would try to channel public funds to those expenditures that provide more lucrative opportunities for bribery. Consistent with Shleifer & Vishny (1993), corrupt officials will choose to spend money on goods whose true value is difficult to be identified by agents. While problems due to information do arise again and this hypothesis has not been examined using static or dynamics frameworks, it is reasonable to assume that it is quite appealing. Hence, expenditure on military and high technology goods are some candidates for providing such lucrative opportunities. In fact, corruption and military spending have been found to be closely associated (Gupta et al., 2000) especially in military aircraft (Hines, 1995). No surprising the worst post-apartheid corruption scandal (that has embroiled President Jacob Zuma) has been linked to the purchase of military equipment. In the same vein, in terms of high technology, the 'Albatross' jet affair that has rocked the Cameroonian institutional landscape has seen the arrest of many high profile politicians over the spectacular disappearance of $ 25 million destined for the purchase of a presidential plane.

Conversely, expenditures on education do not seem to provide any opportunities at all. For instance, it would be difficult for a government official to collect bribes for appointing unqualified persons to teaching positions. This line of interpretation could be extended more or less to expenditures on health although one can argue that sophisticated hospital equipment could give rise to opportunities of bribery. Hence, it is natural that a recent budget scandal in South Africa has been the government's spending of R4 billion on entertainment, catering and travel allowance in 2011 whilst under-spending in health initiatives, leaving 47% of metropolitan South Africans dissatisfied. This confirms recent findings that corruption is associated with low spending on education and health in developing countries (Mauro, 1998; De la Croix & Delavallade, 2007).

In light of the above, the instrumentality of foreign aid in the composition of government expenditure that induces corruption is obvious. Accordingly, the project approach to foreign aid has underestimated the incentive problems with aid delivery. Thus, health and education ministries must be motivated to get medicines and school inputs to the citizens. Moreover, donor bureaucracies themselves must have the incentive to make sophisticated infrastructural projects work. Firstly, looking at health, some of the initial progress in Africa has slowed possibly due to corruption (Easterly, 2005, p.8). Studies in Guinea, Cameroon, Uganda and Tanzania estimated that 30 to 70% of government drugs disappeared before reaching the patients and complicated health problems cannot be solved with routine methods (Filmer et al., 2000; Prichett & Woolcock, 2004). Secondly, as regards education, while enrollments have expanded rapidly, the quality of education has been hampered by missing inputs like textbooks and other school materials, weak incentives for teachers and corruption in education bureaucracies (Filmer & Pritchett, 1997). Thirdly, on the bureaucracy of sophisticated projects, there have been some alarming dysfunctional signs. For instance, donors have spent over $2 billion over the last 20 years on roads in Tanzania, but the roads have not improved. In fact the principal output has been aid bureaucracy, with the Tanzanians producing 2,400 reports for the 1000 donor missions and government experts each year. To summarize the three points highlighted above with an example, Swaziland is good candidate that substantially relies on foreign aid, spends over 55% of its public spending on the wage bill, loses nearly double the annual social service budget to corruption, sells food aid and deposits the money in foreign bank accounts…etc.

b) Tax effort, corruption and aid

The positive nexus between tax effort and corruption-control is consistent with the bulk of studies that have argued that a more legitimate and responsive state (in terms of voice & accountability and corruption-control) is an essential factor for more adequate level of tax effort in developing countries (Bird, 2007). Accordingly, the main reason for low tax effort in African countries may be that it is not in the interest of those who dominate the political institutions of such countries to increase taxes. Hence, if institutions are modified to produce more 'pro-fiscal' outcomes[11], it is an indication of decreased (more) corruption (corruption-control) and growing voice & accountability. The underlying intuition motivating this argument is that for more taxes to be collected less tax funds should be siphoned by tax collecting officials or less tax officials should be bribed into not collecting the required amount of taxes. Another explanation of the relationship inherently lies in the definition of corruption. Accordingly, 'the effect of corruption' which is typically defined as the abuse of public power for private benefit is captured by an index that measures that extent to which bribes are generally expected by government officials in relation to, inter alia, tax assessments, trade licenses and exchange controls. Thus it is logical to infer that the rise in tax revenues is significantly associated with a weakening in corrupt activities that stand on the way of tax efforts.

Fixing tax revenue targets as has been the case of some African countries in recent decades increases tax efforts, tax revenues and consequently decreases corruption related to the collection of taxes. A good example is Cameroon where the adoption of revenue targets at the

[11] Our results are consistent with Mkandawire (2011) 'on tax effort and colonial heritage' in the position that English common-law countries are likely to witness this scenario.

