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On the channels of foreign aid to corruption

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On the channels of foreign aid to corruption

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Abstract

The debate by Okada & Samreth (2012, EL) and Asongu (2012, EB; 2013, EEL) on 'the effect of foreign aid on corruption' in its current state has the shortcoming of modeling corruption as a direct effect of development assistance. This note extends the debate by assessing the channels of foreign aid to corruption in 53 African countries for the period 1996-2010. Two main findings are established to unite the two streams of the debate. (1) Foreign aid channeled through government's consumption expenditure increases corruption. (2) Development assistance channeled via private investment and tax effort decreases corruption. It follows that foreign aid that is targeted towards reducing corruption should be channeled via private investment and tax effort, not through government expenditure. Our results integrate an indirect component and reconcile the debate by showing that, the effect could either be positive or negative depending on the transmission channel.

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

The debate by Okada & Samreth (2012) and Asongu (2012, 2013a) on 'the effect of foreign aid on corruption' has had an important influence in policy and academic circles. In its current state, the debate lacks a unifying framework. Accordingly, both proponents in the debate have the drawback of modeling corruption as a direct effect of development assistance. Consistent with Knack & Keefer (1995)[2], we argue that investigating institutional quality as a direct consequence of aid may be misleading in terms of policy implications because it fails to account for mechanisms through which development assistance is channeled. In uniting the two streams, we argue that investment and fiscal behavior channels are crucial in better understanding the relationship between development assistance and corruption. From an investment perspective, consistent with Easterly (2005), 'Big Push' (Harrod-Domar and Solow growth) models which constitute the main theoretical underpinnings in the aid literature are based on the need for substantial aid-financed improvements in investment in order to bridge 'poverty and development' gaps. From the fiscal behavior dimension, it is common sense to acknowledge that development assistance affects fiscal behavior in terms of government expenditure and tax effort.

The debate can be highlighted in three main strands. In the first, Okada and Samreth (O & S) have investigated the relationship in 120 developing countries for the period 1995-2009 and concluded that aid generally reduces corruption and its reduction effect is greater in less corrupt countries. As a direct response, Asongu (2012) has partially negated their criticism of the mainstream approach to the aid-development nexus. Using data from 52 African countries for the period 1996-2010, he has established that development assistance fuels (mitigates) corruption (the control of corruption) in the African continent. Hence, has concluded that the O & S findings for developing countries may not be relevant for Africa.

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

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

In the third strand, some scholars have informally pointed-out the lack of fiscal policy and investment channels in the debate. Accordingly, the debate in its present state has not deviated from the Fielding et al. (2006) stance on a straight forward nexus between aid and development. Hence, consistent with Knack & Keefer (1995) who have concluded that more indicators are needed to properly account for the quality of institutions, we further extend the debate by providing an indirect dimension to the relationship with the help of transmission mechanisms.

The fiscal behavior and investment channels in the aid-corruption relationship are consistent with the theoretical and empirical underpinnings of the aid literature (Rostow, 1960; Chenery & Strout, 1966; Mosley et al., 1992; Reichel, 1995; Boone, 1996; Gomanee et al., 2003; Mosley et al., 2004; Easterly, 2005; Addison et al., 2005; Morrissey, 2012). From a

theoretical standpoint, as highlighted above, the 'Big-Push' model on which foreign aid is based suggests that Africa is poor because it is stuck in poverty and institutional traps (Easterly, 2005). To emerge from these traps, it needs a substantial aid-financed increase in investment: a 'Big Push'. Both the Harrod-Domar and the Solow growth models have been used to substantiate these channels. The underlying assumption in this theoretical underpinning is the notion that the 'Big Push' is destined to bridge the saving-investment gap poor countries face (Rostow, 1960; Chenery & Strout, 1966; Easterly, 2005). On the empirical front, in examining the effect of development assistance, a substantial bulk of studies has focused on the impact of aid-flows on GDP growth and other macroeconomic variables (investment or public consumption). For instance, Gomanee et al. (2003) have concluded that development assistance has both a direct effect on welfare and an indirect impact via social services and public spending. The indirect dimension has been supported by Mosley et al. (2004) on poverty and wellbeing in recipient countries. Development assistance has also been found to encourage unproductive public consumption (Mosley et al., 1992) without increasing investment. This latter point has been confirmed by Reichel (1995) and Boone (1996). Addison et al. (2005) have also found aid to strengthen pro-poor public expenditure. Accordingly, donors are concerned about how their development assistance is used, especially the manner in which it affects the fiscal behavior of recipient countries because aid and fiscal behavior are linked via government spending and tax effort (Morrissey, 2012).

