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Foreign aid, investment and fiscal policy behavior: theory and empirical evidence

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Foreign aid, investment and fiscal policy behavior: theory and empirical evidence

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Abstract

The paper provides theoretical and empirical justifications for the instrumentality of foreign aid in stimulating private investment and fixed capital formation through fiscal policy mechanisms. We propose an endogenous growth theory based on an extension of Barro (1990) by postulating that the positive effect of aid mitigates the burden of the taxation system on the private sector of recipient countries. The empirical validity is based on 53 African countries for the period 1996-2010. While the findings on the tax effort channel are overwhelmingly consistent with theory across specifications and fundamental characteristics, those of the government expenditure channel are a little heterogeneous but broadly in line with the theoretical postulations. Justification for the slight heterogeneity and policy implications are discussed.

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

International aid remains one of the most hotly debated topics in development economics. Accordingly, a recent strand of the literature has substantially raised concerns about foreign aid channels (Collier, 2007; Moyo, 2009; Banuri, 2013; Asongu & Jellal, 2013; Krause, 2013; Ghosh, 2013; Wamboye et al., 2013; Marglin, 2013; Monni & Spaventa, 2013; Titumir & Kamal, 2013; Kangoye, 2013; Asongu, 2014abc; Eubank, 2012). The accounts have included: neo-colonialism motivations (Amin, 2014; Ndlovu-Gatsheni, 2013); need for more holistic processes (Amin, 2014; Obeng-Odoom, 2013) and; imperative for more self-reliance in Africa (Kindiki, 2011; Fofack, 2014).

The Official Development Assistance (ODA) programs that were instituted over five decades ago have led to widely debated and unsolved issues about aid effectiveness. In 2005, Western countries tried most to save Africa as in July of that year, the Group of Eight (G8) agreed to double development assistance to Africa from $25 billion a year to $50 billion in order to finance the 'Big push', as well as cancel African aid-loans contracted during previous attempts at a 'Bush push'. According to most estimates, prior to this effort, Africa was already the most aid-intensive region in the world (Asongu & Jellal, 2013, 2014). World leaders gathered at the United Nations in September of that same year to further discuss the progress of substantially mitigating poverty in the continent. As far as we have reviewed, Easterly (2005) best highlights some frustrating statistics. Accordingly, sub-Saharan Africa (SSA) contains more than 11% of the world's population but accounts only for 1% of the world's GDP. In the median African country, 43% of the population survives on less than $1 per day. On the list of the World Food Program, of the twenty-three countries with more than thirty-five per cent of the population malnourished, seventeen (seventy-three per cent) are in Africa. Poverty has been sustained by the long and brutal civil wars in many countries (Angola, Chad, Sierra Leone, Somalia, Liberia…etc), Rwanda's genocide and recent carnages in Darfur-Sudan with the Democratic Republic of Congo registering the world's highest casualties since World War 2. To put it concretely, seven of the eight recent cases of total societal breakdown into anarchy have been in Africa: Angola, Burundi, Liberia, Sudan, Sierra Leone, Somalia and the Democratic Republic of Congo (beside Afghanistan). Thus foreign aid has been considered as a means of giving these war-torn countries a 'Big economic push'.

The issue of whether development assistance improves growth in recipient countries can be traced back to the two-gap model (Chenery & Strout, 1966), which remains the most influential theoretical underpinning of aid effectiveness in the literature. According to the narrative, developing countries face serious constraints on savings and export earning that deter investment growth. In spite of severe criticisms since its inception, this model has provided the underlying principles for early aid policies (Easterly, 1999) and empirical specifications in many studies (Masud & Yontcheva, 1999). Accordingly, both the Harrod-Domar and Solow growth models which constitute the principal theoretical underpinnings of the foreign aid literature are based on the need for large aid-finance boosts in investment in order to bridge the poverty gap.

The effect of development assistance on private sector investment has long been an important issue of debate. Accordingly, many economists have taken the position that aid stimulates private investment in least developed countries (LDCs) by filling macroeconomic savings or foreign exchange gaps, while others have countered that aid has a negative effect on private investment because it is often wasted or counterproductive, generates Dutch-disease effects and enables the central government to compete resources away from the private sector (Snyder, 1996)[2]. However, recent empirical evidence suggests that, donors are concerned about how their aid is used, especially how it affects the fiscal behavior of recipient governments (Morrissey, 2012). The paper has reviewed the effects of aid and concluded that aid significantly affects government spending and tax effort in LDCs.

The present study position's itself as an extension of Morrissey (2012). Hence, our main contribution of the literature is twofold. On the one hand, we propose an endogenous theory of aid and on the other hand provide empirical validity for the proposed theory. The model we propose postulates that the positive effect of aid reduces that burden of the taxation system on the private sector which ultimately leads to economic growth in poor countries, especially when the amount of aid is high and the public sector is less effective. Hence, the goal of the study is to examine how aid affects private investment through fiscal policy channels. We postulate that the effects of aid on tax effort and government spending as sustained by Morrissey (2012) could provide incentives for private investments and fixed capital formation needed for economic prosperity. By investigating this fiscal behavior mechanisms, the paper also throws more light on

[2] For instance Snyder (1996) has concluded from a panel of 36 developing countries that nations which receive larger aid allocations experience lower subsequent levels of private investment.

a recent debate by Okada & Samreth (2012) and Asongu (2012a, 2013a) on 'the effect of foreign aid' that has had an important influence in academic and policy making circles. Hence, contrary to the above protagonists, we introduce an indirect dimension to the debate[3].

In addition to the above contributions, the paper leaves room for policy implications in a number of areas. Firstly, the global economic downturn has ignited issues about donor's continued willingness to give and commitment to development assistance (Ahmed et al., 2011). Therefore, investigating the incidence of aid on investment could provide additional insights into the ongoing debate[4]. Secondly, a corollary of the first contribution is the shifting of policy space to development assistance alternatives from East Asia. Accordingly, the ability to learn from the East Asian success stories has been substantially hampered by an asymmetric bargaining power between African and Western development partners[5]. Thirdly, there have been considerable shifts in the objectives announced by the donor community which have evolved from intensive industrialization programs advocated in the 1950s to more recent poverty-reduction objectives such the Millennium Development Goals (MDGs). Therefore, with the year 2015 approaching, the study also leaves room for policy options to donor and multilateral agencies on the aid objectives towards increasing investment. Fourthly, by using much recent data (1996-2010) in 53 countries, we provided an updated account of the nexuses. Moreover, the richness of our dataset enables more focused policy implications. Accordingly, to add subtlety to the analysis, we disaggregate the countries into fundamental characteristics of investment (legal origins, petroleum exporting quality, political instability/conflicts, regional proximity, income-levels, religious domination and openness to sea).

[3] The Okada & Samreth (2012) and Asongu (2012a, 2013a) debate has focused on the direct effect of foreign aid. While the former has concluded that foreign aid is positive for institutional quality in developing countries, the latter has established that the findings of the former may not be relevant for African countries. The position of Asongu (2013a) has been validated by Asongu (2015a) and Asongu (2015b) using dynamic cultural settings and institutional benchmarks for the effectiveness of foreign aid respectively. .

[4] The debate has recently been reframed by Koechlin (2007) who has examined three ambitious book (Sachs's *The End of Poverty*, Bhagwati's *In Defense of Globalization*, and Easterly's *The Elusive Quest for Growth*) and concluded 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. For instance, novel visions of theorizing development in light of the globalized system of food production has included the USA led 'genetically modified food aid' to the Southern African region that is widely criticized by the European Union (Herrick, 2008).

[5] As a case in point, the Chinese 'cooperative and non-interference' oriented development assistance and foreign direct investment (FDI) policies in Africa are perceived as better alternatives. Hence, the results of this study could either solidify the narrative or negate it.

The rest of the paper is organized in the following manner. Section 2 presents conflicts in the literature before proposing the endogenous theory. Data is discussed and the methodology outlined in Section 3. The empirical analysis is covered by Section 4. Section 5 concludes.

2. Foreign aid and development

2. 1 Conflicts in the literature

While development assistance is necessary in the short-run owing to certain precarious circumstances (humanitarian concerns for example), there has been a heated debate on the effectiveness of aid on the one hand and the linkage among aid, conditionality[6] and economic policies in recipient countries. In international policy coordination, one of the most debated and controversial issue is foreign aid. A strand of protagonists has presented a case with a mixture of alleged altruism, economic interests, geo-strategic considerations and historical ties (Alam, 2004). The post-decolonization period has been characterized by substantial increase in grants and soft loans from Western donor agencies and governments (Oya, 2006). In essence, the Cold war and the battle for geopolitical control in African between superpowers are considered by many scholars as the most important determinant of soaring aid in the 1980s (Degnbol-Martinussen & Engberg-Pedersen, 2003). The debate has also been extended to the International Monetary Fund (IMF) led policies[7].

We now devote space to highlighting the debate in strands. A substantial bulk of the literature has been devoted to the macroeconomic consequences of development assistance. However, mixed results have been reported and studies that have concluded on a significant and positive effect have faced heavy methodological criticisms. Inconclusive results with recently refined methodologies, heavy reliance on empirical evidence and the absence of analytical framework (Masud & Yontcheva, 2005), have left much room for debate on the aid-development nexus. Table 1 below summarizes the debate in two main strands. Whereas the first strand

[6] The conditionality oriented debate has recently intensified when some Western governments (British and US for instance) have threatened to cut-off aid to some African countries because of the prosecution of gays, lesbians and transsexuals by governments of recipient countries. In response, activists, analysts and African government officials have viewed the threat as an insult to African values in particular and moral wellbeing in general.