Douala Seaport[12] has led to an unprecedented surge in revenue and at the same time unraveled corruption networks.

The instrumentality of foreign aid in the above highlighted nexuses could be explained by institutional requirements of donor agencies, especially in terms of voice & accountability. Accordingly, when Western agencies require institutions to be more accountable to development assistance, this may lead to increased tax efforts for two main reasons. Firstly, authorities in place may want to show that they need grants because their tax revenues are not enough to finance government projects. The only proper way is doing this is proving that current tax efforts are genuine and not tainted by corruption practices. Secondly, depending on the composition of aid, concessional loans are associated with higher domestic revenue mobilization. This explanation is consistent with empirical evidence which suggest that for those countries with high levels of corruption, the decline in revenues completely offset the increases in grants (Gupta et al., 2003). Moreover the positive association between aid and tax effort that ultimately increases corruption-control may be due to a higher composition of loans in the development assistance (Benedek et al., 2012). It is only natural that more tax should be collected to service the loans.

c) Investment, corruption and aid

As far as we have reviewed, while there are many studies on the impact of corruption on investment (Baliamoune-Lutz & Ndikumana 2008), very few works have assessed this relationship the other way round. Larrain & Tavares (2004) which have investigated the incidence of foreign investment on corruption is the study that is closest to the current analysis: foreign aid destined for investment purposes can also be indirectly considered as foreign direct

[12] We chose the Douala Seaport as an example because; it serves both Cameroon and other neighboring landlocked countries like Chad and the Central African Republic.

investment (FDI) used by Larrain & Tavares (2004). Our findings differ from those of Larrain & Tavares (who has established that FDI is significantly associated with lower levels of corruption) from three main standpoints: the use of a more updated database; the instrumentality of aid in the effect and conditionality of bureaucracies in the effect. Firstly, we have used a more updated dataset (1996-2010) in comparison to their study which used data for the period 1970-1994. Secondly, in our results the nexus between investment and corruption is contingent on foreign aid. Thirdly, it should be noted that the positive effect of investment on corruption-control, conditional on aid does not amount to investment effectiveness. Accordingly, in the vein of the highlighted Tanzanian case on roads construction above, aid-led-investments may substantially increase accountability through more layers of bureaucracy. Hence, more funds allocated for the projects may be spent on consultancies which eventually lead to the ineffectiveness of the project while at the same time increasing corruption-control. Ultimately, if foreign aid is destined to less sophisticated public and private investments, whose true values are not difficult to be identified by agents, then corrupt officials are less likely to siphon.

d) How the findings reconcile the debate

The Okada & Samreth (2012) and Asongu (2012a, 2013a) debate has centered along two main axes. While the former has presented a case for the negative incidence of aid on corruption in developing countries, the latter has rejected the findings within the context of Africa. Our results have reconciled the debate by using fiscal policy and investment channels of foreign aid to corruption. Accordingly, while the 'government's final consumption expenditure' channel is broadly consistent with Asongu (2012a, 2013a) in the perilous (mitigating) effect of aid to (on) corruption (corruption-control), the investment and tax effort channels are broadly in accordance with Okada & Samreth (2012). The former nexus is broadly in line with the first strand of the

literature that has firmly established a negative aid-development nexus (Mosley et al., 1992; Reichel, 1995; Ghura, 1995; Boone, 1996; Pedersen, 1996) while the latter relationship is in accordance the bulk of studies that have concluded on the beneficial effects of aid (Ghura, 1995; Burnside & Dollar, 2000; Guillaumont & Chauvet, 2001; Collier & Dehn, 2001, Collier & Dollar, 2001; Feeny, 2003; Gomanee et al., 2003; Clement et al., 2004; Ishfaq, 2004; Mosley et al., 2004; Addison et al., 2005; Fielding et al., 2006; Minou & Reddy, 2010; Resnick, 2012).

4.2.2 Fighting corruption with foreign aid through constraints on fiscal behavior

Donor agencies can condition aid on the improvement of the fiscal system and management. We shall briefly discuss 'revenue side' and 'expenditure side' constraints on which foreign aid can be conditioned to improve fiscal behavior in an effort to fight corruption.

