On the effectiveness of foreign aid in institutional quality

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8 February 2013

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Abstract

We extend the Okada & Samreth (2012, EL) and Asongu (2012, EB) debate on 'the effect of foreign aid on corruption' by: not partially negating the former's methodological underpinning (as in the latter's approach) with a unifying empirical framework and; broadening the horizon of inquiry from corruption to eight institutional quality dynamics (rule of law, regulation quality, government effectiveness, democracy, corruption, voice & accountability, control of corruption and political stability). Core to this extension is a hypothetical contingency of the 'institutional perils of foreign aid' on existing institutional quality such that, the institutional downside of development assistance maybe questionable when greater domestic institutional development has taken place. Based on the hypothesis of institutional thresholds for foreign aid effectiveness, the perilous character of development assistance to institutional quality is broadly confirmed in 53 African countries for the period 1996-2010.

JEL Classification: B20; F35; F50; O10; O55
Keywords: Foreign Aid; Political Economy; Development; Africa

1. Introduction

The Okada & Samreth (2012) and Asongu (2012a) debate on 'the effect of foreign aid on corruption' has had an important influence in policy and academic circles. This paper is an extension of the debate without partially negating the former's methodological underpinning as in the latter's approach. The prime motivation for this extension is the possibility that, the effectiveness of foreign aid could be contingent on institutional thresholds, such that countries with higher initial levels of institutional quality are affected differently in comparison to their counterparts with lower initial levels of institutional quality. Though not in substance, yet in form, this hypothesis is the methodological underpinning of Okada & Samreth that is partially neglected by Asongu. In light of this development, policy makers should be curious to know how the results of Asongu may change if the context were examined with the methodological underpinnings of Okada & Samreth. Put in plainer terms; are the institutional perils of foreign aid questionable when greater domestic institutional development has taken place? An answer to the question also unites two important strands in the aid-institutions nexus literature.

From the interesting literature on aid and institutions, the debate has centered around three main questions. Firstly, do donors allocate more to poor countries with better institutions? Secondly, does foreign aid induce better or worse institutional quality? Thirdly, how do outsiders engineer a transition from the present state of informal institutions towards more formal institutional settings via foreign aid? The first strand of the debate is relevant because donors have widely supposed that aid would be more effective in countries with better institutions. Accordingly, the answer to the first concern also affects the response to the second. Hence, if donors give more aid to countries with better institutions, this would create an incentive for reformers in the recipient country to adapt to better institutions. A considerable bulk of the literature has found no evidence that democracies or less corrupt states are rewarded with more development assistance (Alesina & Dollar, 2000; Alesina & Weder, 2002). On the second question, a substantial chunk of the literature has pointed to the institutional (Knack, 2001; Asongu, 2012a) and democratic (Djankov et al., 2005) perils of foreign-aid, especially in ethnically fractionalized states (Svensson, 2000). Lastly, there is the challenging third question (strand) about how aid would practically go about changing institutions in the interest of developing recipient countries. Accordingly, the transition from informal to formal institutions is somehow complex and attempts by Western aid agencies to introduce top-down formal institutions have not fared well in the complicated maze of bottom-up arrangements. To this third concern, Dixit (2004) has presented an interesting argument as to how introducing rule-based institutions could actually make things worse, as they create outside opportunities for members of relationship-based networks[1].

Cognizant of the above, this paper contributes to existing literature by examining the Okada & Samreth (2012) and Asongu (2012a) debate in light of the last two strands (questions) within the same empirical framework. In adding some empirical structure to the issues raised, the present study provides answers to the following questions. Are the institutional perils of development-assistance contingent on existing institutional quality (second strand)? At what institutional thresholds is foreign-aid effective in improving institutional quality (third strand)? Are the institutional perils of foreign-aid questionable when greater domestic institutional development has taken place (second and third strands)? This study also contributes to existing literature by cutting adrift the mainstream approach to the debate that does not incorporate all dimensions of institutional quality. Accordingly, the Okada & Samreth (2012) and Asongu (2012a) debate lack a unifying framework that explores the most quantifiable government quality

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

indicators currently available. To bridge this gap, we provide an exhaustive assessment with eight institutional quality dynamics (rule of law, regulation quality, voice & accountability, government effectiveness, corruption, political stability, corruption-control and democracy)[2].

The rest of the paper is organized as follows. Measurement and methodology issues are discussed in Section 2. Empirical analysis is covered in Section 3. We conclude with Section 4.