[7] Accordingly, structural adjustment policies by the IMF have also been criticized. There is a wealth of literature documenting that the IMF's neoliberal policies have been: not sound for South Korean development after the 1997 crisis (Crotty & Lee, 2002, 2006, 2009); the principal cause of the Argentinean crisis in the late 1990s and early 2000s (Levy & Duménil, 2006) and responsible for the failed privatization projects across Africa (Bartels et al., 2009).

acknowledges the positive sides of development assistance, the second sustains the negative consequences of aid.

Among studies in the first strand, we shall highlight that of Burnside & Dollar (2000) which has concluded that aid could be effective when policies are appealing (conducive). The Burnside & Dollar study has received abundant comments from scholars and policy makers (Guillaumont & Chauvet, 2001; Colier & Dehn, 2001; Easterly et al., 2003) with some claiming that findings are extremely data dependent (Clemens et al., 2004). Whereas Clemens et al. (2004) have established that aid is beneficial in the short-term; Minou & Reddy (2010) have recently found that the beneficial effect could also be in the long-term. Gomanee et al. (2003) have emphasized that development assistance has both a direct effect on welfare and an indirect impact through public spending on social services. The indirect stance has been further consolidated by Mosley et al. (2004) on wellbeing and poverty in recipient countries. Development assistance has also been found to promote institutions in terms of its role on corruption (Okada & Samreth, 2012) and transition to democracy (Resnick, 2012).

The second strand entails authors that have presented a case for the insignificant effect of aid on investment, savings and institutions. It has been concluded that aid promotes unproductive public consumption (Mosley et al., 1992) without a positive incidence on investment. The latter stance has been sustained by Reichel (1995) and Boone (1996). Whereas Ghura (1995) has emphasized the negative impact of development assistance on domestic savings, Pedersen (1996) has established that, foreign aid distorts development and leads to aid dependency. In direct response to the Okada & Samreth (2012) position on a negative aid-corruption nexus, recent African aid-oriented literature has supported this second strand from an institutional standpoint. Accordingly, Asongu (2012a, 2013a) has engaged in a debate on the 'effect of foreign aid on corruption' that could have a significant influence in academic and policy making circles[8].

[8] Whereas Okada & Samreth (2012) have concluded that aid mitigates corruption in developing countries, Asongu (2012a) in direct response has established that the Okada & Samreth (2012) findings may not be relevant for Africa because aid fuels (mitigates) corruption (the control of corruption) in the continent. In response to some informal discussions that the Okada & Samreth and Asongu (2012) findings are not directly comparable, Asongu (2013a) has sustained his position in the African context without partially negating the empirical underpinnings of Okada & Samreth on the one hand and extending the horizon of inquiry from corruption to eight government quality dynamics.

Table 1: Summary of conflicts in the literature

Researchers	Main findings
	First-strand: Aid improves growth (development)
Ghura (1995)	Aid positively impacts savings for good adjusters.
Burnside & Dollar (2000)	Aid can be good when economic management and policies are appealing.
Guillaumont & Chauvet (2001)	Aid effectiveness is conditional on environmental factors (hazards and shocks).
Collier & Dehn (2001)	Aid effectiveness is contingent on negative supply shocks. Targeting aid conditional on negative supply shocks is better than a targeting based on good policies.
Collier & Dollar (2001)	The positive impact of aid on poverty depends on its effect on per-capita income growth and the effect of per-capita income growth on poverty mitigation.
Feeny (2003)	The sectoral allocation of foreign aid to Papua New Guinea has been broadly in line with a strategy to effectively mitigate poverty and increase human wellbeing.
Gomanee et al. (2003)	Aid has both a direct impact on welfare and indirect effect via public spending on social services.
Clement et al. (2004)	Aid has a short-run appealing impact on growth.
Ishfaq (2004)	Though in a limited way, aid has helped in reducing the extent of poverty in Pakistan.
Mosley et al. (2004)	Aid has an indirect impact on wellbeing and poverty in recipient countries.
Addison et al. (2005)	Aid augments pro-poor public expenditure and has a positive impact on economic prosperity. Aid broadly works to reduce poverty, and poverty would be higher in the absence of aid.
Fielding et al. (2006)	There is a straight forward positive impact of aid on development objectives.
Minou & Reddy (2010)	Aid positively impacts economic prosperity in the long-run.
Okada & Samreth (2012)	Aid mitigates corruption.
Resnick (2012)	Aid has promoted democratic transitions in the 1990s in African countries.
	Second-strand: Aid does not lead to growth (development)
Mosley et al. (1992)	Aid promotes unproductive public consumption and fails to promote growth.
Reichel (1995)	Aid does not encourage savings because of the substitution effect.
Ghura (1995)	Aid has a negative incidence on savings.
Boone (1996)	Aid is insignificant in promoting economic development on two main counts: 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 eventually leads to aid dependency.
Asongu (2012a)	Aid fuels (mitigates) corruption (the control of corruption).
Asongu (2015c)	Aid has a negative nexus with government quality dynamics.
Asongu (2013a)	Aid is unappealing to institutional quality irrespective of initial levels of institutional development.

Source (Authors)

Whereas the effect of development assistance is more straight forward to some scholars (Ishfaq, 2004; Addison et al., 2005; Fielding et al., 2006)[9], its incidence on development outcomes may also be indirect. We have highlighted in the second strand above that aid promotes unsound public consumption (Mosley et al., 1992) without a positive effect on investment. We have also highlighted in the introduction that aid affects development objectives through fiscal behavior channels (Morrissey, 2012). Therefore aid effects on tax effort and government spending could provide incentives for investment needed for economic prosperity.

2.2 Theoretical proposition: fiscal behavior as a transmission mechanism

2.2.1 Theoretical and empirical underpinnings

The theoretical underpinnings of the fiscal behavior channel in the aid-development nexus are broadly consistent with the 'Bush-Push' model which sustains that Africa is poor because it is stuck in a poverty trap (Easterly, 2005). In order to emerge from the hollow, it needs a large aid-financed increase in investment: a 'Big Push'. Both the Harrod-Domar and Solow growth models have been based on this intuition. Accordingly, the underlying assumption for the intuition is that, the 'Big-Push' is destined to bridge the saving-investment gap poor countries face (Rostow, 1960; Chenery & Strout, 1966; Easterly, 2005).

Empirically, a great chunk of studies have focused on the incidence of aid flows on GDP growth and other macroeconomic variables (investment or public consumption). Gomanee et al. (2003) have established that aid has both a direct impact on welfare and an indirect effect via government spending on social services. The indirect position has been sustained by Mosley et al. (2004) on wellbeing and poverty in recipient countries. While we have already highlighted the importance of aid increasing unproductive public consumption (Mosley et al., 1992) without necessarily increasing investment, the intuition for the thesis has been confirmed by Addison et al. (2005) who have found that aid strengthens pro-poor public expenditure. On the premise of very recent aid-development literature, donors are concerned about the manner in which their

[9] Addison et al. (2005) have established that development assistance encourages pro-poor public spending and has a positive incidence on economic prosperity (growth) since it broadly works towards poverty reduction. Their position that poverty would be higher in the absence of aid had earlier been raised by Ishfaq (2004). Among proponents of a positive aid-development nexus in the first strand of Table 1, Fielding et al. (2004) have been the most optimistic in their conclusion that aid has a straight forward positive incidence on development objectives.

assistance affects the fiscal behavior (tax effort and government spending) of recipient countries (Morrissey, 2012).

In light of the above, two dimensions clearly standout: the investment destination of aid and the fiscal behavior mechanism as a channel to the investment. Hence, the goal of the present study is to propose an endogenous theory of aid and test the empirical validity of the proposed theory. In essence, we examine how aid affects private investment (and gross fixed capital formation) through tax efforts and government spending. The model is primarily based on the assumption that, private investment and/or gross fixed capital formation are relevant for economic prosperity.

2.2.2 Theoretical proposition: extension of Barro (1990)

There is a wealth of literature substantiating that the taxation system adopted by a developing country creates large distortions that substantially affect the dynamics of the private sector and hence economic growth and development (Manly et al., 2006; Feredeand & Dahlby, 2012). As already highlighted above, some of this vast literature has focused on the channels via which foreign aid affects economic prosperity in recipient countries (see Table 1). In the same vein, recent endogenous growth literature has elucidated the positive role of public spending: education, health and infrastructure on economic growth (Alexiou, 2009). The literature substantially draws from the Barro (1990) model.

In essence, Barro determines the optimal size of the State: public expenditure that maximizes the rate of economic growth. The simple growth model does not take into account the issue of budget deficit allocated to public spending. Hence, it is intuitively relevant to propose a model that incorporates development assistance destined to financing productive public expenditure. Therefore, the idea here is to extend Barro's simple growth model while taking into consideration the effect of foreign aid on private investment through the fiscal behavior of the State. As we must have highlighted above, in line with Barro's theoretical underpinnings, we suppose that, productive investments may either be private investments or gross fixed capital formations that have positive incidences on economic growth.

a) Simple model

We consider a model similar to Barro (1990). The economy is characterized by the decision of a household representative agent who is a consumer and a producer with the following production function:

$$y = \Phi(k, g) = Ak^{1-\alpha} g^{\alpha} \qquad (1)$$

where k is physical capital, g the amount of composite productive public expenditure entailing: education, infrastructure and health. This public expenditure is financed by income tax to which is added an allocation to foreign aid. That is:

$$g(t) = \tau y(t) + A(t) \qquad (2)$$

where $A(t)$ is the amount of international aid which is indexed on national income and we suppose that it is determined in an exogenous manner.

