

# The Questionable Economics of Development Assistance in Africa: Hot-Fresh Evidence, 1996–2010

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Published online: 5 October 2014

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**Abstract** This paper assesses the aid-development nexus in 52 African countries using updated data (1996–2010) and a new indicator of human development (adjusted for inequality). The effects of Total Net Official Development Assistance (NODA), NODA from the Development Assistance Committee (DAC) and NODA from Multilateral donors on economic prosperity (at national and per capita levels) are also examined. The findings broadly indicate that development assistance is detrimental to GDP growth, GDP per capita growth and inequality adjusted human development. The magnitude of negativity (which is consistent across specifications and development dynamics) is highest for NODA from Multilateral donors, followed by NODA from DAC countries. Given concerns on the achievement of the MDGs, the relevance of these results point to the deficiency of foreign aid as a sustainable cure to poverty in Africa. Though the stated intents or purposes of aid are socio-economic, the actual impact from the findings negates this. It is a momentous epoque to solve the second tragedy of foreign aid; it is high time economists and policy makers start rethinking the models and theories on which foreign aid is based. In the meantime, it is up to people who care about the poor to hold aid agencies accountable for piecemeal results. Policy implications and caveats are discussed.

**Keywords** Foreign aid · Political economy · Development · Africa

**JEL Classification** B20 · F35 · F50 · O10 · O55

## Introduction

Foreign aid has been motivated by a mixture of economic interests, altruism, historical ties and geo-strategic (imperialist) considerations.<sup>1</sup> Donors, mostly from the Western capitalist world have offered foreign aid to developing countries in the form of grants and soft loans, especially after the emergence of dozens of states with the

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<sup>1</sup>The imperialist origin of poverty is still widely debated. See Alam (2004).

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decolonization process (Oya, 2006). While foreign aid may be necessary in the short-term due to certain humanitarian concerns, there has been an endless debate over the effectiveness of aid to Africa and the linkage between aid, conditionality and economic policies in recipient countries.<sup>2</sup> This debate has led many analysts to question the usefulness of aid and the need for alternatives (Oya, 2006).<sup>3</sup> It has been substantially documented that the Cold War and the battle for geopolitical control in Africa between superpowers was perhaps the most important determinant of aid increases in the 1980s (Degnbol-Martinussen and Engberg-Pedersen, 2003a, 2003b).

Much of the literature has focused on the macroeconomic impact of aid, but mixed results have been reported and those that have revealed significant positive effects face heavy methodological criticisms. In assessing the impact of development assistance, a great chunk of studies focus on the effect of aid-flows on GDP growth and other macroeconomic variables (investment or public consumption). The underlying assumption here is the notion that aid is destined to bridge the saving-investment gap poor countries face (Rostow, 1960; Chenery and Strout, 1966; Easterly, 2005a). Surprisingly there has been much less research conducted on the impact of foreign aid on the evolution of human development (Masud and Yontcheva, 2005), in spite of the change in objectives announced by the donor community which have evolved from intensive industrialization programs advocated in the 1950s to more recent poverty-reducing objectives such as the Millennium Development Goals (MDGs). With the year 2015 drawing nigh, it is imperative to assess the donors' objective of reaching the MDGs. In plainer terms, investigating the effectiveness of development assistance on human development in developing countries in the run-up to 2015 could provide crucial policy options to donor and multilateral agencies on their assistance impact.

The contribution of this paper to the literature is sixfold. Firstly, we assess the aid-development nexus from three dimensions (GDP growth, GDP per capita growth and human development). Another important contribution is the use of human development measure hitherto unemployed in the literature: the Inequality Adjusted Human Development Index (IHDI) first published in the 2010 Human Development Report. As suggested by Boone (1996), aid effectiveness should not only be measured by its impact on GDP growth. Therefore, our analysis can both capture GDP and human development targeted development assistance. Moreover, while past research on the aid-development nexus has used the HDI unadjusted for inequality, this paper, is to the best of our knowledge the first that uses the IHDI in the aid-development assessment. This indicator is consistent with recent analyses on what constitutes African development and what Africans cherish most (from North to South and West to East): living a purposeful and happy life (Obeng-Odoom, 2013).

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

<sup>3</sup> The debate extends to areas of external assistance like structural adjustment policies by the International Monetary Fund (IMF). There is substantially documented evidence that the IMF's neoliberal policies have been perilous to South Korean development after the 1997 crisis (Crotty and Lee, 2002, 2006, 2009) and the main cause of the Argentinean crisis in the late 1990s and early 2000s (Levy and Duménil, 2006). Even recent findings from Africa suggest that the IMF's structural adjustment policies may not have the investment effects in the future (Asongu, 2013a).

Secondly, a great bulk of the literature is based on data collected between 1960 and 1995. By using recent data (1996–2010), this paper provides an updated account of trends in the nexuses. Also, results from recent data will enable a more robust projection of the MDGs.<sup>4</sup> Thirdly; the global economic downturn has sparked concerns about donor's continued willingness to give (Ahmed et al., 2011). Hence, assessing the development effects of foreign aid in the most aid-intensive continent could throw more light into the debate.<sup>5</sup>

Fourthly, there is currently a shifting of policy space to aid alternatives from East Asia. Learning from the East Asian success stories has been hampered by an unequal bargaining power of African governments, vis-à-vis Western development partners. For example, the Chinese 'cooperative and non-interference' oriented aid and foreign direct investment (FDI) policy in Africa is viewed by some as a better alternative. Thus, the outcome of this study may either reinforce the growing mentality or negate it.

Fifthly, this paper broadly extends the Okada and Samreth (2012) and Asongu (2012a, 2013b) debate 'on the effect of foreign-aid on corruption' from an institutional to an economic perspective. "*The Okada and Samreth (2012, EL) finding that aid deters corruption could have an important influence on policy and academic debates. This paper partially negates their criticism of the mainstream approach to the aid development nexus. Using updated data (1996–2010) from 52 African countries, we provide robust evidence of a positive aid-corruption nexus. Development assistance fuels (mitigates) corruption (the control of corruption) in the African continent. As a policy implication, the Okada and Samreth (2012, EL) finding for developing countries may not be relevant for Africa*" (Asongu, 2012a, p. 1). In response to some informal discussions that have emerged citing that the Okada and Samreth (2012) and Asongu (2012a) findings are not directly comparable because of differences in methodological underpinnings, Asongu (2013b) has confirmed his stance on the debate by using the Okada & Samreth methodology and extending the grounds of his position from corruption to eight institutional quality dynamics.

Sixthly; our focus on 52 of the 54 countries in Africa provides a broad view on the continent in which the aid-development debate is most intense.<sup>6</sup> The remainder of the paper is organized in the following manner. Section 2 presents the literature on aid effectiveness. Data and methodology are presented and described respectively in Section 3. Empirical analysis is covered in Section 4. Section 5 concludes. It is important to note that there are various types of aid. What is being investigated here falls within the framework of financial development assistance. This emphasis is

<sup>4</sup> A great chunk of the literature is based on data collected between 1960 and 1995. By using recent data (1996–2010), this paper provides an updated account of the nexus.