On the revenue side of fiscal management the following constraints are worthwhile. First, a tax administration reform that will see the implementation of important anti-corruption measures within the tax administration, including updating and modernizing tax agency procedures; restructuring of internal organization based on function (identification, assessment, billing…etc) rather than by type of tax; limiting the discretionary power of tax officials; reducing the number of clearances that are required from taxpayers to complete compliance processes (i.e., the number certifications, forms, stamps, signatures… etc); tax liability self-assessment and exploring the use of electronic filling. Second, semi-autonomous revenues authorities are also necessary. Accordingly, when properly implemented, this enclave approach to tax administration reform will increase the possibility of de-politicizing tax officials, increase wage levels for tax officials and strengthen internal monitoring mechanisms. These semi-autonomous authorities have already been introduced in countries as diverse as Bolivia, Malaysia, New Zealand, Singapore, Guatemala, Ghana, Guyana, Kenya, Malawi, Mexico, Peru, Rwanda, South Africa,

Tanzania, Uganda, Venezuela and Zambia (Talercia, 2003; Bird, 2004; Martinez-Vazquez et al., 2006). Third, reforms of the tax system can reduce opportunities for corruption and simplifying the tax system by reducing the number of discretionary tax incentives, deductions and exemptions.

On the supply side of the fiscal management, the following constraints are applicable. Firstly, a modern treasury system should be installed so as to improve transparency in cash management and disbursement of resources for items authorized in the budget, required for the consistency between budget formulation and budget execution. It is important for the treasury to operate separately from spending agencies and discretionary power of treasury officials can be mitigated by separating departments responsible for each budget execution stage. Secondly, financial management reforms should be required by aid agencies in order to strengthen basic procedures of budget accounting, auditing and reporting. Accordingly, the public expenditure management system should take advantage of integrated financial management systems and information technologies. Thirdly, a public spending tracking system should be developed to identify leaks in the budget implementation stage. Fourthly, a procurement system reform should be required to ease the establishment of standardized procurement processes, ensure maximum exposure and competition of foreign and national bidders as well as satisfy international procurement standards. Since procurement systems can be particularly useful if coupled with the necessary administrative capacity, independent auditing of the procurement procedures should be conducted regularly and reviewed by parliament. Fifthly, a comprehensive coverage of the budget should minimize extra-budgetary and off-budget accounts in order to maximize transparency in the use of public resources. Sixthly, strategies that emphasize political representation and accountability are necessary since broad political contestability decreases the

opportunities of state capture. Ordinary citizens should have access to relevant information regarding public spending, including parliamentary debates on the budget formulation. Seventhly, civil service reform should be oriented towards key measures that reduce the probabilities of corruption and patronage such as: professionalization and de-politicization of public servants, merit-based recruitment and reduction of turnover rates.

Besides imposing constraints to improve fiscal behavior from the revenue and expenditure sides in aid-recipient countries, donors should also require an intergovernmental fiscal structure that favors the decentralization of spending responsibilities and revenue sources. This will improve local governments' greater autonomy and increased accountability to citizens can be instrumental in reducing corruption in the aid-funded projects.

4.2.3 Caveats and future research directions

Owing to the scope and positioning of the paper, in the analysis we have failed to incorporate two main distinctions that could have provided more focused policy implications. Firstly, the distinction between concessional loans and grants in the measurement of development assistance will enable a better understanding of the instrumentality of aid in the nexuses. For example, the type of foreign aid that increases tax efforts. Secondly, it would have been interesting to decompose government expenditure into its constituent elements as to understand which components favor corrupt activities, since politicians and/or government officials would try to channel public funds to those expenditures that provide more lucrative opportunities for bribery. Therefore, the above caveats are interesting future research directions.

5. Conclusion

The Okada & Samreth (2012, EL) and Asongu (2012, EB; 2013, EEL) debate on 'the effect of foreign aid on corruption' has had an important influence in policy and academic circles. This paper has provided a unifying framework by using investment and fiscal behavior transmission channels in 53 African countries for the period 1996-2010. Findings have reconciled the debate and broadly suggest that while the 'government's final consumption expenditure' channel is consistent with the latter author, the investment and tax effort channels are in line with the former authors. Justifications for the nexuses have been provided. Policy implications on how to use foreign aid constraints in managing fiscal behavior as means of reducing (increasing) corruption (corruption-control) have been discussed.

Appendices

Appendix 1: Summary Statistics

	Variables	Mean	S.D	Min.	Max.	Observations
Corruption	Corruption Perception Index	2.984	1.065	1.000	6.400	462
	Corruption Control Index	-0.607	0.623	-2.495	1.086	622
Fiscal Behaviour	Government Expenditure	4.392	12.908	-57.815	90.544	468
	Tax Revenues	17.693	10.096	0.116	61.583	262
Investment	Public Investment	7.449	4.500	0.000	39.984	655
	Private Investment	12.979	9.400	-2.437	112.35	658
Control variables	GDP growth	4.763	7.293	-31.300	106.28	759
	Inflation	57.556	955.55	-100.00	24411	673
Instrumental variables	Total NODA	10.811	12.774	-0.251	148.30	704
	NODA from DAC countries	6.244	8.072	-0.679	97.236	704
	NODA from Multilateral Donors	4.481	5.512	-1.985	64.097	704
	Grants	0.069	0.115	0.000	1.477	773
	Upper Middle Income	0.188	0.391	0.000	1.000	795
	Lower Middle Income	0.226	0.418	0.000	1.000	795
	Middle Income	0.415	0.493	0.000	1.000	795
	Low Income	0.584	0.493	0.000	1.000	795
	English	0.377	0.485	0.000	1.000	795
	French	0.622	0.485	0.000	1.000	795
	Christianity	0.622	0.485	0.000	1.000	795