For the purpose of simplicity, we further suppose that the budget of the State is at equilibrium at every moment. Accordingly, the problem of our representative agent is to solve the dynamic program of decentralized economic growth given by:

$$\underset{c}{Max} \int_0^{\infty} \frac{c(t)^{1-\sigma} - 1}{1-\sigma} e^{-\rho t} . dt \qquad (3)$$

$$\dot{k}(t) = (1 - \tau)\, y(t) - c(t)$$
$$g(t) = \tau y(t) + A(t)$$
$$A(t) = a y(t)$$
$$k(0) > 0.$$

where a is the indexation rate of foreign aid allocated to the production of social infrastructure $g(t)$. This rate is exogenous, fixed and considered as given by national economic agents. In this institutional environment, the result of Barro's model of economic growth can be characterized without the indexation of foreign aid output, as follows:

Proposition 1: (Barro, 1990)

(i) The rate of decentralized economic growth without foreign aid is given as:

$$\gamma = \frac{1}{\sigma}\left[A^{\frac{1}{1-\alpha}} (1-\tau)\tau^{\frac{\alpha}{1-\alpha}} - \rho \right] \qquad (4)$$

(ii) The rate of direct income tax that maximizes the economic growth rate is given by:

$$\alpha = \tau^{*} = ArgMax\gamma(\tau) \qquad (5)$$

b) Public finance, aid and endogenous growth

We have already seen that a substantial bulk of the literature has focused on the incidence of aid on growth and development. The theoretical and empirical relevance of aid to public spending has also been highlighted. Now we suppose that the objective of donor(s) vis-à-vis poor countries is the development of the private sector (liberal aspect of the contract). Hence, its (their) aid is supposed to be entirely and observably allocated directly to the financing of productive public spending flows, which can be lacking in poor countries and whose role is to ameliorate socio-economic infrastructure which improve the effectiveness (promotion) of the private sector. Within this framework, it can be established that the equation for budget equilibrium is given this time by:

$$\begin{aligned} &\tau y(t) + ay(t) = g(t) \Leftrightarrow \\ &g(t) = (\tau + a)y(t) \end{aligned} \qquad (6)$$

In the presence of foreign aid destined for private sector promotion, while acknowledging that aid as an exogenous factor, public decision makers should therefore implement an endogenous economic growth program by the optimal choice of the income-related direct tax structure. Hence, public policy decision making would have to solve the following dynamic problem:

$$\underset{c}{Max} \int_0^{\infty} \frac{c(t)^{1-\sigma} - 1}{1-\sigma} e^{-\rho t}.dt \qquad (7)$$

$$\begin{aligned} &\dot{k}(t) = (1-\tau)\, y(t) - c(t) \\ &g(t) = \tau y(t) + A(t) \\ &A(t) = ay(t) \\ &k(0) > 0. \end{aligned}$$

Proposition 2: in the presence of foreign aid, the economic growth rate is given by the following rate:

$$\gamma_a = \frac{1}{\sigma}\left[A^{\frac{1}{1-\alpha}} (1-\tau)(a+\tau)^{\frac{\alpha}{1-\alpha}} - \rho \right] \quad (8)$$

The tax rate that maximizes national economic growth is therefore given by:

$$\alpha - a(1-\alpha) = \tau^* > 0 \Leftrightarrow \alpha > \frac{a}{1+a} \quad (9)$$

It is immediately observable that, the positive effect of aid reduces that burden of the taxation system on the private sector of poor countries, especially when the amount of aid is high and the public sector less effective. Hence, it is observed that aid granted to developing countries directly benefits in terms of private sector dynamism which ultimately leads to economic growth while reducing the size of the national public sector (Remmer, 2004; Payne & Kumazawa, 2005).

3. Data and Methodology

3.1 Data

We examine a panel of 53 African countries with data from African Development Indicators (ADI) of the World Bank (WB) for the period 1996-2010. Limitation to the time span is motivated by the interest of providing results with updated and more focused policy implications. Moreover, the focus on Africa and the time span enable the follow-up of a recent foreign aid debate that has had some influence in academic and policy making circles[10]. The dependent variables are private investment and gross fixed capital formation. While the former is used in baseline regressions, the latter is employed for robustness checks.

[10] The time span is consistent with those employed by Okada & Samreth (2012), Asongu (2012a) and Asongu (2013a) in the debate highlighted above. The first authors 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 whereas the third has used data for the period 1996-2010 from 53 African countries.

3.1.1 Determination of fundamental characteristics

It is important to discuss the determination of fundamental characteristics which are crucial for the relevance of the empirics. Macroeconomic characteristics have the limitation of being time-dynamic. Thus, the same non-dummy threshold may not be consistent over time. This justification is even more relevant when short-run (business cycle) disturbances loom quite large. Hence, we are consistent with recent comparative literature in categorizing countries in terms of conflict-affected (or political instability), petroleum-exporting, legal origins, income-levels, regional proximity, religious domination and landlocked-nature (Weeks, 2012; Asongu, 2014de). From intuition, foreign aid, private investment and fiscal policy substantially depend on the above categories.

On a first note, the 'conflict affected' characteristic present analytical and practical issues as difficulties arise in assigning countries to this strand in a non-arbitrary and exclusive manner. Since, few countries in the continent are completely conflict-free, the distinction is made on the basis of degree of significance of conflict-span relative to the period of study. Based on the information (53 countries over the period 1996-2010), two strands emerge: civil wars and political strife. With respect to 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 (series 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. For the second strand, in spite of the absence of some formal characteristics of civil war, we also include Nigeria and Zimbabwe due to the severity of their internal strife.

Secondly, on how to determine petroleum countries, a critical categorical objection arises because some petroleum countries also clearly qualify as conflict-affect (Angola and Sudan for instance). We impose no constraints on categorical priority; meaning a country may fall in many categories if it has the relevant categorical characteristics. Another concern that crops-up is arbitrariness if a country qualifies for only part of the time period, either because of recent discovery or substantially declined production. Seemingly, another objection could be that, some producers (Botswana for instance) have displayed macroeconomic features that are similar to petroleum exporting countries. We take a minimalistic approach to the issue by strictly adhering to the petroleum category and including only countries whose exports have been oil-dominated

for over a decade during the span 1996-2010. These include: Algeria, Angola, Cameroon, Chad, Congo Republic, Equatorial Guinea, Gabon, Libya, Nigeria and Sudan.

Thirdly, the basis of legal origin is founded on the premise that, legal origins place different emphasis on private property rights vis-à-vis State power (La Porta et al., 1998, 1999). According to this narrative, English common law countries place more emphasis on private property rights, whereas French civil law focuses more on State power. The intuition for this category has recently been confirmed in African institutional quality (Asongu, 2012bc) and property rights (Asongu, 2014d) literature. The underlying logic for this segmentation is that the institutional web of formal rules, informal norms and enforcement characteristics affect the climate of investment. The legal origin classification is according to La Porta et al. (2008, p. 289).

Fourthly, the basis for including income-levels to examine wealth-effects is founded on two premises. On the one hand, economic prosperity could be associated with higher levels of private investment. On the other hand, recent African institutional literature has shown that wealth-effects matter in institutional quality (Asongu, 2012b, 2013bc) that ultimately determines investment. The choice of income-levels is in accordance with the Financial Development and Structure Database (FDSD) of the WB.

Fifthly, there is an investment cost of being landlocked (Arvis et al., 2007). Moreover, in order to add subtlety to the analysis for more policy implications, we include religious dominations (Christianity and Islam) in accordance with the Central Intelligence Agency's (2011) World Fact book, and regional proximity in terms of SSA and North African countries.

3.1.2 Endogenous explaining, instrumental and control variables

The fiscal policy measures in terms of government expenditure and tax revenues are consistent with the theoretical and empirical underpinnings discussed above (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 Multilateral Donors (MD), NODA from the Development Assistance Committee (DAC) countries and Grants excluding technical cooperation. We employ only two control variables due to constraints in degrees of freedom

required for the Sargan over-identifying restrictions (OIR) test for instrument validity[11]. The control variables are corruption and voice & accountability and are included to reduce the degree of identification when development assistance instruments are not valid. The choice of the control variables is consistent with recent African institutional literature (Asongu, 2012a, 2013a).

Appendix 1, Appendix 2, Appendix 3 and Appendix 4 respectively provide 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. The summary statistics of the variables show that there is quite a degree of variation in the data utilized so that we should be confident that reasonable estimated relationships should emerge. The purpose of the correlation matrix is the mitigate issues of muliticollinearity (and overparameterization) and from the correlation coefficients, there do not appear to any serious concern in terms of the nexuses to be estimated.

3.2 Methodology

The study uses a Two-Stage Least Squares (2SLS) Instrumental Variable (IV) estimation strategy on two main counts: the empirical strategy is consistent with the problem statement and also addresses the issue of endogeneity. The following steps are adopted in the estimation procedure.

First-stage regression:

$$FB_{it} = \gamma_0 + \gamma_1 (Instruments)_{it} + \upsilon_{it} \quad (1)$$

Second-stage regression:

$$Investment_{it} = \beta_0 + \beta_1 (FB)_{it} + \beta_i X_{it} + \mu_{it} \quad (2)$$

In Eq. (2), X is a set of control variables which include: *Corruption and voice & accountability*[12]. *FB* entails *Fiscal behavior* which encompasses *Government's final*

[11] The Sargan OIR test is only applicable in the presence of over-identification. In other words, 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-identification (instruments less than endogenous explaining variables) the OIR test is by definition impossible. Accordingly, we have four foreign aid instruments and cannot model with more than three endogenous explaining variables.

[12] There is a broad consensus on the imperative for good institutions for African development and foreign aid effectiveness (Fosu, 2013ab; Wantchekon, 2003;Gibson et al., 2014; Vicente & Wantchekon, 2009; Anyanwu & Erhijakpor, 2014; Boyce & Ndikumana, 1998, 2001, 2003, 2011).

consumption expenditure and *Tax revenues*. *Investment* denotes *Private investment* and *Fixed capital formation*. Instrumental variables include: *Total NODA, NODA from DAC countries, NODA from MD* and *Grants.* For Eq. (1) and Eq (2), v and u, respectively represent the error terms.