2. Data and Methodology

2.1 Data

We examine a panel of 53 African countries for the period 1996-2010 with data from African Development Indicators (ADI) of the World Bank (WB), Transparency International and La Porta et al., (2008, p. 289)[3]. Variable definitions and corresponding sources are presented in Appendix 3. Institutional quality dependent variables include: rule of law, regulation quality, corruption-control, voice & accountability, government-effectiveness, political stability (or no violence), corruption and democracy. The exogenous variable of interest is Net Official Development Assistance (NODA). For robustness purposes we use three different NODA indicators: Total NODA; NODA from the Development Assistance Committee (DAC) countries; and NODA from Multilateral Donors. While the first is used in the empirical section, the last two have been used for robustness checks. Borrowing from the literature on the determinants of institutional quality, we control for foreign investment, trade, per capita economic prosperity and public investment (Goel & Nelson, 2005; Lambsdorff, 2006). We also control for the unobserved heterogeneity by employing dummies for low-income, English common-law and landlocked countries. Landlocked countries are inherently less developed (François & Manchin, 2006). English Common law countries have higher levels of institutional quality in Africa (Asongu, 2011; Asongu, 2012b, p. 190). Also, government quality in Africa increases with income levels (Asongu, 2012b, p. 190).

Details about the descriptive statistics (with presentation of countries), correlation analysis (showing the relationships between key variables used in the paper), and variable definitions are presented in the appendices. The 'summary statistics' (Panel A of Appendix 1) of the variables used in the panel regressions shows that there is quite some variation in the data utilized so that one should be confident that reasonable estimated nexuses would emerge. Countries making-up the panel are presented in Panel B of Appendix 1. The purpose of the correlation matrix (Appendix 2) is to address issues resulting from overparametization and multicolinearity. Based on a preliminary assessment of the correlation coefficients, there do not appear to be any serious concerns in terms of the relationships to be estimated.

2.2 Methodology

Consistent with recent literature (Billger & Goel, 2009; Okada & Samreth, 2012; Asongu, 2013), to determine whether existing levels of institutional dynamics affect how development assistance comes into play, we use quantile regression. This approach permits us to assess if the relationship among institutional dynamics and foreign-aid differs throughout the distributions of institutional dynamics (Koenker & Hallock, 2001). Thus, based on this estimation technique we

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

[3] It should be noted that this time span is consistent with those employed by Okada & Samreth (2012) and Asongu (2012a). While the former have use data on 120 developing countries for the period 1995-2009, the latter has used data on 52 African countries for the period 1996-2010.

are able to carefully examine the incidence of development assistance throughout the conditional distribution with particular emphasis on countries with the best and worst institutions. Quantile regression (hence QR) yields parameters estimated at multiple points in the conditional distribution of the dependent variable (Koenker & Bassett, 1978). Accordingly, the θth quantile estimator of the endogenous variable is obtained by solving for the following optimization problem.

$$\min_{\beta \in R^k} \left[\sum_{i \in \{i: y_i \geq x_i'\beta\}} \theta \left| y_i - x_i'\beta \right| + \sum_{i \in \{i: y_i \geq x_i'\beta\}} (1-\theta) \left| y_i - x_i'\beta \right| \right] \quad (1)$$

Where θ is in the '0 and 1' interval. Contrary to OLS that is based on minimizing the sum of squared residuals, with QR we minimize the weighted sum of absolute deviations. For example the 10th or 75th quantiles (with θ=0.10 or 0.75 respectively) by approximately weighing the residuals. The conditional quantile of y_i given x_i is:

$$Q_y(\theta / x_i) = x_i'\beta_\theta \quad (2)$$

where unique slope parameters are derived for each θth quantile of interest. This formulation is analogous to $E(y / x) = x_i'\beta$ in the OLS slope though parameters are estimated only at the mean of the conditional distribution of the endogenous variable. For the model in Eq. (2) the dependent variable y_i is an institutional quality indicator while x_i contains a constant term, foreign-aid, foreign investment, trade, per capita economic prosperity, public investment and fixed effects (low-income, English common law and landlocked countries).

3. Empirical analysis

3.1 Presentation of results

The results presented in Tables 2-3 include OLS and QR estimates. OLS estimates provide a baseline of mean effects and we compare these to estimates of separate quantiles in the conditional distributions of the institutional dynamic dependent variables. In the interpretation of estimated coefficients, it is worth noting that smaller values (in conditional distributions) of the dependent variables denote less institutional quality (in terms of democracy, rule of law, regulation quality, government effectiveness, corruption, political stability, voice & accountability and corruption-control). Table 2 shows results for the rule of law, regulation quality, government effectiveness and political stability regressions while Table 3 reports those of voice & accountability, democracy, corruption and corruption-control.