<sup>5</sup> Koechlin (2007) has recently reframed the debate by assessing three ambitious books (Sachs's *The End of Poverty*, Bhagwati's *In Defense of Globalization*, and Easterly's *The Elusive Quest for Growth*), and has concluded that, the insights and shortcomings of these three books remind us that the status quo is not working and that a rich understanding of globalization and development requires a serious consideration of alternative visions of each. Some new ways of theorizing development in light of the globalized systems of food production have included the USA led 'genetically modified food aid' to the Southern African region, which is widely criticized by the European Union (Herrick, 2008).

<sup>6</sup> We focus mainly on Africa where the aid-development debate is most tensed. While previous studies have mixed countries in various continental regions or focused on a restricted set of countries owing to constraints in data availability, this paper uses data from 52 of the 54 African countries.

important for the relevance of policy implications (Martinussen, 1997; Degnbol-Martinussen and Engberg-Pedersen, 2003a, 2003b).

## Theoretical Highlights, Conflicts in the Literature, Africa's Need and Western Responses

### Theoretical Highlights and Conflicts in the Literature

The concern of whether aid improves GDP growth can be traced back to the two-gap model (Chenery and Strout, 1966), which remains the most influential theoretical underpinning of the aid effectiveness literature. In this model, developing countries face constraints on savings and export earnings that deter investment and economic growth. In spite of the severe criticisms since its inception, this model has provided the underlying principles both for early aid policies (Easterly, 1999) and regression specifications of a great many aid-growth (savings) empirical papers (Masud and Yontcheva, 2005).

The literature on the effectiveness of aid has almost exclusively been focused on the macroeconomic impacts of aid, assessing the effects of aid on economic savings, investment and growth. The lack of analytical framework, heavy reliance on empirical evidence (which is often ambiguous at best) and inconclusive results with recently refined methodologies (Masud and Yontcheva, 2005), have left the subject matter widely open to debate. For the purpose of clarity, literature pertaining to the effectiveness of aid on growth (development) could be clubbed into two strands as summarized in Table 1: one advocating the negative consequences of aid and the other acknowledging the positive rewards of development assistance.

In the first strand, we find studies favoring positive effects of aid on growth and development. Among these works, we shall highlight that of Burnside and Dollar (2000) which concludes that aid can be effective when economic (monetary, fiscal and trade) policies are good. The Burnside and Dollar (2000) work has received abundant comments from researchers (Guillaumont and Chauvet, 2001; Collier and Dollar, 2001; Easterly et al., 2003), whose results have been challenged as being “extremely data dependent” (Clemens et al., 2004). While Clemens et al. (2004) have shown that aid is beneficial in the short-term; Minou and Reddy (2010) have recently established that the beneficial effects could also be in the long-run. Gomane et al. (2003) have concluded that aid has both a direct effect on welfare and an indirect impact through public spending and social services. The indirect perspective has been confirmed by Mosley et al. (2004) on poverty and wellbeing in recipient countries.

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

**Table 1** Summary of conflicts in the literature

Researchers	Main findings
	First-strand: Aid improves growth (development)
Ghura et al. (1995)	Aids positively impacts savings for good adjusters
Burnside and Dollar (2000)	Aid can be effective when policies and economic management are good.
Guillaumont and Chauvet (2001)	Aid effectiveness is contingent on environmental factors (shocks and hazards).
Collier and Dollar (2001)	Aid effectiveness depends on negative supply shocks. Targeting aid contingent on negative supply shocks is better than targeting based on good policies.
Collier and Dollar (2001)	The positive effect of aid on poverty depends on its impact on per capita income growth and the impact of per capita income growth on poverty reduction.
Feeny (2003)	The sectoral allocation of foreign aid to Papua New Guinea has been broadly in line with a strategy to effectively reduce poverty and increase human wellbeing.
Gomane et al. (2003)	Aid has both a direct effect on welfare and an indirect effect through public spending on social services.
Clemens et al. (2004)	Aid has a short-term positive impact on growth.
Ishfaq (2004)	Foreign aid, in a limited way though, has helped in reducing the extent of poverty in Pakistan.
Mosley et al. (2004)	Foreign assistance has an indirect impact on poverty and the wellbeing of recipient countries.
Addison et al. (2005)	Aid increases pro-poor public expenditure and has a positive effect on growth. Aid broadly works to mitigate poverty, and poverty would be higher in the absence of aid.
Fielding et al. (2006)	There is a straight forward positive impact of aid on development outcomes.
Sachs (2009)	Aid is needed at the early stages of development.
Minou and Reddy (2010)	Development assistance positively affects growth in the long-term.
Okada and Samreth (2012)	Foreign aid reduces corruption.
Asongu and Jellal (2013)	Aid channeled through private investment and tax effort decreases corruption.
	Second-strand: Aid does not lead to growth (development)
Mosley et al. (1992)	Aid increases unproductive public consumption and fails to promote growth.
Reichel (1995)	Aid fails to promote savings owing to the substitution effect.
Ghura et al. (1995)	Aid negatively impacts savings.
Boone (1996)	Aid is insignificant in improving economic development for two reasons: poverty is not caused by capital shortage and it is not optimal for politicians to adjust distortionary policies when they receive aid flows.
Pedersen (1996)	Foreign Aid distorts development and leads to aid dependency.
Collier (2007)	Aid is not a task that can be handled by Official Development Assistance (ODA) because aid-recipient countries are for the most part fragile and characterized by histories of conflicts, weak governance and limited good governance mechanisms with which to effectively disburse aid.
Collier and Hoeffler (2007)	Potentially, foreign aid is promoting a 'regional public bad' and there seems to be no regional public good impact offsetting the 'public bad' originating from the arms race in neighboring countries.

**Table 1** (continued)

Researchers	Main findings
Moyo (2009)	Foreign aid has increased dependency, poverty and corruption in Africa.
Asongu (2012a)	Foreign aid fuels corruption and mitigates the control of corruption
Asongu (2012b)	Development assistance is perilous to government quality dynamics
Asongu (2013b)	Foreign aid is detrimental to institutional quality irrespective of initial levels in institutional development.
Asongu and Jellal (2013)	Aid channeled through government expenditure increases corruption.

Source (Author)

While the effectiveness of aid is more straightforward for some (Ishfaq, 2004; Addison et al., 2005; Fielding et al., 2006), the Okada and Samreth (2012) findings ‘on the effect of foreign aid on corruption’ have recently been object of intense debate from an African perspective (Asongu, 2012a; Asongu, 2013b; Asongu and Jellal, 2013). Addison et al. (2005) have concluded that aid strengthens pro-poor public expenditure and has a positive impact on growth because it broadly mitigates poverty. Their position that poverty will be higher in the absence of aid has been confirmed by Ishfaq (2004). Of all examined proponents of a positive aid-development nexus, Fielding et al. (2006) have been the most optimistic in their conclusion on a straight forward positive impact of aid on development outcomes.