In the estimation process, three main steps are adopted. First, we justify the choice of the IV procedure with a Hausman test for endogeneity. Then, we verify that the instruments are exogenous to the endogenous components of the independent variables (government expenditure and tax revenues). Last, we ensure that the instruments are valid and uncorrelated with error term in the equation of interest with an OIR test. Further robustness checks are ensured with: (1) restricted and unrestricted modeling; (2) modeling with robust Heteroscedasticity and Autocorrelation Consistent (HAC) standard errors and; (3) usage of two investment indicators.

4. Empirical Analysis

4.1 Presentation of results

In this section, we aim to assess two main issues: (1) the ability of the exogenous components of fiscal behavior to explain private investment and; (2) the ability of the instruments to explain private investment through the proposed fiscal policy channels. Whereas the first concern is addressed by the significances and signs of estimated coefficients, the second issue is tackled with the Sargan OIR test. The null hypothesis of this test is the stance that, the aid instruments explain private investment only through the fiscal policy channels. Therefore, a rejection of the null hypothesis is a rejection of the perspective that the foreign aid instruments do not explain private investment beyond the proposed mechanisms. We also employ a Hausman test to account for endogeneity and justify the choice of the 2SLS-IV estimation strategy. The null hypothesis of this test is the position that estimated coefficients by OLS are consistent and efficient. Thus, failure to reject this null hypothesis does not lend credit to the choice of the estimation strategy since it undermines the concern of endogeneity. Owing to the problem statement and theoretical underpinning, the Hausman test is a necessary but not a sufficient condition for the employment of the 2SLS-IV strategy. Therefore, even in the absence of endogeneity (failure to reject the null of the Hausman test), we still employ the IV procedure.

In Table 2 below, we report a summary of the findings in Tables3-4. While Table 3 is the baseline assessment with private investment, Table 4 is a robustness check with fixed capital formation. Modeling is restricted (Panel A) and unrestricted (Panel B) in both tables. While Tables 3-4 examine both the first and second concerns highlighted above, Table 2 is premised on only the second concern. Accordingly, owing to the problem statement, the second issue is more relevant than the first because it is premised on evidence from the first concern. In other words, while addressing the first issue does not guarantee the second can be tackled, examining the second is feasible when the first has been confirmed. Therefore, the summary in Table 2 is based on the following information criteria: (1) the estimated coefficient should be significant; (2) the adjusted coefficient of determination (R^2) should not be negative; (3) the Fisher statistics should be significant; (4) the null hypothesis of the Sargan OIR test for the validity of the foreign aid instruments should not be rejected and; (5) the Hausman test has an informational role and is not indispensible for the validity of the 2SLS-IV model specification.

From Table 2, the following broad conclusions could be established. (1) Foreign aid overwhelmingly increases private investment and gross capital formation through tax effort, which is consistent with theoretical underpinnings of and propositions in the study. (2) While the incidence of foreign aid on the dependent variables through government expenditure is a bit mixed, the weight of available evidence on the second issue broadly supports its positive impacts on private investment and gross fixed capital formation. (3) It could be further inferred that, while the tax effort effect is consistent across fundamental characteristics of investment, the government spending impact may change as one move from on fundamental characteristic to another. Hence, whereas the homogeneity on the tax effort mechanism strongly confirms our theoretical postulations, the heterogeneity of the government spending channel indicates that generalization of the findings with respect of the government expenditure mechanism should be treated with caution. (4) Our findings are more relevant in restricted than in unrestricted modeling. This is an indication that, autonomous investment is not a very valid channel through which foreign aid is instrumental in private investment. (5) Given the overwhelming presence of not applicable (na)[13] and degree (°)[14] signs, it is difficult to establish significant asymmetries in

[13] insignificant estimate or variable not included in model.
[14] °: negative coefficient of determination, significant Sargan OIR test (invalid instruments) or insignificant Fisher statistics.

various dimensions of common fundamental characteristics. Therefore, evidence of wealth-effect, legal-origin-effect…. landlocked-effect cannot be feasibly drawn. (6) But for a thin exception (conflict affected countries), most of the significant control variables have the rights signs: voice & accountability and corruption-control are logical incentives for private investors because they improve the climate of doing business.

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 (Restricted Private Investment Modeling)																	
Gov. Exp.	-	na	na	na	+	na	+	-°	+	-°	+°	+	-°	+	+	na	na
Tax Rev.	+	+°	+	+	+	+°	+	+°	+	+°	na	+	na	+	+	+	+
Panel B: Specifications in Panel B of Table 3 (Unrestricted Private Investment Modeling)																	
Gov. Exp.	na	na	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
Panel C: Specifications in Panel A of Table 4 (Restricted Fixed Capital Formation Modeling)																	
Gov. Exp.	-	na	na	na	+	-°	na	-	+	-°	+	+	-	+	+	na	na
Tax Rev.	+	+°	+	+	+	+°	+	+	+	+°	+	+	na	+	+	+°	+
Panel D: Specifications in Panel B of Table 4 (Unrestricted Fixed Capital Formation Modeling)																	
Gov. Exp.	na	na	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