Table 1 below summarizes the foreign-aid effects on institutional development based on findings in Tables 2-3. The motivation for this summary is to synthesize the potential incidence of foreign-aid on institutional development when existing government-quality dynamics matter. Based on the summary of results, it could be concluded that, but for a thin exception (lowest quantile of voice & accountability) foreign aid broadly mitigates institutional quality. The positive incidence on voice & accountability could be attributed to the strict accounting standards required by donor organizations in recipient countries with inherently very low accountability standards. Most of the control variables are significant with the right signs. Landlocked countries inherently have lower levels of development (François & Manchin, 2006). English Common law countries have higher levels of institutional quality in Africa (Asongu, 2011; Asongu, 2012b, p. 190). Government quality in Africa also increases with income levels (Asongu, 2012b, p. 190). The OLS findings are also broadly consistent with the negative incidence of foreign aid on institutional quality.

Table 1: Summary of results (foreign-aid effectiveness in institutional development)

Q 0.1	Q 0.25	Q 0.50	Q 0.75	Q 0.90	Q 0.1	Q 0.25	Q 0.50	Q 0.75	Q 0.90
Rule of Law					**Regulation Quality**				
-0.005*	**-0.008****	**-0.012***	**-0.011***	-0.007	**-0.014*****	**-0.022*****	**-0.019*****	**-0.018*****	-0.012
Government Effectiveness					**Political Stability**				
-0.006*	**-0.013*****	-0.008	-0.009	-0.005	-0.004	0.001	-0.0003	-0.004	-0.006
Voice & Accountability					**Democracy**				
0.008*	0.006	0.002	-0.007	**-0.014****	**-0.207*****	-0.052	0.060	0.002	0.008
Corruption					**Control of Corruption**				
0.006	0.002	0.0007	-0.005	-0.011	-0.0008	-0.001	**-0.007****	-0.004	-0.008

*, **, ***, denote significance levels of 10%, 5% and 1% respectively. Lower quantiles (e.g., Q 0.1) signify nations where institutional quality is least.

3.2 Discussion

For more than half a century, the political economy of foreign-aid has been widely debated in academic and policy-making circles. A substantial literature on institutions and development suggests that, Africa is poor because it is deficient of good institutions: dictatorships, lack of property rights, weak courts and contract-enforcement, political instability, high corruption, violence and hostile regulatory environment for private business (Easterly, 2005; Kodila-Tedika, 2012a, 2012b, 2013a, 2013b). With respect to this strand, in order to end African poverty, the West needs to promote good institutions. In response to how foreign-aid might promote good institutions in aid-recipient countries, much of the literature has focused on how institutions matter in the effectiveness of foreign-aid (Alesina & Dollar, 2000; Alesina & Weder, 2002; Knack, 2001; Dixit, 2004; Djankov et al., 2005). This present paper has united two strands of the debate in light of the recent development from Okada & Samreth (2012) and Asongu (2012a).

From the available weight of empirical evidence (as summarized in Table 1 above), the following answers could be provided to the examined questions. But for a thin exception (voice and accountability in the lowest quantile), foreign-aid mitigates institutional development. The institutional perils of foreign-aid are not questionable when greater domestic institutional development has already taken place. Hence, the hypothesis that the institutional benefits of foreign aid are contingent on existing institutional levels in Africa is not valid. Drawing from the Okada & Samreth (2012) and Asongu (2012a) debate, it could be concluded that even without partially negating the former's methodological standpoint, foreign aid remain perilous to institution development in Africa. These findings are broadly consistent with the early strand of literature supporting the thesis of a negative aid-development nexus (Mosley, 1992; Reichel, 1995; Ghura, 1995; Boone, 1996; Pedersen, 1996).

Table 2: Rule of Law, Regulation Quality, Government Effectiveness and Political stability