Moyo (2009) has reignited the debate with her polemic ‘Dead Aid’, which has received substantial reactions from scholars and policy makers. Moyo sustains that foreign aid has increased dependency, poverty and corruption in Africa. While some scholars have supported her claims empirically with updated data (Asongu, 2012a; Asongu and Jellal, 2013), she also has critics. First, Sachs (2009) sustains that aid may be necessary at the early stages of development after presenting a twofold emotional counter-argument: (1) he thinks Moyo lacks the moral values to preach her thesis because she received scholarships to study at the best universities in the world (Harvard & Oxford) and latter in life sees something wrong with giving a \$10 aid for an anti-malaria bed net to an African child and; (2) the study fails to account for the realities of life, notably the fact that everybody needs help at a certain point in time, in one form or another. Recently in *The Guardian* (2013), Bill Gate has gone a step further in qualifying Moyo’s book as ‘promoting evil’ and emphasizing that she seems to neither know much about aid nor what aid is doing. He concludes that her position is a morally difficult one to adopt.

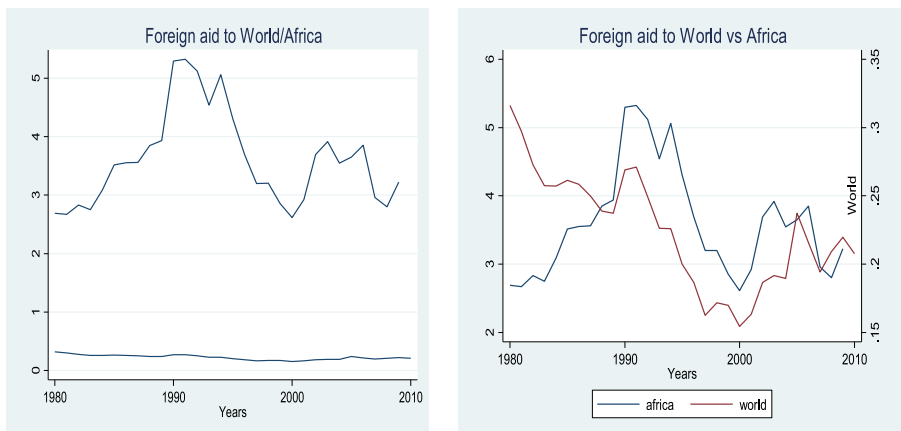
### Africa’s Need and Western Responses

A highly published and experienced scholar in African economies has assessed the trajectories of poverty reduction at the global level (Collier, 2007). According to the author, aid is not a task that can be handled by Official Development Assistance (ODA) because aid-recipient countries are for the most part fragile and characterized by histories of conflicts, weak governance and limited good mechanisms with which to effectively disburse aid. According to the narrative, African countries are entrenched in

one or more of the following four traps: weak governance in small countries: conflict; landlocked with bad neighbours; and mismanaged dependency on natural resources. The book strongly argues that development portfolios are not the most optimal strategies to lead donor governments in their efforts of alleviate poverty for the bottom billion because they would benefit more from ‘whole of government forms’ of aid. Essentially, this paradigm shift calls for other portfolios because the mainstream approach is based on increasing ODA strategies to a certain threshold of donor Gross National Income (GNI).

The bulk of African countries lie low on standard international comparisons. In line with Easterly (2005a), they occupy most of the bottom places in income per capita, percent of population living in extreme poverty (less than 1.25 US dollar a day), life expectancy, infant mortality, literacy, AIDS prevalence and the HDI. The last four decades have been those of some growth disappointment in Africa. The West has responded to Africa’s tragedy with intensive involvement of foreign aid agencies and international organizations. On average, African countries receive much more aid as a percentage of their GDPs than other developing countries. The West does more because Africa is poor, however its efforts are supposed to have a positive impact on the GDPs of recipient countries.

As illustrated in Fig. 1 above, Africa has received more aid in terms of GDP relative to World aid in terms of Gross National Income. The sharp drop in aid from the 1990s marks the end of the Cold war with the fall of the Berlin wall. This confirms the thesis that one of the prime motivations for development assistance was imperialism and the quest for geo-political influence. Accordingly, among donors most engaged in the Cold war struggle (particularly the United States and the Soviet Union) domestic support for aid evaporated with the end of the global ideological clash. Consistent with Hopkins (2000), among the Organization for Economic Co-operation (OECD) members, the largest declines in aid since 1992 are reported in the United States, followed by close military allies: Germany, Japan, Australia...etc. According to the author, the decline in aid from 1992 to 1998 from each of the OECD countries corresponds fairly well to a rank ordering countries in terms of the intensity of their involvement in cold war activities. However, the erosion of cold war motivations did not affect all donors.



**Fig. 1** Foreign aid to Africa/World. Source (World Bank)

Nonaligned states like Finland and Switzerland which did not use aid for strategic purposes avoided substantial declines in the 1990s.

After the year 2000, with the adoption of the MDGs, foreign aid soared in Africa and only declined again in the wake of the global financial crisis when donors' commitment reduced owing to budget austerity measures. From the first graph in Fig. 1, it could also be noticed that while aid to Africa varied with the above discussed factors, World aid remained relatively stable. Even if World aid varied as shown in the second graph, the variations are marginal compared to those of African aid because the units of their corresponding y axes are not directly comparable.

Consistent with Easterly (2005a), theories and empirics on Western assistance to Africa can be discussed in four main strands. First, there are 'Big-Push' and/or financing gap models with resulting scholarly feedbacks (Rosenstein-Rodan, 1943; Murphy et al., 1989; Rostow, 1960; Chenery and Strout, 1966; Collier et al., 2001; Devarajan et al., 2002; Sachs, 2005; Kraay and Raddatz, 2005; Boone, 1996; Masud and Yontcheva, 2005). A second strand is project interventions in terms of education and health, whereby it is argued that Africa's poverty results from low human capital (poor health and education) and infrastructure as well as corruption in health systems (Filmer and Pritchett, 1997; Filmer et al., 2000; Prichett and Woolcock, 2004). Though non-financial factors have been recently documented to be responsible for sanitation problems in the continent (Njoh, 2012), there are also suggestions that the health policy debate must be refocused around social inequality and poverty (Obeng-Odoom, 2012). Third, growth models and the role multinational organizations that may not be getting their strategy of 'aid for policies adjustments' right (Alesina and Dollar, 2002; Burnside and Dollar, 2000; Van de Walle, 2001; Easterly, 2005b). Fourth, poor institutions and dysfunctional donors are cited as causes of failing aid (Svensson, 2000; Knack, 2001; Djankov et al., 2005).

It is interesting to discuss the shift in focus of aid from development to more poverty reducing initiatives like the MDGs. Consistent with Masud and Yontcheva (2005, pp. 5–6), there was a change in strategic motivations of aid donors in the late 1990s. As suggested by Boone (1996), one of the reasons advanced for the disappointing results of most aid oriented studies is that GDP growth is not the right measure of aid effectiveness. Accordingly, aid could be increasing consumption rather than investment (which would explain the disappointing results of studies on growth) and still mitigate poverty via either 'higher consumption of the poor or greater provision of services to the poor'. In light of these developments (on studies that measured the impact of aid on social indicators instead of macroeconomic variables), the avowed objectives of the donor community evolved from industrialization programs to poverty reduction initiatives, reflected by the adoption of the MDGs. Many of the targets of these MDGs first discussed at international conferences and summits held during the 1990s were later compiled and became known as the International Development Goals. In September 2000, member states of the United Nations unanimously adopted the Millennium Declaration and the General Assembly acknowledged the MDGs as part of the road map for implementing the Millennium Declaration. There is also a growing literature on Sustainable Development Goals (SDGs) in Africa (Abbott, 2012).