Gov. Exp: Government Expenditure. Tax Rev: Tax Revenue. 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: Baseline Assessment with Private Investment (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: Restricted Modeling																	
Constant	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Gov. Exp.	**-0.60****	1.064	1.951	0.301	**0.475****	0.004	**1.062***	**-0.43****	**1.003***	**-1.32****	**0.385***	**0.894***	**-0.128****	**0.977***	**0.673*****	0.506	-0.310
	(0.016)	(0.325)	(0.270)	(0.446)	**(0.046)**	(0.983)	**(0.097)**	**(0.011)**	**(0.050)**	**(0.049)**	**(0.053)**	**(0.070)**	**(0.031)**	**(0.070)**	**(0.000)**	(0.354)	(0.862)
Tax Rev.	**0.66*****	**0.568****	**0.512***	**0.822*****	**0.52*****	**1.16*****	**0.567*****	**0.84*****	**0.55*****	**2.10*****	0.154	**0.58*****	0.066	**0.643*****	**0.504*****	**0.919*****	**0.475****
	(0.000)	**(0.017)**	**(0.071)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	(0.212)	**(0.000)**	(0.751)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.014)**
C. Control	4.383	6.888	---	---	-0.164	9.567	---	---	---	---	---	---	**-5.07*****	---	---	---	-18.134
	(0.752)	(0.492)			(0.972)	(0.103)							**(0.000)**				(0.369)
Voice & A.	---	---	**17.69****	---	---	---	2.710	-1.469	---	**22.60****	---	---	---	2.966	---	**14.728****	---
			(0.029)				(0.828)	(0.733)		**(0.013)**				(0.793)		**(0.041)**	
Hausman	**67.6*****	**18.37*****	**51.87*****	**19.88*****	**45.5*****	**17.9*****	**56.78*****	**35.0*****	**38.0*****	**57.5*****	0.035	**34.7*****	**110*****	**46.60*****	**10.58*****	**32.40*****	**84.39*****
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	(0.982)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.005)**	**(0.000)**	**(0.000)**
Sargan OIR	**0.425**	14.29***	**1.210**	**1.538**	**1.391**	6.74**	**1.035**	**1.354**	**3.768**	**0.294**	7.594*	**4.484**	**0.381**	**3.007**	**2.598**	**3.138**	**2.074**
	(0.808)	(0.000)	**(0.545)**	**(0.673)**	**(0.498)**	(0.034)	**(0.595)**	**(0.508)**	**(0.287)**	**(0.862)**	(0.055)	**(0.213)**	**(0.826)**	**(0.222)**	**(0.457)**	**(0.208)**	**(0.354)**
Adjusted R^2	0.215	0.203	0.110	0.032	0.083	0.251	0.073	-0.061	0.054	-0.074	0.878	0.073	-0.101	0.088	0.123	0.147	0.115
Chi-Square	---	---	---	**147*****	---	---	---		**91.7*****	---	**14391*****	**120*****	---	---	**113*****	---	---
Fisher	**152*****	**45.07*****	**23.73*****	----	**107*****	**40.7*****	**20.13*****	**34.2*****	---	**46.6*****	---	---	**2e^4*****	**26.06*****	---	**22.40*****	**16.75*****
Observations	34	51	87	77	72	72	111	35	155	26	8	176	13	140	57	103	
Panel B: Unrestricted Modeling																	
Constant	63.22	**21.83*****	**16.06****	12.925	**5.582****	**15.7*****	20.405	**11.6*****	12.843	**43.4*****	**7.414*****	13.340	**-25.1*****	13.340	-9.278	**17.29*****	14.294
	(0.595)	**(0.000)**	**(0.039)**	(0.207)	**(0.031)**	**(0.003)**	(0.184)	**(0.000)**	(0.433)	**(0.003)**	**(0.000)**	(0.335)	**(0.000)**	(0.335)	(0.408)	**(0.004)**	(0.372)
Gov. Exp.	-0.108	0.135	0.039	-0.028	0.179	-0.038	0.325	0.061	-0.105	---	**0.180*****	-0.078	0.104	-0.078	-0.020	0.103	-0.501
	(0.917)	(0.840)	(0.975)	(0.890)	(0.305)	(0.874)	(0.570)	(0.783)	(0.912)		**(0.000)**	(0.917)	(0.186)	(0.917)	(0.933)	(0.771)	(0.766)
Tax Rev.	-1.614	0.056	0.219	0.092	**0.34*****	0.371	-0.212	0.140	-0.014	**0.61*****	**0.092*****	0.027	**0.75*****	0.027	**0.66*****	0.131	0.005
	(0.718)	(0.459)	(0.361)	(0.873)	**(0.000)**	(0.200)	(0.714)	(0.565)	(0.982)	**(0.000)**	**(0.000)**	(0.959)	**(0.000)**	(0.959)	**(0.000)**	(0.680)	(0.991)
C. Control	-7.935	**20.55*****	---	---	-1.549	**13.8*****	---	-2.309	-6.986	---	---	-4.247	**-18.1*****	-4.247	-17.347	---	-7.932
	(0.578)	**(0.000)**			(0.496)	**(0.005)**		(0.729)	(0.459)			(0.637)	**(0.000)**	(0.637)	(0.166)		(0.643)
Voice & A.	---	---	**15.51****	2.062	---	---	6.749	---	---	**44.6*****	---	---	---	---	---	**13.49*****	---
			(0.014)	(0.526)			(0.532)			**(0.009)**						**(0.000)**	
Hausman	**33.5*****	**6.758***	**27.76*****	0.988	4.854	2.948	**9.767****	2.007	**7.002***	**15.8*****	**4.719***	4.359	**90.40*****	4.359	**9.713****	**12.18*****	4.254
	(0.000)	**(0.080)**	**(0.000)**	(0.804)	(0.182)	(0.399)	**(0.020)**	(0.570)	**(0.071)**	**(0.000)**	**(0.094)**	(0.225)	**(0.000)**	(0.225)	**(0.021)**	**(0.000)**	(0.235)
Sargan OIR	**0.013**	**1.033**	**1.110**	**1.134**	**1.641**	**1.132**	**1.365**	**1.240**	2.725*	**1.076**	**1.514**	3.027*	**0.004**	3.027*	**0.773**	**0.160**	**1.326**
	(0.907)	**(0.309)**	**(0.292)**	**(0.286)**	**(0.200)**	**(0.287)**	**(0.242)**	**(0.265)**	(0.098)	**(0.583)**	**(0.468)**	(0.081)	**(0.945)**	(0.081)	**(0.379)**	**(0.688)**	**(0.249)**
Adjusted R^2	-0.065	0.494	0.109	-0.024	0.052	0.273	0.029	-0.006	0.181	0.150	0.818	0.150	0.395	0.150	0.009	0.127	0.138
Chi-Square	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fisher	**14.0*****	**42.97*****	**2.409***	0.525	**7.92*****	**4.25*****	0.450	0.768	0.421	**31.9*****	**155*****	0.176	**72.74*****	0.176	**20.12*****	**4.565*****	0.090
Observations	34	51	87	59	72	72	111	35	118	26	8	138	13	138	42	103	144
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. Voice & A: Voice & Accountability. 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 4: Robustness Assessment with Fixed Capital Formation (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: Restricted Modeling																	
Constant	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Gov. Exp.	**-0.59***	1.366	2.328	0.957	**0.541****	**-0.267***	1.301	**-0.4*****	**1.833****	**-1.1*****	**0.330***	**1.589***	**-0.112****	**1.574****	**1.388*****	0.460	0.0349
	(0.099)	(0.229)	(0.293)	(0.265)	**(0.022)**	**(0.086)**	(0.239)	**(0.000)**	**(0.031)**	**(0.009)**	**(0.090)**	**(0.036)**	**(0.016)**	**(0.025)**	**(0.000)**	(0.504)	(0.987)
Tax Rev.	**0.87*****	**0.819*****	**0.775****	**1.10*****	**0.75*****	**1.29*****	**0.69*****	**1.42*****	**0.72*****	**1.75*****	**0.47*****	**0.808*****	0.255	**0.784***	**0.69*****	**1.291*****	**0.662*****
	(0.000)	**(0.005)**	**(0.026)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	(0.166)	**(0.050)**	**(0.000)**	**(0.000)**	**(0.000)**
C. Control	4.956	8.550	---	---	-2.740	-2.196	---	---	---	---	---	---	**-5.03*****	---	---	---	-23.717
	(0.000)	(0.555)			(0.601)	(0.885)							**(0.000)**				(0.351)
Voice & A.	---	---	**18.691****	---	---	---	-8.026	3.475	---	7.467	---	---	---	-1.407	---	**16.26****	---
			(0.045)				(0.719)	(0.641)		(0.103)				(0.941)		**(0.047)**	
Hausman	**58.4*****	**31.97*****	**59.21*****	**48.28*****	**71.9*****	**25.8*****	**84.99*****	**70.5*****	**83.8*****	**127*****	1.153	**89.88*****	**115*****	**79.14*****	**32.77*****	**40.55*****	**186*****
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	(0.561)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Sargan OIR	**0.627**	15.98***	**1.504**	**1.123**	**0.506**	25.0***	**3.389**	**3.542**	**3.740**	**0.162**	**3.321**	**4.755**	**0.243**	**4.413**	**3.909**	5.038*	**2.831**
	(0.730)	(0.000)	**(0.471)**	**(0.771)**	**(0.776)**	(0.000)	**(0.183)**	**(0.170)**	**(0.290)**	**(0.921)**	**(0.344)**	**(0.190)**	**(0.885)**	**(0.110)**	**(0.271)**	(0.080)	**(0.242)**
Adjusted R^2	0.075	0.272	0.068	0.105	0.165	0.100	0.014	0.305	0.050	-0.052	0.872	0.081	-0.135	0.064	0.070	0.182	0.087
Chi-Square	---	---	---	**104*****	---	---	---	---	---	---	**6e^4*****	150***	---	---	**162*****	**28.77*****	---
Fisher	**485*****	**29.92*****	**25.83*****	---	**133*****	**56.5*****	**36.95*****	**273*****	**91.3*****	**276*****	---	---	**5e^4*****	**51.07*****	---	**40.55*****	**25.05*****
Observations	34	57	93	80	72	81	111	44	158	32	8	186	13	149	60	109	153
Panel B: Unrestricted Modeling																	
Constant	62.370	**26.3*****	**21.89****	3.831	**6.996****	**28.2*****	42.601	**13.7*****	23.449	**38.4*****	**7.11*****	21.828	**-19.4*****	21.828	11.966	**24.76*****	23.127
	(0.405)	**(0.000)**	**(0.017)**	(0.915)	**(0.026)**	**(0.000)**	(0.453)	**(0.000)**	(0.185)	**(0.002)**	**(0.000)**	(0.145)	**(0.000)**	(0.145)	(0.244)	**(0.000)**	(0.157)
Gov. Exp.	-0.106	-0.099	-0.358	0.555	0.170	-0.332	-0.237	-0.111	0.318	---	**0.13*****	0.146	0.067	0.146	0.033	-0.141	-0.217
	(0.870)	(0.870)	(0.785)	(0.191)	(0.396)	(0.279)	(0.909)	(0.175)	(0.795)		**(0.000)**	(0.889)	(0.314)	(0.889)	(0.818)	(0.717)	(0.902)
Tax Rev.	-1.375	**0.235***	0.381	0.747	**0.52*****	0.088	-0.936	**0.48*****	-0.235	**0.54*****	**0.41*****	-0.092	**0.79*****	-0.092	0.363	0.153	-0.125
	(0.631)	**(0.074)**	(0.166)	(0.723)	**(0.000)**	(0.794)	(0.667)	**(0.000)**	(0.744)	**(0.000)**	**(0.000)**	(0.878)	**(0.000)**	(0.878)	(0.196)	(0.628)	(0.820)
C. Control	-7.194	**27.1*****	---	---	-4.476	**15.187***	---	-0.764	-2.976	----	---	-3.778	**-15.1*****	-3.778	-5.617	---	-6.447
	(0.676)	**(0.000)**			(0.107)	**(0.067)**		(0.828)	(0.744)			(0.687)	**(0.000)**	(0.687)	(0.536)		(0.645)
Voice & A.	---	---	**16.05****	-6.247	---	---	0.406	---	---	**27.9****	---	---	---	---	---	**13.857****	---
			(0.015)	(0.624)			(0.987)			**(0.036)**						**(0.017)**	
Hausman	**27.0*****	**18.34*****	**36.09*****	5.545	**8.400****	**12.6*****	**24.59*****	4.334	**24.9*****	**23.1*****	0.043	**17.1*****	**64.8*****	**17.16*****	2.364	**22.79*****	**18.03*****
	(0.000)	**(0.000)**	**(0.000)**	(0.135)	**(0.038)**	**(0.000)**	**(0.000)**	(0.227)	**(0.000)**	**(0.000)**	(0.978)	**(0.000)**	**(0.000)**	**(0.000)**	(0.500)	**(0.000)**	**(0.000)**
Sargan OIR	**0.265**	**0.170**	**1.209**	**1.451**	**0.025**	**2.604**	**1.679**	**0.054**	**2.692**	**0.328**	**3.532**	3.005*	**0.017**	**3.005**	**0.012**	**0.183**	**1.796**
	(0.606)	**(0.680)**	**(0.271)**	**(0.228)**	**(0.874)**	**(0.106)**	**(0.194)**	**(0.815)**	**(0.100)**	**(0.848)**	**(0.171)**	(0.082)	**(0.896)**	**(0.082)**	**(0.909)**	**(0.668)**	**(0.180)**
Adjusted R^2	-0.099	0.573	0.074	0.002	0.132	0.289	0.146	0.319	0.045	0.370	0.937	0.127	0.310	0.127	0.132	0.108	0.248
Chi-Square	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Fisher	1.096	**28.41*****	**2.535***	0.843	**98.6*****	2.082	0.495	**6.80*****	0.792	**57.6*****	**463*****	0.373	**112*****	0.373	1.600	**2.754****	0.266
Observations	34	57	93	62	72	81	111	44	121	32	8	147	13	147	45	109	153
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. Voice & A: Voice & Accountability. 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

From the weight of available empirical evidence (summarized in Table 2), we have found an overwhelming homogenous effect of tax effort on investment. Since, the results are consistent with the proposed theory; the explanation for the positive nexus conditional on foreign aid has already been substantially covered in Section 2. Hence, the instrumentality of foreign aid in the positive nexus could be explained from the fact that development assistance reduces the tax effort of the government which provides additional incentives for private investment (either in terms of reinvested profits or improvement of the investment climate). The explanation extends to the formation of fixed capital (Table 4). Another explanation to the positive relationship is that Western donor agencies could require tax institutions to be more accountable and void of corrupt practices and mismanagement. Hence, the previously siphoned funds by corrupt officials are transferred to the private sector. A third elucidation to the positive nexus could be due to a lower composition of loans in the development assistance portfolio. This is especially the case with countries under the Highly Indebted Poor Countries (HIPC) initiative.