	OLS	Q 0.1	Q 0.25	Q 0.50	Q 0.75	Q 0.90	OLS	Q 0.1	Q 0.25	Q 0.50	Q 0.75	Q 0.90
			Rule of Law						Regulation Quality			
Constant	**-0.755*** **	**-1.809*** **	**-1.199*** **	**-0.460*** **	**-0.266** **	-0.074	**-0.251*** **	**-1.432*** **	**-0.470*** **	0.083	0.121	0.252
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.047)**	(0.819)	**(0.000)**	**(0.000)**	**(0.000)**	(0.452)	(0.382)	(0.107)
Development Assistance	**-0.007***	**-0.005***	**-0.008** **	**-0.012***	**-0.011***	-0.007	**-0.017*** **	**-0.014*** **	**-0.022*** **	**-0.019*** **	**-0.018*** **	-0.012
	(0.068)	**(0.067)**	**(0.021)**	**(0.097)**	**(0.093)**	(0.407)	**(0.000)**	**(0.006)**	**(0.000)**	**(0.000)**	**(0.000)**	(0.258)
FDI	-0.003	-0.004	**0.005** **	-0.003	**-0.008** **	**-0.015*** **	**-0.005***	-0.009	-0.002	0.001	-0.004	-0.008**
	(0.373)	(0.527)	**(0.027)**	(0.380)	**(0.0149)**	**(0.000)**	**(0.093)**	(0.282)	(0.827)	(0.710)	(0.195)	(0.014)
Trade	-0.0001	0.0001	**-0.002***	-0.001	0.0009	0.004	**-0.003*** **	**0.001** **	**-0.003*** **	**-0.006**** **	**-0.004*** **	**-0.003***
	(0.876)	(0.813)	**(0.089)**	(0.508)	(0.506)	(0.128)	**(0.000)**	**(0.037)**	**(0.000)**	**(0.000)**	**(0.007)**	**(0.057)**
Per capita GDP growth	-0.005	**-0.011*** **	-0.008	0.001	0.006	0.006	-0.003	-0.006	**-0.015** **	-0.002	0.010	0.013
	(0.455)	**(0.043)**	(0.209)	(0.865)	(0.549)	(0.728)	(0.631)	(0.385)	**(0.017)**	(0.791)	(0.274)	(0.215)
Public Investment	**0.052*** **	**0.055*** **	**0.053*** **	**0.046*** **	**0.044*** **	**0.036** **	**0.024*** **	0.016	0.017	**0.032*** **	**0.035*** **	**0.024** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.037)**	**(0.000)**	(0.128)	(0.101)	**(0.006)**	**(0.000)**	**(0.040)**
Landlocked	-0.030	0.134	0.125	-0.095	-0.050	-0.097	0.061	**0.222** **	0.065	0.041	0.079	0.067
	(0.656)	(0.158)	(0.234)	(0.214)	(0.435)	(0.163)	(0.302)	**(0.038)**	(0.477)	(0.547)	(0.251)	(0.319)
English	**0.381*** **	**0.294*** **	**0.356*** **	**0.388*** **	**0.302*** **	**0.241** **	**0.344*** **	**0.257***	**0.443*** **	**0.357*** **	**0.415*** **	**0.417*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.016)**	**(0.000)**	**(0.092)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Low Income	**-0.354*** **	**0.152***	-0.108	**-0.391*** **	**-0.504*** **	**-0.652*** **	**-0.190*** **	0.190	-0.036	**-0.325*** **	**-0.402*** **	**-0.405*** **
	(0.000)	**(0.080)**	(0.446)	**(0.001)**	**(0.000)**	**(0.000)**	**(0.000)**	(0.300)	(0.674)	**(0.000)**	**(0.000)**	**(0.002)**
Pseudo R^2	0.277	0.133	0.119	0.184	0.273	0.349	0.246	0.068	0.121	0.154	0.255	0.333
Observations	367	367	367	367	367	367	366	366	366	366	366	366
	OLS	**Q 0.1**	**Q 0.25**	**Q 0.50**	**Q 0.75**	**Q 0.90**	**OLS**	**Q 0.1**	**Q 0.25**	**Q 0.50**	**Q 0.75**	**Q 0.90**
			Government Effectiveness						**Political Stability**			
Constant	**-0.506*** **	**-1.381*** **	**-0.663*** **	**-0.346** **	-0.062	0.106	**-1.192*** **	**-3.090*** **	**-1.620*** **	**-0.988*** **	**-0.512*** **	0.604
	(0.000)	**(0.000)**	**(0.000)**	**(0.029)**	(0.686)	(0.548)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.016)**	(0.114)
Development Assistance	**-0.008** **	**-0.006***	**-0.013*** **	-0.008	-0.009	-0.005	-0.005	-0.004	0.001	-0.0003	-0.004	-0.006
	(0.023)	**(0.062)**	**(0.000)**	(0.218)	(0.287)	(0.374)	(0.332)	(0.592)	(0.769)	(0.973)	(0.652)	(0.644)
FDI	-0.003	0.001	0.003	-0.003	**-0.006***	-0.0009	**-0.009***	-0.019	-0.010	**-0.009***	**-0.011** **	-0.002
	(0.355)	(0.255)	(0.178)	(0.373)	**(0.097)**	(0.959)	**(0.075)**	(0.591)	(0.442)	**(0.090)**	**(0.024)**	(0.894)
Trade	**-0.001** **	-0.0001	**-0.004*** **	**-0.003** **	-0.002	-0.002	**0.005*** **	**0.01**** **	**0.004*** **	**0.005*** **	**0.005*** **	0.0007
	(0.032)	(0.894)	**(0.000)**	**(0.022)**	(0.101)	(0.258)	**(0.000)**	**(0.000)**	**(0.005)**	**(0.000)**	**(0.002)**	(0.764)
Per capita GDP growth	0.0009	-0.002	0.002	0.017	0.011	-0.002	0.005	0.006	-0.003	0.002	0.002	0.013
	(0.894)	(0.716)	(0.774)	(0.208)	(0.434)	(0.808)	(0.636)	(0.706)	(0.816)	(0.911)	(0.875)	(0.325)
Public Investment	**0.040*** **	**0.017*** **	**0.038*** **	**0.049*** **	**0.058*** **	**0.054*** **	**0.060*** **	**0.045** **	**0.078*** **	**0.049*** **	**0.056*** **	0.021
	(0.000)	**(0.003)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.005)**	**(0.000)**	**(0.025)**	**(0.000)**	**(0.000)**	**(0.004)**	(0.324)
Landlocked	-0.073	**0.213** **	0.050	**-0.149** **	**-0.145***	**-0.124***	-0.122	0.048	**-0.470*** **	**-0.378** **	0.066	-0.030
	(0.239)	**(0.0173)**	(0.587)	**(0.037)**	**(0.063)**	**(0.079)**	(0.224)	(0.852)	**(0.000)**	**(0.022)**	(0.630)	(0.809)
English	**0.389*** **	**0.179** **	**0.385*** **	**0.418*** **	**0.398*** **	**0.453*** **	**0.241*** **	**0.657*** **	**0.577*** **	**0.242***	0.136	0.064
	(0.000)	**(0.037)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.007)**	**(0.000)**	**(0.000)**	**(0.053)**	(0.226)	(0.752)
Low Income	**-0.435*** **	-0.071	**-0.297*** **	**-0.559*** **	**-0.694*** **	**-0.733*** **	-0.132	0.228	**-0.486*** **	-0.151	-0.199	**-0.416** **
	(0.000)	(0.482)	**(0.006)**	**(0.000)**	**(0.000)**	**(0.000)**	(0.234)	(0.268	**(0.002)**	(0.381)	(0.216)	**(0.029)**
Pseudo R^2	0.312	0.078	0.094	0.195	0.324	0.406	0.194	0.138	0.133	0.098	0.118	0.141
Observations	359	359	359	359	359	359	368	368	368	368	368	368