## Data and Methodology

### Data

Borrowing from Clemens et al. (2004), aggregate aid could be divided into three categories: (1) emergency and humanitarian aid (likely not to be positively correlated with growth in the short-term)<sup>7</sup>; (2) aid that affects growth only over the long-term (if at all); such as aid to support democracy, the environment, health or education; and (3) aid that plausibly could stimulate growth in the long-term, including budget and balance of payments support, investments in infrastructure and aid for productive sectors such as agricultural and industrial. While studies on aid effectiveness implicitly define donors' objective as solely the promotion of economic growth or the reduction of poverty in the recipient countries, a parallel strand of the literature on aid allocation has shown that most donors often pursue a different underlying agenda: allocating aid according to their own strategic interest. Masud and Yontcheva (2005) have pointed-out that if a significant part of aid is allocated for strategic purposes, no positive impact in terms of growth or poverty alleviation should be expected. We partially refute this claim by asserting that, foreign aid irrespective of vested donor-interest should contribute to development or economic deterioration (even in marginal terms) either directly or indirectly. This is essentially because strategic foreign aid could be assimilated to foreign direct investment that also has strategic business interests. Accordingly, even if the strategic foreign aid was to end-up in the pockets of corrupt officials, it may still be laundered and reinvested in the domestic economy.

We examine a panel of 52 African countries with data from African Development Indicators (ADI) of the World Bank (WB). Details of summary statistics (Table 5), correlation analysis (Table 6), variable definitions (Table 7) and presentation of countries (Table 8) are found in the appendices. In a bid to obtain results with more updated policy implications, the dataset spans from 1996 to 2010. Dependent variables include: GDP growth, GDP per capita growth and IHDI, while independent variables are dynamics of Net Official Development Assistance (NODA). For robustness purposes we use three measures of NODA: total NODA, NODA from Multilateral donors and NODA from the Development Assistance Committee (DAC) countries.<sup>8</sup> Accordingly, the IHDI accounts for inequality in the HDI by adjusting for the degree of inequality as measured by the Atkinson index. ADI provide both indicators for the HDI and IHDI. The former (code: UNDP.HDI.HY.XQ) has data from 1980 whereas the latter (code: UNDP.HDI.HY.XD) has data from 1970. Hence, the

<sup>7</sup> “Funding for a new road might affect economic activity in short order, funding for a vaccination campaign might only affect growth decades later, and humanitarian assistance may never affect growth” (Clemens et al., 2004, p. 4).

<sup>8</sup> Multilateral donors are international organizations such the World Bank that provide development assistance. They also act as an agency for channeling funds between donor countries and recipient countries. There are 24 DAC members. They include Australia, Austria, Belgium, Canada, Denmark, European Union, Finland, France, Germany, Greece, Ireland, Italy, Japan, Korea, Luxembourg, The Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom and the United States.

issue of comparing the IHDI first published in 2010 with the HDI before 2010 does not apply here because the former has been adjusted from 1970.

In the regressions we control for population growth rate, regulation quality, democracy and public investment. The choice of control variables is constrained by the degrees of freedom necessary for overidentifying restrictions tests at second-stage regressions (more than two control variables will result in exact or under-identification; meaning instruments are either equal to or less than the number of endogenous explaining variables respectively). Instrumental variables are: income-levels, religious-dominations and legal-origins. These instruments have been largely documented in the economic development literature (La Porta et al., 1997; Beck et al., 2003; Agbor, 2011). The choice of the instruments is also consistent with recent African human development (Asongu, 2013c), institutions (Asongu, 2012a) and finance (Asongu, 2012c) literature. Religion has been documented as a significant determinant of foreign aid (Nelson, 1988). From intuition, high-income countries are less prone to aid than their middle- and low-income counterparts.

## Methodology

The methodological underpinning largely borrowed from Beck et al. (2003) is typically consistent with recent African human development (Asongu, 2013c), institutions (Asongu, 2012a) and finance (Asongu, 2012c) literature. Accordingly, we first regress the foreign aid indicators on the instrumental variables and then save the fitted values that are subsequently used as regressors in the main (second-stage) equation of the Instrumental Variable (IV) empirical strategy. The intuitions motivating the choice of the instrumental variables are the following. (1) Economic prosperity (in terms of income-levels) affects aid decisions since it is normal to expect that aid might be higher in low-income countries. (2) The colonial heritage in terms of legal origins also influences how former colonial powers allocate aid to poorer countries. Accordingly, it should be expected that more aid would be allocated to former colonies in view of preserving some strategic interests. (3) Few would object to the view that faith matters in foreign aid allocation decisions. This position has been empirically confirmed by recent literature on the ‘Muslim-ness’ of aid recipients: oil, immigration and terrorism (Loud et al., 2008).

## *Endogeneity*

While development assistance has a bearing on the development of the recipient country (Addison et al., 2005; Fielding et al., 2006), the reverse effect cannot be ruled-out as aid from donor agencies (countries) is conditional on development (institutional) characteristics of recipient countries. Such factors maybe environmental (Guillaumont and Chauvet, 2001), supply-shocks (Collier and Dollar, 2001) or even effective policies and economic management standards (Burnside and Dollar, 2000). We are thus faced with an issue of endogeneity owing to reverse-causality and omitted variables, since the NODA indicators are

correlated with the error term in the equation of interest. To address this issue we shall confirm the presence of endogeneity with the Hausman-test and employ an estimation technique that takes account of the endogeneity issue.

### *Estimation Technique*

In accordance with Beck et al. (2003) and recent African law-finance literature (Asongu, 2011) the paper adopts an IV estimation method. IV estimation addresses the puzzle of endogeneity and thus avoids the inconsistency of estimated coefficients by Ordinary Least Squares (OLS) when the exogenous variables are correlated with the error term in the main equation. In line with Asongu (2011), the Two-Stage-Least-Squares (TSLS) estimation method adopted by this study will entail the following steps.

First-stage regression:

$$NODA_{it} = \gamma_0 + \gamma_1(\text{legalorigin})_i + \gamma_2(\text{religion})_i + \gamma_3(\text{incomelevel})_i + \alpha iX_{it} + v_{it} \quad (1)$$

Second-stage regression:

$$\text{Growth}_{it} = \beta_0 + \beta_1(NODA)_{it} + \delta iX_{it} + \mu_{it} \quad (2)$$

NODA stands for Net Official Development Assistance (Total NODA, NODA from Multilateral donors and NODA from DAC countries). Instrumental variables are legal-origins, dominant-religions and income-levels. Growth stands for economic prosperity (at aggregate and per capita levels) and human development. In Eq. (1), the NODA dynamics are regressed on the instruments and the fitted values are used as regressors in the second-stage regressions (Eq. 2). In the two equations,  $X$  is a set of control variables. For the first and second equations,  $v$  and  $\mu$  respectively denote the disturbance terms.  $\gamma_1$ ,  $\gamma_2$ ,  $\gamma_3$  are the respective effects of legal origin, religious domination and income-levels on NODA, while  $\alpha i$  is the incidence of the control variables on NODA.  $\beta_1$  and  $\delta i$  represent the impact of NODA and the control variables on development dynamics respectively.