We have also found that, the findings for the government expenditure channel are heterogeneous or not consistently positive across fundamental characteristics of private investment. The key idea to understanding this heterogeneity is that the degree by which corrupt officials chose to spend money on goods whose true value is hard to identify may differ across fundamental characteristics. Hence, the negative nexus could be traceable to funds that are used for those expenditures that provide more lucrative opportunities for bribery (Shleifer & Vishny, 1993). Accordingly, expenditure on military and high technology goods are some candidates for providing lucrative opportunities for corrupt officials. Corruption in military spending has been found to be closely linked, especially in military aircraft (Hines, 1995)[15]. On the other hand, the positive nexus could be attributed to expenditures that do not seem to provide any opportunities at all for corrupt officials and ultimately create favorable conditions for private investments. Expenditure in education is a case in point. For example, it would be difficult for a government official to collect bribes for the appointment of unqualified persons to teaching positions. This

[15] It is therefore not surprising that the worst post-apartheid corruption scandal that has embroiled the current president (Jacob Zuma) has been linked to the purchase of military equipment. In the same line of thinking (from a high technology standpoint), the 'Albatross' jet affair that has rocked the Cameroonian institutional landscape has seen the arrest of many high profile politicians over the spectacular disappearances of $ 25 million destined for the purchase of a presidential plane.

line of elucidation could more or less be extended to health, although it is also disputable that sophisticated hospital equipment could give rise to opportunities of corruption[16]. This explanation confirms recent findings that corruption is linked to low spending on education and health in developing countries (Mauro, 1998; De la Croix & Delavallade, 2007).

Since, the negative nexus of government expenditure is contrary to the proposed theoretical underpinnings, it is relevant to devote space to explaining the discussion in the preceding paragraph to elaborate detail with hard stylized facts. It is worthwhile noting that the project approach to foreign aid has underestimated the incentive problems with aid delivery. Hence, education and health ministries in recipient countries must be motivated to get school inputs and medicines (respectively) to citizens. More so, donor bureaucracies themselves must have the incentives to make sophisticated infrastructural projects successful. Firstly, with respect to education, whereas enrollments have expanded rapidly, the quality of education has been hampered by missing inputs like textbooks and other school materials, corruption in education bureaucracies and weak incentives for teachers (Filmer & Pritchett, 1997). Secondly, from a health standpoint, some of the initial progress in Africa has slowed possibly due to the siphoning of funds (Easterly, 2005, p. 8). Studies in Cameroon, Guinea, Tanzania and Uganda estimate that 30 to 70% of government drugs disappear before they get to patients and complicated health issues cannot be solved in the absence of routine methods (Filmer et al., 2000; Prichett & Woolcock, 2004). Thirdly, with regard to the bureaucracy of sophisticated projects, there have been some alarming dysfunctional signs. For example, donors have spent over $2 billion over the past 20 years on roads in Tanzania, but the roads have not improved. The principal output has been aid bureaucracy because about 2400 reports have been provided by 1000 donor missions and government experts each year. The three points discussed in this paragraph could be summarized with another example from Swaziland. It is a good aid candidate that substantially relies on foreign aid, spends about 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. The above points have one common denominator: foreign aid channeled through dubious government expenditure mechanisms (that serve only the interests of

[16] To further illustrate this point, a recent budget scandal in South Africa has been the government's spending of R4 billion on entertainments, travel allowance and catering in 2011 while under-spending in health initiative, which has left about 47% of metropolitan South Africans dissatisfied.

corrupt officials) may not provide the rights incentives for the growth of private investment and fixed capital formation needed for economic prosperity in recipient countries.

4.2.2 Stimulating private investment with foreign aid through constraints on fiscal behavior

The main policy implication arising from this study is that, donor agencies can condition aid to improve the fiscal system and management of aid-related government expenditure in order to facilitate the inflow of private investment and accrual of fixed capital needed for economic growth. Hence, we shall briefly discuss 'revenue side' and 'expenditure side' constraints on which development assistance can be conditioned in order to improve the fiscal behavior of recipient countries.

On the revenue dimension of fiscal management, the following constraints are worth noting. Firstly, a tax administration reform will observe that, the implementation of important anti-corruption measures within the tax administrations, which include updating and modernizing tax agency procedures; restructuring of internal organization based on function (identification, assessment, billing…etc) instead of by 'type of tax'; reducing the number of clearances that are needed from taxpayers to complete compliance processes (i.e., the number of certifications, signatures, forms…etc); limiting the discretionary power of tax officials; tax liability self-assessment and exploring the use of electronic filling. Secondly, semi-autonomous revenue authorities are also vital. In essence, when properly implemented, this enclave dimension to tax administration reform will augment the possibility of de-politicizing tax officials, increase wage levels for tax officials and strengthen internal monitoring mechanisms. Consistent with the literature (Talercia, 2003; Bird, 2004; Martinez-Vazquez et al., 2006; Asongu & Jellal, 2013, 2014), 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. Thirdly, reforms of the tax system can reduce lucrative opportunities for tax officials. Simplification of the tax system by reduction of the number of discretionary tax incentives, deductions and exemptions is also worthwhile.

From the supply perspective of fiscal management, the following constraints are advisable. Firstly, a modern treasury system should be installed in a bid to augment transparency in cash management and disbursement of resources for items authorized in the budget, needed for the consistency between formulation and execution. It is also relevant for the treasury to operate separately from spending agencies and discretionary power of treasury officials can be

reduced by separating departments responsible for each budget execution stage. Secondly, financial management reforms should be requested by aid agencies in order to solidify basic procedures on budget accounting, auditing and reporting. In essence, the public expenditure management should make use of the integrated financial management systems and information technologies. Thirdly, a procurement system reform should be required to facilitate the establishment of standardized procurement processes, ensure maximum exposure and competition of foreign and national bidders as well as satisfy international procurement standards. On account of the fact that procurement systems can be particularly useful if combined with the necessary administrative capacity, independent audition of the procurement procedures should be conducted regularly and reviewed by parliament. Thirdly, a public expenditure tracking system should be developed to identify leaks in the budget implementation stage. Fourthly, civil service reform should be oriented towards key measures that mitigate the probabilities of patronage and corruption such as: reduction of turnover rates, merit-based recruitment, professionalization and de-politicization of public servants. 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. Seventhly, strategies that emphasize political accountability and political representation are necessary since broad political contestability decreases the opportunities of state capture. It is also worthwhile for ordinary citizens to have access to relevant information concerning public spending, including parliamentary debates on the budget formulation.

In addition to imposing constraints to ameliorate fiscal behavior of aid-recipient countries form the revenue and expenditure sides, donors should also require an intergovernmental fiscal structure that favors the decentralization of spending responsibilities and revenue sources. This will provide increased accountability to citizens and improve local government's greater autonomy, which can be instrumental in mitigating corruption in aid-funded projects.

4.2.3 Caveats and future research directions

In light of the theoretical underpinnings of the paper, the study has not taken two major elements into account. Firstly, it would be interesting to decompose government expenditure into its constituent elements in order to understand which components favor private investment activities more. This is essentially because corrupt officials would always try to channel aid-funds to those expenditures that provided more lucrative opportunities for bribery and mismanagement. Secondly, the distinction between concessional loans and grants in the

measurement of development assistance will enable a better understanding of the instrumentality of foreign aid in the investment-fiscal policy nexuses. For instance, the type of foreign aid that augments/reduces the tax effort related to private investments. Hence, interesting future research directions could include the incorporation of above caveats in order to provide policy makers with more specific findings.

5. Conclusion

The paper has provided theoretical and empirical justifications for the instrumentality of foreign aid in stimulating private investment and fixed capital formation through fiscal policy mechanisms. We have proposed an endogenous growth theory based on an extension of Barro (1990) by postulating that the positive effect of aid mitigates the burden of the taxation system on the private sector of recipient countries. The empirical validity is based on 53 African countries for the period 1996-2010. While the findings on the tax effort channel are overwhelmingly consistent with theory across specifications and fundamental characteristics, those of the government expenditure channel are a little heterogeneous but broadly in line with the theoretical postulations. Justifications for the slight heterogeneity, policy implications, caveats and future directions have been discussed.

Appendices

Appendix 1: Summary Statistics

	Variables	Mean	S.D	Min.	Max.	Observations
Investment	Private Investment	12.979	9.400	-2.437	112.35	658
	Fixed Capital Formation	19.708	10.715	-23.76	113.58	706
Fiscal Behaviour	Government Expenditure	4.392	12.908	-57.815	90.544	468
	Tax Revenues	17.693	10.096	0.116	61.583	262
Control variables	Corruption Control Index	-0.607	0.623	-2.495	1.086	622
	Voice & Accountability	-0.674	0.734	-2.174	1.047	636
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
Categorization	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
	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		Control variables		Foreign Aid and Grants				Investment		
Gov. Ex	Tax rev	CC	V&A	T.NODA	NODADAC	NODAMD	Grants	Priv Ivt	GFCF	
1.000	0.098	0.082	0.012	0.039	0.038	0.021	0.036	0.054	0.111	Gov. Ex
	1.000	0.508	0.317	-0.309	-0.304	-0.277	-0.290	0.448	0.551	Tax rev
		1.000	0.665	-0.146	-0.148	-0.123	-0.117	0.151	0.330	CC
			1.000	-0.0009	0.002	-0.002	0.018	0.153	0.212	V& A
				1.000	0.995	0.900	0.808	-0.222	-0.084	T. NODA
					1.000	0.733	0.780	-0.181	-0.070	NODADAC
						1.000	0.716	-0.240	-0.097	NODAMD
							1.000	-0.174	-0.091	Grants
								1.000	0.895	Priv Ivt
									1.000	GFCF

Gov. Ex: Government Expenditure. Tax rev: Tax revenues. CC: Corruption Control. V& A: Voice & Accountability. NODA: Net Official Development Assistance. DAC: Development Assistance Committee. MD: Multilateral Donors. T.NODA: Total NODA. NODADAC: NODA from DAC countries. NODAMD: NODA from Multilateral Donors. Piv Invt: Private Investment. GFCF: Gross Fixed Capital Formation.