Notes. Dependent variables are Regulation Quality , the Rule of Law, Government-effectiveness and Political-stability. *,**,***, denote significance levels of 10%, 5% and 1% respectively. Lower quantiles (e.g., Q 0.1) signify nations where Regulation Quality , the Rule of Law, Government-effectiveness and Political-stability is least. P-values in brackets. FDI: Foreign Direct Investment. Landlocked: landlocked countries. English: English Common-law countries. Low income: low income countries.

Table 3: Voice & Accountability, Democracy, Corruption and Corruption-Control

	OLS	Q 0.1	Q 0.25	Q 0.50	Q 0.75	Q 0.90	OLS	Q 0.1	Q 0.25	Q 0.50	Q 0.75	Q 0.90
	Voice & Accountability						Democracy					
Constant	**-0.716*** **	**-1.725*** **	**-1.189*** **	**-0.835*** **	0.192	**0.656*** **	0.741	**-1.900** **	-0.194	-0.492	**5.018*** **	**7.093*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	(0.431)	**(0.004)**	(0.224)	**(0.018)**	(0.634)	(0.561)	**(0.001)**	**(0.000)**
Development Assistance	0.005	**0.008***	0.006	0.002	-0.007	**-0.014** **	**-0.072*** **	**-0.207*** **	-0.052	0.060	0.002	0.008
	(0.257)	**(0.087)**	(0.147)	(0.664)	(0.304)	**(0.022)**	**(0.008)**	**(0.000)**	(0.379)	(0.136)	(0.965)	(0.819)
FDI	-0.007	-0.003	-0.0003	-0.008	-0.008	-0.009	**-0.060** **	-0.054	-0.041	-0.022	-0.035	**-0.065*** **
	(0.125)	(0.122)	(0.891)	(0.108)	(0.115)	(0.647)	**(0.013)**	(0.594)	(0.563)	(0.332)	(0.191)	**(0.000)**
Trade	-0.0003	**0.002** **	-0.001	0.0004	**-0.002***	-0.0007	0.0005	-0.021	-0.0005	0.008	0.0001	0.011
	(0.748)	**(0.018)**	(0.199)	(0.739)	**(0.054)**	(0.744)	(0.922)	(0.186)	(0.892)	(0.525)	(0.987)	(0.227)
Per capita GDP growth	-0.004	-0.001	-0.004	-0.005	0.005	0.022	**0.102** **	**0.292*** **	0.040	0.037	-0.001	-0.020
	(0.672)	(0.862)	(0.591)	(0.701)	(0.789)	(0.137)	**(0.029)**	**(0.000)**	(0.343)	(0.455)	(0.985)	(0.781)
Public Investment	**0.023** **	**-0.020** **	**0.023***	0.017	**0.050** **	0.026	**0.185*** **	**0.152*** **	0.032	0.120	0.068	0.021
	(0.018)	**(0.042)**	**(0.059)**	(0.143)	**(0.013)**	(0.141)	**(0.000)**	**(0.000)**	(0.402)	(0.130)	(0.520)	(0.788)
Landlocked	**-0.180** **	-0.004	**-0.314*** **	**-0.236** **	**-0.265*** **	**-0.160***	-0.576	-0.883	-0.570	-0.178	-0.784	**-0.707***
	(0.038)	(0.967)	**(0.003)**	**(0.044)**	**(0.007)**	**(0.085)**	(0.173)	(0.403)	(0.239)	(0.861)	(0.301)	**(0.058)**
English	**0.510*** **	0.156	**0.584*** **	**0.833*** **	**0.398** **	0.030	**2.270*** **	0.913	**0.740** **	**2.706*** **	**3.305*** **	**1.319** **
	(0.000)	(0.231)	**(0.000)**	**(0.000)**	**(0.012)**	(0.822)	**(0.000)**	(0.185)	**(0.043)**	**(0.002)**	**(0.002)**	**(0.028)**
Low Income	**-0.207** **	**0.244***	-0.079	**-0.337*** **	**-0.463*** **	**-0.435*** **	**1.073** **	**3.943*** **	**1.459** **	0.174	-0.686	**-1.003***