We adopt the following steps in the analysis:

- justify the choice of a TSLS over an OLS estimation technique with the Hausman-test for endogeneity;
- show that the instruments are exogenous to the endogenous components of explaining variables (aid channels), conditional on other covariates (control variables);
- ensure the instruments are valid and not correlated with the error-term in the main equation with an Over-identifying Restrictions (OIR) test.

### *Robustness Checks*

To ensure robustness in the analysis, the following checks will be carried-out: (1) usage of alternative indicators of aid; (2) employment of two distinct

interchangeable sets of moment conditions that encompass every category of the instruments; (3) usage of alternative indicators of growth and development; (4) account for the concern of endogeneity and; (5) regressions under both restricted and unrestricted hypotheses.

## Empirical Analysis

This section addresses the ability of the exogenous components of NODA dynamics to account for differences in human development, GDP growth and GDP per capita growth; the ability of the instruments to explain variations in the endogenous components of NODA dynamics and the possibility of the instruments to account for growth and human development beyond NODA dynamic channels. To make these assessments, we use the panel TSLS-IV estimation method with legal-origins, income-levels, and religious-dominations as instrumental variables.

### Development Assistance and Instruments

Table 2 below assesses the validity of the instruments in explaining cross-country differences in NODA dynamics.

Clearly, it could be observed that distinguishing African countries by legal-origins, income levels and religious-dominations help explain cross-country differences in NODA. Based on the Fisher-test, the instruments taken together enter significantly in all regressions at the 1 % significance level. Broadly the following findings could be established. (1) Christian-dominant countries have received more aid than their Islam-oriented counterparts. (2) Consistent with economic theory, low-income countries are prone to more aid than middle-income countries. The control variables are significant with the expected signs as development aid increases with population growth and decreases with improvement in regulation quality (which ensures better management and distribution of national wealth).

### Human Development, Growth and Development Assistance

Table 3 investigates two main issues: (1) the ability of the NODA channels to account for development dynamics and, (2) the possibility of the instrumental variables explaining development dynamics beyond NODA channels. Whereas we address the first issue by assessing the significance of estimated coefficients, the second is investigated with the Cragg-Donald and Sargan-OIR tests for instrument strength and validity respectively. The null hypothesis of the Sargan test is the view that the instruments account for development dynamics only through NODA channels. Thus a rejection of the null hypothesis is the rejection of the view that the instruments explain development dynamics through no other mechanisms than NODA channels. The null hypothesis of Cragg-Donald test is the stance that the instruments are weak; thus its rejection points to the strength of the instruments at first-stage regressions. The

**Table 2** First-stage regressions

		Net Official Development Assistance (NODA)					
		NODAgdp		NODAMDgdp		NODADACgdp	
		1st Set	2nd Set	1st Set	2nd Set	1st Set	2nd Set
Instruments	Constant	3.675*	-1.244	1.835**	-1.237*	1.794	0.007
		(1.889)	(-0.740)	(2.271)	(-1.771)	(1.381)	(0.006)
	English	1.009	—	0.677	—	0.294	—
		(0.928)		(1.500)		(0.405)	
	French	—	-1.009	—	-0.677	—	-0.294
			(-0.928)		(-1.500)		(-0.405)
	Christianity	2.084*	—	0.081	—	2.051***	—
		(1.901)		(0.178)		(2.801)	
	Islam	—	-2.084*	—	-0.081	—	-2.051***
			(-1.901)		(-0.178)		(-2.801)
L. Income	—	8.014***	—	3.831***	—	4.132***	
		(6.102)		(7.022)		(4.710)	
M. Income	-9.093***	—	-4.112***	—	-4.924***	—	
	(-6.051)		(-6.587)		(-4.905)		
LMIncome	1.079	—	0.281	—	0.792	—	
	(0.674)		(0.422)		(0.740)		
UMIncome	—	-1.079	—	-0.281	—	-0.792	
		(-0.674)		(-0.422)		(-0.740)	
Control Variables	Popg	3.342***	3.342***	1.559***	1.559***	1.755***	1.755***
		(5.784)	(5.784)	(6.496)	(6.496)	(4.548)	(4.548)
	Regulation	-2.377***	-2.377***	-0.739**	-0.739**	-1.625***	-1.625***
		(-2.811)	(-2.811)	(-2.106)	(-2.106)	(-2.877)	(-2.877)
Adjusted R <sup>2</sup>	0.257	0.257	0.285	0.285	0.193	0.193	
Fisher Statistics	32.845***	32.845***	37.627***	37.627***	22.922***	22.922***	
Observations	551	551	551	551	551	551	

*L* Low, *LM* Lower Middle, *UM* Upper Middle, *Ivt* Investment, *Pop* population. \*, \*\*, \*\*\*: significance levels of 10, 5 and 1 % respectively. NODAgdp: NODA on GDP. NODAMDgdp: NODA from Multilateral Donors on GDP. NODADACgdp: NODA from DAC countries on GDP. Student statistics ratios in brackets. 1st Set: First Set of Instruments. 2nd Set: Second Set of Instruments

Hausman-test for endogeneity precedes the IV regressions and thus justifies the choice of the estimation technique. The null hypothesis of this test is the position that OLS estimates are efficient and consistent. Therefore a rejection of the null hypothesis points to the issue of reverse causality (endogeneity) we have elucidated earlier (see Section 3.2.1) and hence lends credit to the choice of a TSLS-IV estimation technique. Otherwise we model by OLS. For robustness purposes, results are replicated using an alternative set of instrumental

Table 3 Unrestricted Two Stage Least Squares

	Human Development		GDP growth		GDP per capita growth	
Constant	5.530 (1.294)	5.295 (1.269)	-1.832 (-0.537)	-1.906 (-0.555)	-2.214 (-0.712)	-2.208 (-0.715)
NODAgdp	-0.172** (-2.036)	-	-0.105* (-1.862)	-	-0.170*** (-3.305)	-
NODAMDgdp	-	-0.423** (-2.062)	-	-0.234* (-1.829)	-	-0.378*** (-3.251)
NODADACgdp	-	-	-	-0.188* (-1.852)	-	-
Democracy	1.217*** (4.845)	1.218*** (4.871)	0.023 (0.107)	0.013 (0.060)	0.080 (0.405)	0.109 (0.566)
Public Investment	-0.780 (-1.350)	-0.755 (-1.326)	1.000** (2.343)	1.019** (2.371)	0.788** (2.025)	0.756* (1.953)
Hausman-test	35.241***	35.115***	14.624***	13.638***	19.129***	19.98***
OIR-Sargan test	1.286 [0.256]	1.231 [0.267]	0.042 [0.836]	0.000 [0.994]	0.186 [0.665]	0.789 [0.789]
P-value	3.020	3.016	3.719	3.780	3.719	3.645
Cragg-Donald	0.052	0.053	0.010	0.009	0.016	0.016
Adjusted R <sup>2</sup>	10.827***	10.957***	3.723**	3.652**	6.581***	6.529***
Fisher Statistics	447	447	584	584	584	584
Observations	447	447	584	584	584	584
First-Set of Instruments	Constant; English; Christianity; Middle Income; Lower Middle Income					
Second-Set of Instruments	Constant; French; Islam; Lower Income; Upper Middle Income					