Categorization	Islam	0.377	0.485	0.000	1.000	795
	Sub-Saharan Africa	0.886	0.317	0.000	1.000	795
	North Africa	0.113	0.317	0.000	1.000	795
	Oil	0.188	0.391	0.000	1.000	795
	Non-oil	0.811	0.391	0.000	1.000	795
	Conflict	0.226	0.418	0.000	1.000	795
	Non-conflict	0.773	0.418	0.000	1.000	795
	Landlocked	0.283	0.450	0.000	1.000	795
	Not Landlocked	0.716	0.450	0.000	1.000	795

S.D: Standard Deviation. Min: Minimum. Max: Maximum.

Appendix 2: Correlation Analysis

Fiscal Behavior		Investment		Control variables		Foreign Aid and Grants				Corruption		
Gov. Ex	Tax rev.	Pub. Ivt	Priv. Ivt	GDPg	Inflation	Total NODA	NODADAC	NODAMD	Grants	CPI	CC	
1.000	0.098	0.120	0.054	0.103	-0.139	0.039	0.038	0.021	0.036	-0.053	0.082	Gov. Ex
	1.000	0.347	0.448	-0.040	-0.213	-0.309	-0.304	-0.277	-0.290	0.496	0.508	Tax rev.
		1.000	-0.037	0.120	-0.072	0.195	0.141	0.220	0.075	0.089	0.215	Pub. Ivt
			1.000	0.372	-0.042	-0.222	-0.181	-0.240	-0.174	0.291	0.151	Priv. Ivt
				1.000	-0.057	0.053	0.034	0.073	0.069	-0.047	-0.054	GDPg
					1.000	-0.004	0.009	-0.022	0.007	-0.047	-0.077	Inflation
						1.000	0.955	0.900	0.808	-0.229	-0.146	Total NODA
							1.000	0.733	0.780	-0.217	-0.148	NODADAC
								1.000	0.716	-0.217	-0.123	NODAMD
									1.000	-0.178	-0.117	Grants
										1.000	0.886	CPI
												CC

Gov. Ex: Government Expenditure. Tax rev: Tax revenues. Pub. Ivt: Public Investment. Priv. Ivt: Private Investment. GDPg: GDP growth. NODA: Net Official Development Assistance. DAC: Development Assistance Committee. MD: Multilateral Donors. NODADAC: NODA from DAC countries. NODAMD: NODA from MD. CPI: Corruption Perception Index. CC: Corruption Control Index.

Appendix 3: Variable Definitions

Variables	Signs	Variable Definitions (Measurement)	Sources
Corruption Perception Index	CPI	Corruption Perception Index or perceived levels of corruption (the misuse of public power for private benefit) as determined by expert assessments and opinion surveys.	World Bank (WDI)
Corruption Control Index	CC	Control of corruption (estimate): captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests.	World Bank (WDI)
Government Expenditure	Gov. Ex	Government Final Consumption Expenditure (% of GDP)	World Bank (WDI)
Tax Revenue	Tax rev.	Tax Revenue (% of GDP)	World Bank (WDI)
Public Investment	Pub. Ivt	Gross Public Investment (% of GDP)	World Bank (WDI)
Private Investment	Priv. Ivt	Gross Private Investment (% of GDP)	World Bank (WDI)
GDP Growth	GDPg	Average annual GDP growth rate	World Bank (WDI)
Inflation	Inflation	Consumer Price Index (Annual %)	World Bank (WDI)
Foreign Aid (1)	Total Aid	Total Net Official Development Assistance (% of GDP)	World Bank (WDI)
Foreign Aid (2)	DAC Aid	NODA from DAC Countries (% of GDP)	World Bank (WDI)
Foreign Aid (3)	DAC Aid	NODA from Multilateral Donors (% of GDP)	World Bank (WDI)
Grants	Grants	Grants excluding technical cooperation (% of GDP)	World Bank (WDI)

WDI: World Bank Development Indicators. NODA: Net Official Development Assistance. DAC: Development Assistance Committee.