	(0.031)	**(0.095)**	(0.462)	**(0.004)**	**(0.000)**	**(0.000)**	**(0.029)**	**(0.000)**	**(0.0119)**	(0.785)	(0.494)	**(0.067)**
Pseudo R^2	0.119	0.0004	0.075	0.124	0.119	0.157	0.114	0.066	0.0003	0.072	0.081	0.128
Observations	368	368	368	368	368	368	449	449	449	449	449	449
	OLS	**Q 0.1**	**Q 0.25**	**Q 0.50**	**Q 0.75**	**Q 0.90**	**OLS**	**Q 0.1**	**Q 0.25**	**Q 0.50**	**Q 0.75**	**Q 0.90**
	Corruption						**Corruption-Control**					
Constant	**2.689*** **	**1.374*** **	**1.810*** **	**2.241*** **	**3.274*** **	**4.095*** **	**-0.652*** **	-1.475	**-1.206*** **	**-0.593*** **	-0.149	0.188
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	(0.000)	**(0.000)**	**(0.000)**	(0.364)	(0.333)
Development Assistance	-0.005	0.006	0.002	0.0007	-0.005	-0.011	-0.002	-0.0008	-0.001	**-0.007** **	-0.004	-0.008
	(0.556)	(0.196)	(0.733)	(0.921)	(0.598)	(0.217)	(0.510)	(0.721)	(0.639)	**(0.025)**	(0.485)	(0.221)
FDI	0.0006	-0.008	0.0002	-0.004	0.005	0.008	-0.002	-0.006	0.0001	-0.006	-0.004	-0.002
	(0.956)	(0.296)	(0.987)	(0.803)	(0.787)	(0.599)	(0.459)	(0.391)	(0.965)	(0.109)	(0.255)	(0.459)
Trade	0.0003	**0.004*** **	0.002	**0.004***	0.0007	-0.002	0.0005	**0.002** **	0.001	0.001	0.00005	-0.001
	(0.837)	**(0.003)**	(0.283)	**(0.078)**	(0.766)	(0.243)	(0.480)	**(0.018)**	(0.297)	(0.549)	(0.970)	(0.315)
Per capita GDP growth	**-0.027***	-0.011	**-0.024***	-0.012	-0.007	-0.028	**-0.013***	-0.013	-0.007	0.007	-0.011	-0.014
	(0.079)	(0.240)	**(0.064)**	(0.474)	(0.795)	(0.308)	**(0.072)**	(0.101)	(0.661)	(0.552)	(0.369)	(0.138)
Public Investment	**0.081*** **	**0.036*** **	**0.054** **	**0.103*** **	**0.113*** **	**0.115*** **	**0.042*** **	**0.021** **	**0.041*** **	**0.042*** **	**0.050*** **	**0.070*** **
	(0.000)	**(0.001)**	**(0.012)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.015)**	**(0.001)**	**(0.003)**	**(0.002)**	**(0.000)**
Landlocked	**0.229***	**0.203***	0.209	0.159	**0.492*** **	**0.334** **	0.066	0.118	0.066	-0.028	0.104	0.118
	(0.091)	**(0.084)**	(0.194)	(0.437)	**(0.004)**	**(0.010)**	(0.310)	(0.165)	(0.418)	(0.712)	(0.293)	(0.222)
English	**0.872*** **	**0.329*** **	**0.487*** **	**0.942*** **	**0.727*** **	**0.729*** **	**0.256*** **	**0.165** **	**0.162** **	0.126	**0.273** **	**0.235***
	(0.000)	**(0.006)**	**(0.007)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.019)**	**(0.024)**	(0.153)	**(0.010)**	**(0.073)**
Low Income	**-1.142*** **	-0.120	**-0.482** **	**-1.337*** **	**-1.712*** **	**-1.795*** **	**-0.392*** **	0.043	**-0.151***	**-0.393*** **	**-0.665*** **	**-0.764*** **
	(0.000)	(0.391)	**(0.032)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	(0.615)	**(0.079)**	**(0.002)**	**(0.000)**	**(0.000)**
Pseudo R^2	0.395	0.073	0.084	0.207	0.374	0.446	0.241	0.064	0.073	0.138	0.239	0.262
Observations	277	277	277	277	277	277	359	359	359	359	359	359