\*, \*\*, \*\*\*: significance levels of 10, 5 and 1 % respectively. []: z-statistics. []: p-values corresponding to OIR-Sargan test. OIR: Overidentifying Restrictions test. NODAgdp: NODA on GDP. NODAMDgdp: NODA from Multilateral Donors on GDP. NODADACgdp: NODA from DAC countries on GDP

variables, as shown towards the end of Table 3. In the unrestricted regressions of Table 3, the null hypothesis of the Hausman-test is rejected for all the regressions; confirming the presence of endogeneity and hence the choice of the TSLS-IV approach.

With regard to the first concern which is addressed by the significance of estimated coefficients, it can firmly be established that NODA dynamics significantly decrease development and growth in Africa. The negative effect is strongest for aid from multilateral donors. These results are broadly consistent with the aid-development literature on developing countries (Boone, 1996; Reichel, 1995; Ghura et al., 1995; Pedersen, 1996).

As concerns the second-issue, failure to reject the null hypothesis of the OIR test in all regressions indicates that the instruments do not explain development dynamics through other mechanisms beyond NODA channels. Thus the instruments are valid and not correlated with the error term in the main equation; the instruments do not suffer from endogeneity. The control variables are significant with the right signs since democracy and public investment improve growth and human development. The analysis in Table 3 is replicated with the second-set of instruments for robustness in the results.

Table 4 below presents restricted TSLS results. First and foremost, the results for the Hausman-test confirm the choice of our estimation approach. Results of the Cragg-Donald and Sargan-OIR tests confirm the strength and validity of the instruments respectively. While the null hypothesis for weak instrument is rejected (the relative bias is probably less than 5 % since the critical value for TSLS bias over OLS is 9.53), the alternative hypothesis of the Sargan-OIR test is rejected. Broadly, findings based on restricted regressions confirm those in Table 3 even after they are replicated with an alternative set of instruments. In substance, both the endogenous regressors and control variables are significant with the right signs.

Consistent with Andrés and Asongu (2013), the models are comparable because they have the same specifications. Hence, it will be interesting to also discuss differences in the magnitude of the estimated coefficients. The negative incidence of NODA is higher for aid from multilateral donors, than for aid from DAC countries. This finding is consistent across development dynamics and specifications (restricted or unrestricted). Two explanations could be provided for these differences in magnitude. Firstly, the weight of ‘negative aid effects’ over ‘positive aid effects’ is highest in development assistance from multilateral donors, followed by aid from DAC countries and tailed by total NODA. Secondly, development assistance that transits through multilateral agencies may go through a lot of bureaucracy (with the increased risks of corruption and delay in timely execution) that entail substantial administrative costs which ultimately reduced its intended positive effects.

The conventional diagnostic tests have been taken into account because the estimation procedure has used: (1) a correlation analysis to mitigate multicollinearity and overparametrisation issues; (2) a Hausman test to assess evidence of endogeneity; (3) Cragg-Donald and Sargan OIR tests to assess instrument strength and validity respectively and; (4) restricted and unrestricted modeling hypotheses.

Table 4 Restricted Two Stage Least Squares

	Human Development	GDP growth	GDP per capita growth
NODAgdp	-0.107 (-1.589)	-0.116** (-2.348)	-0.184*** (-4.041)
NODAMDgdp	-0.274* (-1.645)	-0.260** (-2.323)	-0.410*** (-3.993)
NODADAgdp	-	-0.175 (-1.535)	-0.208** (-2.329)
Democracy	1.118*** (4.714)	1.119*** (4.688)	0.040 (0.221)
Public Investment	-0.056 (-0.394)	-0.059 (-0.409)	0.520*** (5.263)
Hausman-test	59.718***	58.845***	22.303***
OIR-Sargan test	3.009	3.111	0.765
P-value	[0.222]	[0.211]	[0.682]
Cragg-Donald	15.651**	15.289**	17.469**
Adjusted R <sup>2</sup>	0.024	0.022	0.017
Fisher Statistics	16.329***	16.082***	27.897***
Observations	447	447	584
First-Set of Instruments	Constant; English; Christianity; Middle Income; Lower Middle Income		
Second-Set of Instruments	Constant; French; Islam; Lower Income; Upper Middle Income		

\*, \*\*, \*\*\*: significance levels of 10, 5 and 1 % respectively. ( ): z-statistics. [ ]: p-values corresponding to OIR-Sargan test. OIR: Overidentifying Restrictions test. For the Cragg-Donald statistics the relative bias is probably less than 5 % since the critical value for TSLS bias over OLS is 9.53. NODAgdp: NODA on GDP. NODAMDgdp: NODA from Multilateral Donors on GDP. NODADAgdp: NODA from DAC countries on GDP



### Further Discussion, Policy Implications and Caveats

Before engaging in the discussion of the findings, it is relevant to highlight the intuition motivating the term ‘questionable economics’. A great chunk of development assistance is intended directly or indirectly to boost prosperity at overall economic or per capita income levels. This can be qualified as the ‘economics of development assistance’. Within the framework of our study, any suggestion (theoretical or empirical) to the contrary of the intuition can also logically be termed ‘questionable economics’.

Findings in this paper do not provide grounds for the hope that Western aid can save Africa. Perhaps current views on the roots of poverty in Africa are too simplistic and attempts to change these root causes have underestimated the difficulty of doing so from the outside. The failure of the West’s attempted rescue through aid does not necessarily imply a disastrous outlook for Africa. Africans on their own will have to achieve economic and political changes that promote African economic development and some of these changes are already on course (such as the movement towards freer markets and the expansion of democracy). There are therefore hopeful signs of the growth of enterprise in Africa. The explosion of cell phones for example has enabled Africa edge the phase of fixed phones in the development process. Economic development in Africa depends on African private sector entrepreneurs, African civic activists and African political reformers... not on what ineffective, unaccountable, bureaucratic, poorly informed and unmotivated outsiders do.

So if anything, what can the West do for Africa? Just because the West cannot save Africa does not logically imply there is nothing the rich countries can do for the African continent. The evidence in the literature (Easterly, 2005a) suggests that aid has been more successful at delivering tangible outcomes like education, health and water. The micro development literature using randomized controlled trials also finds positive effects of some specific development interventions from foreign aid. In a nutshell the West cannot save Africa, but foreign aid can still be beneficial to recipient countries in a piecemeal way to alleviate the sufferings of those desperately poor.