Appendix 3: Variable Definitions

Variables	Signs	Variable Definitions (Measurement)	Sources
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)
Voice & Accountability	V&A	Voice and accountability (estimate): measures the extent to which a country's citizens are able to participate in selecting their government and to enjoy freedom of expression, freedom of association and a free media.	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)
Fixed Capital Formation	GFCF	Gross Fixed Capital Formation (% of GDP)	World Bank (WDI)
Private Investment	Priv. Ivt	Gross Private Investment (% of GDP)	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-law	Algeria, Angola, Benin, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo Democratic Republic, Congo Republic, 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	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,	33

Domination		Malawi, Mauritius, Mozambique, Namibia, Rwanda, Sao Tomé & Principe, Seychelles, South Africa, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe.	
	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)

References

Addison, T., Mavrotas, G., & McGillivray, M., (2005), "Development Assistance and Development Finance: Evidence and Global Policy Agendas", *Journal of International Development*, 17, pp. 819-836.

Ahmed, I., Marcoux, C., Russell, B., & Tierney, M. J., (2011), "Foreign Aid in Hard Times: The Political Economy of Aid Effort", Institute of Theory and International Relations.

Alam, S., (2004), "Colonialism and Industrialization: A Critique of Lewis", *Journal of Radical Political Economics*, 36(2), pp. 217-240.

Alexiou, C., (2009), "Government Spending and Economic Growth: Economic Evidence from South Eastern Europe (SSE)", Journal of Economic and Social Research, 11(1), pp. 1-16.

Amin, S., (2014). "Aid for Development", *Springer Briefs on Pioneers in Science and Practice*, 16, pp. 125-137.

Anyanwu, J. C., & Erhijakpor, A. E. O., (2014). "Does Oil Wealth Affect Democracy in Africa?", *African Development Review*, 26 (1), pp. 15-37.

Asongu, S. A. (2012a). "On the effect of foreign aid on corruption", *Economics Bulletin*, 32(3), pp. 2174-2180.

Asongu, S. A. (2012b). "Government quality determinants of stock market performance in African countries", *Journal of African Business*, 13(2), pp. 183-199.

Asongu, S. A., (2012c), "Law and finance in Africa", *Brussels Economic Review*, 55(4), pp. 385-408.

Asongu, S. A. (2013a). "On the effectiveness of foreign aid in institutional quality", *European Economic Letters*, 2(1), pp. 12-19.

Asongu, S. A., (2013b). "Fighting corruption in Africa. Do existing corruption-control levels matter?", *International Journal of Development Issues*, 12(1), pp. 36-52.

Asongu, S. A., (2013c). "Fighting corruption with existing corruption-control levels count: what do wealth-effects tell us in Africa?", *Institutions and Economies*, 5(3), pp. 53-74.

Asongu, S. A., (2014a). "On the dynamic effects of foreign aid to corruption", *European Economics Letters*: Forthcoming.

Asongu, S. A., (2014b). "On taxation, political accountability and foreign aid: empirics to a celebrated literature", *South African Journal of Economics*: Forthcoming.

Asongu, S. A., (2014c). "On foreign aid distortions to governance", *African Governance and Development Institute Working Paper* No. 14/003.

Asongu, S. A., (2014d), "Fighting software piracy in Africa: how do legal origins and IPRs protection channels matter?" *Journal of the Knowledge Economy*. http://link.springer.com/article/10.1007/s13132-012-0137-0 (accessed: 15/05/2013).

Asongu, S. A., (2014e), "Fighting African Capital Flight: Empirics on Benchmarking Policy Harmonization", *European Journal of Comparative Economics*, 11(1), pp. 93-122.

Asongu, S. A. (2015a). "Fighting African corruption when existing corruption-control levels matter in a dynamic cultural setting", *International Journal of Social Economics*: Forthcoming.

Asongu, S. A., (2015b). "Institutional benchmarking of foreign aid effectiveness in Africa", *International Journal of Social Economics*: Forthcoming.

Asongu, S. A., (2015c). "The political economy of economy of development assistance: peril to government quality dynamics in Africa", *International Journal of Social Economics*: Forthcoming.

Asongu, S. A., & Jellal, M., (2014). "International aid, corruption and fiscal policy behavior", MPRA Working Paper.

Asongu, S. A., & Jellal, M. (2013). "On the channels of foreign aid to corruption", *Economics Bulletin*, 33(3), pp. 2191-2201.

Arvis, J-F., Marteau, J-F., & Raballand, G., (2007), "The cost of being landlocked: logistics costs and supply chain reliability", *Word Bank Working Paper Series* No. 4258.

Banuri, T.. (2013). "Sustainable Development is the New Economic Paradigm", *Development*, 56(2), pp. 208-217.

Barro, R. J., (1990), "Government spending in a simple model of endogenous growth", *Journal of Political Economy*, 98(S5), pp. 103-125.

Bartels, F. L., Alladina, S. N., & Lederer, S., (2009), "Foreign Direct Investment in Sub-Saharan Africa: Motivating Factors and Policy Issues", *Journal of African Business*, 10(2), pp. 141-162.

Bird, R. M., (2004). "Administrative Dimensions of Tax Reform", *Asia-Pacific Tax Bulletin*, 10(3), pp. 3-21.

Boone, P., (1996), "Politics and Effectiveness of Foreign Aid," *European Economic Review*, 40, pp. 289-329.

Boyce, J. K., & Ndikumana, L., (2008), "New Estimate of Capital Flight from Sub-Saharan African Countries: Linkages with External Borrowing and Policy Option", PERI Working Paper No. 166, University of Massachusetts Amherst, USA.

Boyce, J. K., & Ndikumana, L., (1998). "Congo's odious debt: External borrowing and capital flight in Zaire", *Development and Change*, 29, pp. 195-217.

Boyce, J. K., & Ndikumana, L., (2001). "Is Africa a Net Creditor? New Estimate of Capital

Flight from Severely Indebted Sub-Saharan African Countries, 1970-1996", *Journal of Development Studies*, 38(2), pp. 27-56.

Boyce, J. K., & Ndikumana, L., (2003). "Public Debt and Private Assets: Explaining Capital Flight from Sub-Saharan African Countries", *World Development*, 31(1), pp. 107-130.

Boyce, J. K., & Ndikumana, L., (2011). "Capital flight from sub-Saharan Africa: linkages withexternal borrowing and policy options", *International Review of Applied Economics*, 25(2), pp.149-170.

Burnside, C., & Dollar, D., (2000), "Aid, Policies and Growth", *American Economic Review*, 90(4), pp. 847-868.

Chenery, H. B., & Strout, A. M., (1966), "Foreign Assistance and Economic Development", *American Economic Review*, 56, pp. 679-733.

Clemens, M. A., Radelet, S., & Bhavnani, R., (2004), "Counting Chickens When They Hatch: the Short-Term Effect of Aid on Growth", *Center for Global Development Working Paper* No. 44.

CIA (2011). Central Intelligence Agency, The World Factbook 2011.

Collier, P. (2007). *The Bottom Billion: Why the Poorest Countries Are Failing and What Can Be Done About It ?*, Oxford University Press.

Collier, P., & Dehn, J., (2001), "Aid, shocks and growth", *World Bank Policy Research Working Paper* No. 2001/11/06.

Collier, P., & Dollar, D., (2001), "Can the World Cut Poverty in Half? How Policy Reform and Effective Aid can Meet International Development Goals," *World Development*, 29(111), pp. 1787-1802.

Crotty, J., & Lee, K., (2002), "Is financial liberalization good for developing countries? The case of South Korea in the 1990s", *Review of Radical Political Economics*, 34(3), pp. 327-334.

Crotty, J., & Lee, K., (2006), "The Effects of Neoliberal Reforms on the Postcrisis Korean Economy", *Review of Radical Political Economics*, 38(3), pp. 381-387.

Crotty, J., & Lee, K., (2009), "Was IMF-Imposed Economic Regime Change in Korea Justified? The Political Economy of IMF Intervention", *Review of Radical Political Economics*, 41(2), pp. 2149-2169.

Degnbol-Martinussen, J., & Engberg-Pedersen, P., (2003), *Aid: Understanding International Development Cooperation*. London: Zed Books.

De la Croix, D., & Delavallade, C., (2007), "Corruption et allocation optimale de l'investissement public", *Revue Economique*, 58(3), pp. 637-647.

Easterly, W., (1999), "The Ghost of Financing Gap: Testing the Growth Model Used in the International Financial Institutions", *Journal of Development Economics*, 60, pp. 423-438.

Easterly, W., (2005a), "Can foreign aid save Africa", Saint John's University.

Eubank, N. (2012). "Taxation, Political Accountability and Foreign Aid: Lessons from Somaliland", *Journal of Development Studies*, 48(4), pp. 465-480.