Notes. Dependent variables are Voice & Accountability, Democracy, Corruption and Control of Corruption. *, **, ***, denote significance levels of 10%, 5% and 1% respectively. Lower quantiles (e.g., Q 0.1) signify nations where Voice & Accountability, Democracy, Corruption and Control of Corruption is least. P-values in brackets. FDI: Foreign Direct Investment. Landlocked: landlocked countries. English: English Common-law countries. Low income: low income countries.

4. Conclusion

We have extended the Okada & Samreth (2012, EL) and Asongu (2012, EB) debate on 'the effect of foreign aid on corruption' by: not partially negating the former's methodological underpinning (as in the latter's approach) with a unifying empirical framework and; broadening the horizon of inquiry from corruption to eight institutional quality dynamics (rule of law, regulation quality, government effectiveness, democracy, corruption, voice & accountability, control of corruption and political stability). Core to this extension is a hypothetical contingency of the 'institutional perils of foreign aid' on existing institutional quality such that, the institutional downside of development assistance maybe questionable when greater domestic institutional development has taken place. Based on the hypothesis of institutional thresholds for foreign aid effectiveness, the perilous character of development assistance to institutional quality has been broadly confirmed in 53 African countries for the period 1996-2010.

Appendices

Appendix 1: Summary Statistics and Presentation of Countries

Panel A: Summary Statistics

	Variables	Mean	S.D	Min.	Max.	Observations
Institutional Quality	Rule of Law	-0.706	0.682	-2.691	1.053	633
	Regulation Quality	-0.687	0.674	-2.729	0.905	631
	Government Effectiveness	-0.681	0.614	-1.853	0.807	598
	Political Stability	-0.557	0.958	-3.311	1.143	636
	Voice & Accountability	-0.674	0.734	-2.174	1.047	636
	Control of Corruption	-0.607	0.623	-2.495	1.086	622
	Democracy	2.373	4.093	-8.000	10.000	750
	Corruption	2.984	1.065	1.000	6.400	462
Development Assistance (DA)	Total DA	10.811	12.774	-0.251	148.30	704
	DA from Multilateral Donors	4.481	5.512	-1.985	64.097	704
	DA from DAC countries	6.244	8.072	-0.679	97.236	704
Control Variables	Per capita Economic Prosperity (GDPpcg)	2.326	6.702	-33.073	90.140	768
	Public Investment	7.449	4.500	0.000	39.984	655
	Financial Openness (FDI)	4.221	8.451	-8.629	145.20	557
	Trade Openness (Trade)	77.853	39.698	17.859	275.23	719
Dummy variables	English Common law countries	0.377	0.485	0.000	1.000	795
	Landlocked countries	0.283	0.450	0.000	1.000	795
	Low Income countries	0.584	0.493	0.000	1.000	795

Panel B: Presentation of Countries

Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Congo Democratic Republic, Congo Republic, Côte d'Ivoire, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, The Gambia, Ghana, Guinea, Guinea Bissau, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tomé & Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Togo, Tunisia, Uganda, Zambia, Zimbabwe, Tanzania, Comoros.

S.D: Standard Deviation. Min: Minimum. Max: Maximum. FDI: Foreign Direct Investment. GDPpcg: GDP per capita growth.
DA: Development Assistance. DAC: Development Assistance Committee.