More modest goals from aid in Africa would make it easier to hold aid agencies accountable for the results of aid-targeted projects. The sweeping ambitions of the current Western aid efforts in Africa do not lend themselves to accountability, since (for the most part) the outcome depends on many other factors beside aid agency efforts and attempts to isolate the effects of these efforts have proved fruitless. More accountable agencies might be encouraged to make more progress on piecemeal interventions. These modest goals would render the West much less intrusive in Africa, thus ending the historical tendency towards ever-increasing escalation of Western interventions in the continent. This could be an appealing prospect because the intrusive Western role has made African governments accountable to external actors instead of their own citizens. It follows that insiders have better information and incentives to solve their own problems than outsiders do. Arguably, local democracy that eases citizen feedback has proven to be a more effective vehicle for good government than outside pressure. On a final note, the more intrusive large-

scale interventions have lots of unintended consequences that are hard to evaluate, many of which could be detrimental.

The negative nexuses between foreign aid and development dynamics could also be traceable to how politics influences the allocation and results of aid. Accordingly, aid supplies are substantially conditioned on the willingness of recipients to accede to aid conditions and the political motivations of donor states. A political economy perspective of aid is really crucial in understanding our findings because intensions of aid are products of culture, institutions, power distribution and the dynamics of competitive interests (Schraeder et al., 1998; Hopkins, 2000). Aid is the outcome of bargaining in a kind of political market made up of donor aid bureaucracies, multilateral aid agencies and recipient government officials. Indeed donors pursue multiple goals and these vary over time. For instance, economic gains seem important in Japanese aid, global welfare improvement in Nordic aid and political goals in French aid. Hence, few would object to the inference that our findings may also be explained by a motivation of the French to maintain their colonial legacies and influence in Africa. These results on the questionable effects are broadly consistent with recent development literature (Marglin, 2013; Wamboye et al., 2013; Titumir and Kamal, 2013; Banuri, 2013; Ghosh, 2013; Krause, 2013; Monni and Spaventa, 2013). Indeed the position of Amin (2014) on the possibility of neocolonialism governing grand aid is broadly in line with Ndlovu-Gatsheni (2013) on the entrapment of Africa within the global colonial matrices of power or Kindiki (2011) on the need for African countries to strategically overcome dependence on international regimes. Amin has further reiterated that development cannot be reduced to the Washington consensus and what donors think is good for Africa. According to the author, it should be a holistic process that clearly articulates what Africans desire (Obeng-Odoom, 2013).

This is evident because until the nineties, cold war concerns provided a core motivation for aid. Recipient states did not fail because it was in the interest of the cold war combatants that they did not fail since development was a secondary concern. Hence, rent-seeking elites were not obliged to account to donors for aid effectiveness. It is therefore not surprising that after the cold war, states once propped-up by strategically motivated aid are now openly failing. Some analysis blame this failure on donor governments, pointing out they had undercut development results by giving priority to other donor state purposes, particularly political and commercial interests.

Imperialism and neocolonialism dominated the agenda on vested donor interests. Accordingly, donors have sought to increase influence for each aid dollar. Except for the rapidly growing countries in Asia, recipients (especially African states) have moved towards offering more concessions to donor preferences. For instance, the ease with which Egypt resisted aid and policy pressures from the West in the 1960s is over. Especially in the African continent, recipient countries have become supplicants, trotting out a range of projects in the hope to capture aid (Lancaster, 1999; Hopkins, 2000). Hence,

donors (especially former colonial powers) can bargain for more influence. They can now ask for higher policy standards for their money and what they demand often does not necessarily advance the economics of development assistance. For example, a recent decision by the British and USA governments to cut aid to certain African countries because of anti-gay laws explains this point in a nut shell.

Before concluding, we devote space to discuss the caveats of the paper. Firstly, the assertion to refute the Masud and Yontcheva (2005) claim documented in the data section may not be enough. Minou and Reddy (2010) have decomposed aid into developmental assistance and non-developmental assistance and found that the former has a positive impact on growth. However it should be noted that, we have only partially dismissed the Masud & Yontcheva claim. Secondly, the generalization of our findings to every dimension of development assistance should be treated with caution. We have only provided a global macroeconomic assessment of the incidence of aid on development dynamics. The overall negative incidence could be the result of the weight of ‘negative aid effects’ on ‘positive aid effects’. Hence, the findings by no means indicate that foreign aid is perilous from all standpoints. For instance, we have documented evidence in the literature where-by, foreign aid has been instrumental in the domains of education, health and infrastructure. More so, from common sense, emergency relief aid in times of natural disasters is logically positive. A critical dimension of this caveat is the need for significant income transfers from rich countries to poor countries to cope with the effects of global warming.

## Conclusion

Past research on the African aid-growth (development) nexus has been based on data collected before the year 2000 and mostly focused on growth. Literature investigating the effect of aid on human development presents the shortcoming of using an index that is unadjusted for inequality. This paper has used more updated data (1996–2010) and the Inequality adjusted Human Development Index first published in 2010 to complement existing literature. The findings broadly indicate that development assistance is detrimental to GDP growth, GDP per capita growth and human development. Given concerns on the achievement of the MDGs, the relevance of these results point to the deficiency of foreign aid as a sustainable cure to poverty in Africa.

Perhaps the success of action in society depends on more particular facts than anyone can possibly know. As Hayek (1988, p. 76) suggested “*the curious task in economics is to demonstrate to men how little they know about what they imagine they can design*”. The escalation of Western interventions in Africa demonstrates arrogance in the face of very imperfect knowledge. Once economists discard arrogance, there is hope to hold donors accountable for such piecemeal outcomes as well-maintained roads, medicines, water supply,

textbooks and nutritional supplements to improve the wellbeing of the poorest people in the world. It is thus momentous time to solve the second tragedy of foreign aid; it is time for economists and policy makers to start rethinking the models and theories on which foreign aid is based. In the meantime, it is up to people who care about the poor to hold aid agencies accountable for results.

Though the stated intents or purposes of aid are socio-economic, the actual impact from the findings negates this. A potential solution to aid dependence is the development of alternative sources of finance through calculated access to foreign direct investment (openness consistent with economic fundamentals) or development of market-based domestic financial systems capable of generating resources for industrialization and long-term development. Caveats have been discussed.

**Acknowledgment** The author is highly indebted to the editor and referees for their constructive comments.

## Appendix 1

**Table 5** Summary statistics

	Variables	Mean	S.D	Min.	Max.	Observations
Development Assistance	Net Development Assistance(NODA)	10.811	12.774	-0.251	148.30	704
	NODA from Multilateral Donors	4.481	5.512	-1.985	64.097	704
	NODA from DAC countries	6.244	8.072	-0.679	97.236	704
Growth & Development	Human Development	1.351	6.341	0.127	47.486	551
	GDP growth	4.822	7.351	-31.30	106.28	744
	GDP per capita growth	2.380	6.754	-33.07	90.140	753
Control Variables	Population growth	2.359	1.015	-1.081	10.043	780
	Regulation Quality	-0.673	0.673	-2.729	0.905	620
	Democracy	2.307	4.089	-8.000	10.000	735
Instrumental Variables	Public Investment	7.489	4.535	0.000	39.984	641
	English Common-Law	0.384	0.486	0.000	1.000	780
	French Civil-Law	0.615	0.486	0.000	1.000	780
	Christianity	0.634	0.481	0.000	1.000	780
	Islam	0.365	0.481	0.000	1.000	780
	Low Income	0.576	0.494	0.000	1.000	780
	Middle Income	0.423	0.494	0.000	1.000	780
	Lower Middle Income	0.230	0.421	0.000	1.000	780
Upper Middle Income	0.192	0.394	0.000	1.000	780	