Fosu, A., (2013a), "Growth of African Economies: Productivity, Policy Syndromes and the Importance of Institutions", *Journal of African Economies*, 22(4), pp. 523-551.

Fosu, A., (2013b), "Institutions and African Economies: An Overview", *Journal of African Economies*, 22(4), pp. 491-498.

Gibson, C., Hoffman, B., & Jablonski, R., (2014). "Did Aid Promote Democracy in Africa? The Role of Technical Assistance in Africa's Transitions", University of California, San Diego. http://ryanjablonski.files.wordpress.com/2014/05/did-aid-promote-democracy-in-africa.pdf (Accessed: 05/06/2014).

Ghosh, J., (2013). "Towards a Policy Framework for Reducing Inequalities", *Development*, 56(2), pp. 218-222.

Ghura, D., Hadjimichael, M.T., Mahleisen, M., Nord, R., & Ucer, E.M., (1995), "Sub-Saharan Africa: Growth, Savings and Investment, 1986-93", IMF Occasional Paper No. 118.

Gupta, S., de Mello, L., & Sharan, R., (2000), "Corruption and Military Spending", *IMF Working Paper* No. 00/23.

Feeny, S., (2003), "The impact of foreign aid on poverty and human well-being in Papua New Guinea", *Asia-Pacific Development Journal*, 10, (2).

Feredeaned, E., & Dahlby, B., (2012), "The Impact of Tax cuts on Economic Growth: Evidence from the Canadian Provinces", *National Tax Journal*, 65(3), pp. 563-594.

Fielding, D., McGillivray, M., & Torres, S., (2006), "A Wider Approach to Aid Effectiveness: Correlated Impacts on Health, Wealth, Fertility and Education", The World Institute for Development Economics Research (UNU-WIDER).

Filmer, D., Hammer, J., & Pritchett, L., (2000), "Weak Links in the Chain: A Diagnosis of Health Policy in Poor Countries," *The World Bank Research Observer*, 15, (2), pp. 199–224.

Filmer, D., & Pritchett, L., (1997), "What Educational Production Functions Really Show : A Positive Theory of Education Spending", *World Bank Policy Research Paper* No. 1795.

Fofack, H., (2014). "The Idea of Economic Development: Views from Africa", *WIDER Working Paper* 2014/093.

Gomane, K., Morrissey, O., Mosley, P., & Verschoor, A., (2003), "Aid, pro-poor Government Spending and Welfare", *CREDIT Working Paper* 03/01.

Guillaumont, P., & Chauvet, L., (2001), "Aid and Performance: A Reassessment," *Journal of Development Studies*, 37, pp. 66-92.

Herrick, C., (2008), "The Southern African Famine and Genetically Modified Food Aid: The Ramifications for the United States and European Union's Trade War', *Review of Radical Political Economics*, 40(1), pp. 50-66.

Hines, J., (1995), "Forbidden payments: foreign bribery and American business", NBER Working paper 5266.

Ishfaq, M., (2004), "Aid effectiveness, debt capacity and debt management in the economy of Pakistan", a PhD dissertation at Quad-e-Azam University, Islamabad.

Kindiki, M. M., (2011). "International Regime Governance and Apparel Labour Upgrading in Export Processing Zones in Urban Kenya", *African Review of Economics and Finance*, 3(1), pp. 26-40.

Kangoye, T., (2013). "Does Aid Unpredictability Weaken Governance? Evidence From Developing Countries", *The Developing Economies*, 51(2), pp. 121-144.

Knack, S., & Keefer, P., (1995), "Institutions and Economic Performance: cross-country tests using alternative institutional measures", *Economics and Politics*, 7(3), pp. 207-227.

Koechlin, T., (2007), "Fighting Global Poverty, Three Ways", *Review of Radical Political Economics*, 39(3), pp. 377-384.

Krause, U. (2013). "Innovation: The new Big Push or the Post-Development alternative?", *Development*, 56(2), pp. 223-226.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W., (1998), "Law and finance", *Journal of Political Economy*, 106, pp. 1113-1155.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W., (1999), "The quality of government", *Journal of Law, Economics and Organization*, 15, pp. 222-279.

La Porta, R., Lopez-de-Silanes, F., & Shleifer, A., (2008), "The Economic Consequences of Legal Origin," *Journal of Economic Literature*, 46(2), pp. 285-332.

Levy, D., & Duménil, G., (2006), "Imperialism in the Neoliberal Era: Argentina's Reprieve and Crisis", *Review of Radical Political Economics*, 38(3), pp. 388-396.

Manly, T. S., Thomas, D. W., & Schulman, C. T., (2006), "Tax Incentives for Economic Growth: Capital Investment or Research", in Suzanne Luttman (ed) 17, Advances in Taxation, 17, pp. 95-120.

Marglin, S. A. (2013). "Premises for a New Economy", *Development*, 56(2), pp. 149-154.

Martinez-Vazquez, J., Arze, F. J., & Boex, J., (2006), "Corruption, Fiscal Policy and Fiscal Management: Fiscal Reform in Support of Trade Liberalization"? United States Agency for International Development.

Masud, N., & Yontcheva, B., (2005), "Does Foreign Aid Reduce Poverty? Empirical Evidence from Nongovernmental and Bilateral Aid", *IMF Working Paper*, 05/100.

Mauro, P., (1998), "Corruption and the composition of government expenditure", *Journal of Public Economics*, 69(2), pp. 263-279.

Minou, C., & Reddy, S. G. (2010), "Development aid and economic growth: A positive long-run relation", *The Quarterly Review of Economics and Finance*, 50, pp. 27-39.

Monni, S., & Spaventa, A., (2013). "Beyond GDP and HDI: Shifting the focus from paradigms to politics", *Development*, 56(2), pp. 227-231.

Morrissey, O., (2012), "Aid and Government Fiscal Behavior. What Does the Evidence Say?", *UNU-WIDER Working Paper* No. 2012/01.

Mosley, P., Hudson, J., & Horrell, S., (1992), "Aid, The Public Sector and The Market in Less Developed Countries: A Return to The Scene of Crime", *Journal of International Development*, 4, pp. 139-150.

Mosley, P., Hudson, J., & Verschoor, A., (2004), "Aid, Poverty Reduction and the 'new' Conditionality", *Economic Journal*, 114, F217–F243.

Moyo, D., (2009). *Dead Aid: Why Aid Is Not Working and How There is Another Way for Africa*. New York: Farrar, Straus and Giroux.

Ndlovu-Gatsheni, S. J. (2013). "The Entrapment of African within the Global Colonial Matrices of Power: Eurocentrism, Coloniality and Deimperialieation in the Twenty-first century", *Journal of Developing Societies*, 29(4), pp. 331-353.

Obeng-Odoom, F. (2013). "Africa's Failed Economic Development Trajectory: A Critique", *African Review of Economics and Finance*, 4(2), pp. 151-175.

Okada, K., & Samreth, S., (2012), "The effect of foreign aid on corruption: A quantile regression approach". *Economic Letters*, 11, pp. 240-243.

Oya, C., (2006), "The Political Economy of Development Aid as Main Source of Foreign Finance for Poor African Countries: Loss of Policy Space and Possible Alternatives from East Asia", School of Oriental and African Studies, University of London.

Payne, J. E., & Kumazawa, R., (2005), "Capital mobility, foreign aid and openness: further panel data evidence from sub-Saharan Africa", *Journal of Economics and Finance*, 29(1), pp. 122-126.

Pedersen, K. P., (1996), "Aid, Investment and Incentives," *Scandinavian Journal of Economics*, 98(3), pp. 423-438.

Pritchett, L., & Woolcock, M., (2004), "Solutions When the Solution Is the Problem: Arraying the Disarray in Development", *World Development*, 32 (2), pp. 191-212.

Reichel, R., (1995), "Development, Aid, Savings and Growth in the 1980s: A Cross-Sectional Analysis," *Savings and Development*, 19(3), pp. 279-296.

Remmer, K. L., (2004), "Does Foreign Aid Promote the Expansion of Government", *American Journal of Political Science*, 48(1), pp. 77-92.

Resnick, D., (2012), "Foreign Aid in Africa, Tracing Channels of Influence on Democratic Transitions and Consolidation", *UNU-WIDER Working Paper* No. 2012/15.

Rostow, W. W., (1960), *The Stages of Economic Growth: A Non-Communist Manifesto*.

Shleifer, A., & Vishny, R., (1993), "Corruption", *Quarterly Journal of Economics*, 108, pp. 599-617.

Snyder, D. W., (1996), "Foreign aid and private investment in developing countries", *Journal of International Development*, 8(6), pp. 735-745.

Svensson, J., (2000). "Foreign Aid and Rent-Seeking", *Journal of International Economics*, 51(2), pp. 437-461.

Taliercio, R., (2003). "Designing Performance: The Semi-Autonomous Revenue Authority Model in Africa and Latin America." *World Bank Policy Research Working Paper* No. 3423.

Titumir, R. A. M., & Kamal, M. (2013). "Growing Together Sustainably: A zero-poverty post 2015 development framework", *Development*, 56(2), pp. 172-184.

Vicente, P. C., & Wantchekon, L., (2009). "Clientelism and vote buying; lessons from field experiments in African elections", *Oxford Review of Economic Policy*, 25(2), pp. 292-305.

Wamboye, E., Adekola, A., & Sergi, B. S. (2013). "Economic Growth and the Role of Foreign Aid in Selected African Countries", *Development*, 56(2), pp. 155-171.

Wantchekon, L., (2003). "Clientelism and voting behavior: Evidence from a field experiment in Benin", *World Politics*, 55(3), pp. 399-422.

Weeks, J., (2012), "Macroeconomic Impact of Capital Flows in Sub-Saharan African Countries, 1980-2008*", Association of Concerned Africa Scholar Bulletin*, No. 87, pp. 1-7.