Appendix 2: Correlation analysis

Institutional Quality								Foreign Aid			Control Variables							
RL	RQ	GE	PolS	VA	CC	Demo	C	DA	DAMD	DADAC	FDI	Trade	GDPpcg	PubI	Eng	LL	LI	
1.00	0.81	0.88	0.79	0.72	0.87	0.52	0.84	-0.20	-0.17	-0.20	0.001	0.17	0.08	0.22	0.17	0.02	-0.36	RL
	1.00	0.81	0.63	0.70	0.72	0.48	0.72	-0.24	-0.22	-0.23	-0.14	0.01	0.11	0.08	0.14	0.05	-0.28	RQ
		1.00	0.64	0.68	0.83	0.41	0.86	-0.27	-0.25	-0.24	-0.04	0.12	0.10	0.13	0.30	-0.05	-0.43	GE
			1.00	0.65	0.68	0.52	0.67	-0.14	-0.12	-0.14	0.04	0.30	0.10	0.24	0.05	-0.04	-0.25	PolS
				1.00	0.66	0.75	0.65	-0.0009	-0.002	0.002	-0.02	0.03	0.07	-0.02	0.24	0.01	-0.14	V&A
					1.00	0.48	0.88	-0.14	-0.12	-0.14	0.01	0.16	0.006	0.21	0.12	0.02	-0.32	CC
						1.00	0.42	-0.03	0.011	-0.05	-0.04	0.008	0.06	0.14	0.16	0.09	-0.02	Demo
							1.00	-0.22	-0.21	-0.21	0.04	0.20	0.04	0.08	0.24	0.03	-0.39	C
								1.00	0.90	0.95	0.16	-0.10	0.00	0.19	-0.05	0.08	0.45	DA
									1.00	0.73	0.09	-0.09	0.01	0.22	-0.03	0.13	0.47	DAMD
										1.00	0.19	-0.09	-0.008	0.14	-0.05	0.05	0.38	DADAC
											1.00	0.45	0.20	0.07	0.10	-0.04	-0.07	FDI
												1.00	0.17	0.18	0.18	-0.09	-0.35	Trade
													1.00	0.11	0.01	-0.03	-0.13	GDPpcg
														1.00	-0.13	0.08	-0.05	PubIvt
															1.00	0.11	-0.05	Eng
																1.00	0.27	LL
																	1.00	LI

RL: Rule of Law. RQ: Regulation Quality. GE: Government Effectiveness. V&A: Voice & Accountability. CC: Corruption-Control. Demo: Democracy. C: Corruption Perception Index. FDI: Foreign Direct Investment. GDPpcg: GDP per capita growth. PubI: Public Investment. DA: Net Official Development Assistance. Eng: English Common Law countries. LL: Landlocked countries. LI: Low Income countries.

Appendix 3: Variable Definitions

Variables	Signs	Variable Definitions	Source(s)
Rule of Law	RL	Rule of Law (estimate)	World Bank (WDI)
Regulation Quality	RQ	Regulation Quality (estimate)	World Bank (WDI)
Government Effectiveness	GE	Government Effectiveness(estimate)	World Bank (WDI)
Political Stability	PolS	Political Stability/ No Violence (estimate)	World Bank (WDI)
Voice & Accountability	VA	Voice and Accountability (estimate)	World Bank (WDI)
Control of Corruption	CC	Control of Corruption(estimate)	World Bank (WDI)
Democracy	Demo	Level of Institutionalized Democracy	World Bank (WDI)
Corruption	C	Corruption Perception Index	Transparency International
Development Assistance 1	DA	Total Development assistance (% of GDP)	World Bank (WDI)
Development Assistance 2	DAMD	Development Assistance from Multilateral Donors(% of GDP)	World Bank (WDI)
Development Assistance 3	DADAC	Development Assistance from DAC Countries (% of GDP)	World Bank (WDI)
External Debt Flow	FDI	Foreign Direct Investment (% of GDP)	World Bank (WDI)
Trade(Openness)	Trade	Imports plus Exports in commodities (% of GDP)	World Bank (WDI)
Public Investment	PubI	Gross Public Investment (% of GDP)	World Bank (WDI)
Per Capita Economic prosperity	GDPpcg	GDP per capita Growth (annual %)	World Bank (WDI)
English	Eng	English Common law countries	La Porta et al. (2008, p. 289)
Landlocked	LL	Landlocked Countries	-----
Low Income	LI	Low Income Countries	World Bank (FDSD)

WDI: World Bank Development Indicators. GDP: Gross Domestic Product. DAC: Development Assistance Committee. FDSD: Financial Development and Structure Database.

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