*S.D* Standard Deviation, *Min* Minimum, *Max* Maximum

**Appendix 2**

**Table 6** Correlation analysis

Growth and Development		Development Assistance				Control Variables				Instrumental Variables								
HDI	GDPg	GDPpeg	TA	MLD	DAC	Pogp	Reg	Demo	Publ	Eng.	Frch.	Chris	Islam	LI	MI	LMI	UMI	
1.000	-0.026	-0.025	-0.072	-0.079	-0.060	-0.014	0.160	0.131	-0.151	0.185	-0.185	0.101	-0.101	-0.101	0.089	-0.081	0.231	
	1.000	0.987	0.053	0.073	0.034	0.335	0.058	0.059	0.117	-0.002	0.002	0.029	-0.029	-0.052	0.052	-0.000	0.067	
		1.000	0.000	0.013	-0.008	0.187	0.106	0.075	0.115	0.013	-0.013	0.030	-0.030	-0.125	0.125	0.034	0.122	
			1.000	0.900	0.955	0.368	-0.242	-0.031	0.195	-0.050	0.050	0.058	-0.058	0.450	-0.450	-0.265	-0.281	
				1.000	0.733	0.400	-0.220	0.011	0.220	-0.035	0.035	-0.006	0.006	0.475	-0.475	-0.284	-0.293	
					1.000	0.304	-0.230	-0.056	0.141	-0.056	0.056	0.098	-0.098	0.382	-0.382	-0.222	-0.242	
						1.000	-0.195	-0.063	0.043	-0.107	0.107	0.008	-0.008	0.425	-0.425	-0.222	-0.296	
							1.000	0.519	0.078	0.134	-0.134	0.077	-0.077	-0.274	-0.274	0.106	0.231	
								1.000	0.147	0.177	-0.177	0.163	-0.163	-0.034	0.034	-0.162	0.228	
									1.000	-0.138	0.138	0.008	-0.008	-0.049	0.049	0.002	0.059	
										1.000	-1.000	0.189	-0.189	-0.043	0.043	-0.057	0.115	
											1.000	-0.189	0.189	0.043	-0.043	0.057	-0.115	
												1.000	-1.000	-0.003	0.003	-0.153	0.167	
													1.000	0.003	-0.003	0.153	-0.167	
														1.000	-1.000	-0.639	-0.569	
															1.000	0.639	0.569	
																1.000	-0.267	
																	1.000	UMI

*HDI* Human Development Index, *GDPg* GDP growth, *GDPpeg* GDP per capita growth, *TA* Total development assistance, *MLD* Development Assistance from Multilateral Donors, *DAC* Development Assistance Committee, *Pogp* Population growth, *Reg* Regulation quality, *Demo* Democracy, *Publ* Public Investment, *Eng* English Common-Law, *Frch* French Civil-Law, *Chris* Christian Religion, *LI* Low Income, *MI* Middle Income, *LMI* Lower Middle Income, *UMI* Upper Middle Income

## Appendix 3

**Table 7** Variable Definitions

Variables	Signs	Variable Definitions	Sources
Net Development Assistance (NODA)	NODAgdp	NODA (% of GDP)	World Bank (WDI)
NODA from Multilateral Donors	NODAMDgdp	NODAMDgdp (% of GDP)	World Bank (WDI)
NODA from DAC Donors	NODADACgdp	NODADACgdp (% of GDP)	World Bank (WDI)
Human Development	HDI	Human Development Index	World Bank (WDI)
GDP Growth	GDPg	GDP Growth (annual %)	World Bank (WDI)
GDP Per Capita Growth	GDPpcg	GDP Per Capita Growth (annual %)	World Bank (WDI)
Regulation Quality	R.Q	Regulation Quality (estimate)	World Bank (WDI)
Population growth	Popg	Average annual population growth rate	World Bank (WDI)
Democracy	Demo	Level of Institutionalized Democracy	World Bank (WDI)
Public Investment	PubI	Gross Public Investment (% of GDP)	World Bank (WDI)

*WDI* World Bank Development Indicators, *DAC* Development Assistance Committee

## Appendix 4

**Table 8** Presentation of countries

Instruments	Instrument Category	Countries	Num.
Legal-origins	English Common-Law	Botswana, The Gambia, Ghana, Kenya, Lesotho, Liberia, Malawi, Mauritius, Namibia, Nigeria, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Uganda, Zambia, Tanzania, Zimbabwe.	20
	French Civil-Law	Algeria, Angola, Benin, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Congo Republic, Congo Democratic Republic, Djibouti, Egypt, Eritrea, Equatorial Guinea, Ivory Coast, Ethiopia, Gabon, Guinea, Guinea-Bissau, Libya, Madagascar, Mali, Mauritania, Morocco, Mozambique, Niger, Rwanda, Sao Tome & Principe, Senegal, Togo, Tunisia.	32
Religions	Christianity	Angola, Benin, Botswana, Burundi, Cameroon, Cape Verde, Central African Republic, Congo Republic, Congo Democratic Republic, Ivory Coast, Equatorial Guinea, Ethiopia, Eritrea, Gabon, Ghana,	33

**Table 8** (continued)

Instruments	Instrument Category	Countries	Num.
		Kenya, Lesotho, Liberia, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Rwanda, Seychelles, Sao Tome & Principe, South Africa, Swaziland, Togo, Uganda, Zambia, Tanzania, Zimbabwe.	
	Islam	Algeria, Burkina Faso, Chad, Djibouti, The Gambia, Egypt, Guinea-Bissau, Guinea, Libya, Mali, Mauritania, Morocco, Niger, Nigeria, Senegal, Sierra Leone, Somalia, Sudan, Tunisia.	19
Income Levels	Low Income	Benin, Burkina Faso, Burundi, Central African Republic, Chad, Congo Republic, Congo Democratic Republic, Djibouti, Ethiopia, Eritrea, The Gambia, Ghana, Guinea-Bissau, Guinea, Kenya, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Rwanda, Sierra Leone, Somalia, Togo, Uganda, Zambia, Tanzania, Zimbabwe.	30
	Middle Income	Algeria, Angola, Botswana, Cameroon, Cape Verde, Egypt, Ivory Coast, Equatorial Guinea, Gabon, Lesotho, Libya, Mauritius, Morocco, Namibia, Nigeria, Senegal, Seychelles, Sao Tome & Principe, South Africa, Sudan, Swaziland, Tunisia.	22
	Lower Middle Income	Angola, Cameroon, Cape Verde, Egypt, Ivory Coast, Lesotho, Morocco, Nigeria, Sudan, Swaziland, Tunisia.	11
	Upper Middle Income	Algeria, Botswana, Equatorial Guinea, Gabon, Libya, Mauritius, Namibia, Sao Tome & Principe, Seychelles, South Africa.	10

Num: Number of countries

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