Appendix 4: Categorization of Countries

Category	Panels	Countries	Num
Income Levels	Upper Middle Income	Algeria, Botswana, Equatorial Guinea, Gabon, Libya, Mauritius, Namibia, Sao Tome & Principe, Seychelles, South Africa.	10
	Lower Middle Income	Angola, Cameroon, Cape Verde, Côte d'Ivoire, Egypt, Lesotho, Morocco, Nigeria, Senegal, Sudan, Swaziland, Tunisia.	12
	Middle Income	Algeria, Angola, Botswana, Cameroon, Cape Verde, Côte d'Ivoire, Egypt, Equatorial Guinea, Gabon, Lesotho, Libya, Mauritius, Morocco, Namibia, Nigeria, Sao Tome & Principe, Senegal, Seychelles, South Africa, Sudan, Swaziland, Tunisia.	22
	Low Income	Benin, Burkina Faso, Burundi, Central African Republic, Chad, Comoros, Congo Democratic Republic, Congo Republic, Djibouti, Eritrea, Ethiopia, The Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Rwanda, Sierra Leone, Somalia, Tanzania, Togo, Uganda, Zambia, Zimbabwe.	31
Legal Origins	English Common-law	Botswana, The Gambia, Ghana, Kenya, Lesotho, Liberia, Malawi, Mauritius, Namibia, Nigeria, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe.	20
	French Civil-	Algeria, Angola, Benin, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo Democratic Republic, Congo Republic,	

	law	Côte d'Ivoire, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Guinea, Guinea-Bissau, Libya, Madagascar, Mali, Mauritania, Morocco, Mozambique, Niger, Rwanda, Sao Tomé & Principe, Senegal, Togo, Tunisia.	33
Religious Domination	Christianity	Angola, Benin, Botswana, Burundi, Cameroon, Cape Verde, Central African Republic, Congo Democratic Republic, Congo Republic, Côte d'Ivoire, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Ghana, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Rwanda, Sao Tomé & Principe, Seychelles, South Africa, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe.	33
	Islam	Algeria, Burkina Faso, Chad, Comoros, Djibouti, Egypt, The Gambia, Guinea, Guinea-Bissau, Libya, Mali, Mauritania, Morocco, Niger, Nigeria, Senegal, Sierra Leone, Somalia, Sudan, Tunisia.	20
Regions	Sub-Saharan Africa	Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Chad, Central African Republic, Comoros, Congo Democratic Republic, Congo Republic, Côte d'Ivoire, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, The Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritius, Mozambique, Namibia, Niger, Nigeria, Senegal, Sierra Leone, Somalia, Sudan, Rwanda, Sao Tomé & Principe, Seychelles, South Africa, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe.	47
	North Africa	Algeria, Egypt, Libya, Mauritania, Morocco, Tunisia.	6
Resources	Petroleum Exporting	Algeria, Angola, Cameroon, Chad, Congo Republic, Equatorial Guinea, Gabon, Libya, Nigeria, Sudan.	10
	Non-Petroleum Exporting	Benin, Botswana, Burkina Faso, Burundi, Cape Verde, Central African Republic, Comoros, Congo Democratic Republic, Côte d'Ivoire, Djibouti, Eritrea, Ethiopia, Egypt, The Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Senegal, Sierra Leone, Somalia, Rwanda, Sao Tomé & Principe, Seychelles, South Africa, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia, Zimbabwe.	43
Stability	Conflict	Angola, Burundi, Chad, Central African Republic, Congo Democratic Republic, Côte d'Ivoire, Liberia, Nigeria, Sierra Leone, Somalia, Sudan, Zimbabwe.	12
	Non-Conflict	Algeria, Benin, Botswana, Burkina Faso, Cameroon, Cape Verde, Comoros, Congo Republic, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, The Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Senegal, Rwanda, Sao Tomé & Principe, Seychelles, South Africa, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia.	41
Openness to Sea	Landlocked	Botswana, Burkina Faso, Burundi, Chad, Central African Republic, Ethiopia, Lesotho, Malawi, Mali, Niger, Rwanda, Swaziland, Uganda, Zambia, Zimbabwe	15
	Not landlocked	Algeria, Angola, Benin, Cameroon, Cape Verde, Comoros, Congo Democratic Republic, Congo Republic, Côte d'Ivoire, Djibouti, Egypt, Equatorial Guinea, Eritrea, Gabon, The Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Libya, Madagascar, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Nigeria, Senegal, Sierra Leone, Somalia, Sudan, Sao Tomé & Principe, Seychelles, South Africa, Tanzania, Togo, Tunisia.	38

Num: Number of cross sections (countries)

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