In light of the above channels of foreign aid, two mechanisms clearly standout from the theoretical and empirical underpinnings: investment and fiscal behavior channels. Therefore, the goal of this note is to extend the debate on the 'effect of foreign aid on corruption' with the mechanisms. The rest of the paper is organized as follows. Section 2 discusses the data and outlines the methodology. Section 3 covers the empirical analysis and corresponding discussion. We conclude with Section 4.

2. Data and Methodology

2.1 Data

We examine a panel of 53 African countries with data from the African Development Indicators (ADI) of the World Bank (WB) for the period 1996-2010. Limitations to African countries and periodicity are consistent with the underpinnings of the debate[3]. The dependent variable is the corruption perception index (CPI), consistent with the debate (Asongu, 2012, 2013a; Okada & Samreth, 2012).

The theoretical and empirical underpinnings for the endogenous explaining variables (channels) have already been substantially covered in the fifth paragraph of the introduction. Hence, we use private investment and fiscal behavior channels (government's final consumption expenditure and tax revenues) in line with the literature (Rostow, 1960; Chenery & Strout, 1966; Mosley et al., 1992; Boone, 1996; Addison et al., 2005; Reichel, 1995; Easterly, 2005; Morrissey, 2012). The instrumental variables include: Total Net Official Development Assistance (NODA), NODA from Multilateral Donors (MD), NODA from the Development Assistance Committee (DAC) countries and Grants excluding technical cooperation.

Due to identification constraints, we are unable control for many macroeconomic and structural characteristics. In essence, owing to the limited number of instrumental variables, there are substantial constraints in the degrees of freedom needed for the Sargan overidentifying restrictions (OIR) test for instrument validity[4]. To avoid misspecification in the transmission mechanisms, we control only for inflation and economic prosperity. These

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

[4] An OIR test is only applicable in the presence of over-identification. That is, the instruments must be higher than the endogenous explaining variables by at least one degree of freedom. In the cases of exact-identification (instruments equal to endogenous explaining variables) and under-identification (instruments less than endogenous explaining variables) an OIR test is by definition is not possible.

two control variables are incorporated to reduce the degree of identification when development assistance instruments are invalid. From intuition, development assistance indirectly fuels demand-pull inflation but directly increases GDP.

Details about the summary statistics, correlation analysis (showing the basic correlations between key variables employed in the note), variable definitions (with corresponding data sources) are presented in Appendix 1, Appendix 2 and Appendix 3 respectively. The 'descriptive statistics' of the variables shows that, there is quite a degree of variation in the data utilized so that one should be confident that reasonable estimated relationships would emerge. The purpose of the correlation matrix is to mitigate issues of overparametization and multicolinearity. From an initial assessment of the correlation coefficients, there do not appear to be any serious issues in terms of the relationships to be estimated.

2.2 Methodology

The adoption of a Two-Stage Least Squares (2SLS) Instrumental Variable (IV) estimation technique has a twofold justification: while addressing the issue of endogeneity, the IV estimation underpinnings are in accordance with the problem statement of the note. Our concern for endogeneity is valid for two main reasons. Firstly, the CPI is a perception based measure that could be subject to public opinion bias (due to media propaganda for example), therefore concerns of measurement error and omitted variables. Secondly, whereas fiscal behavior and investment affect corrupt practices, corruption also affects private investment and government fiscal policies (as the current situation in Greece), hence the issue of reverse causality.

The estimation procedure involves the following steps.

First-stage regression:

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

Second-stage regression:

$$Corruption_{it} = \beta_0 + \beta_1 (FB)_{it} + \beta_2 (Investment)_{it} \beta_j X_{it} + \mu_{it} \quad (2)$$

In Eq. (2), *X* is a vector of control variables which include: *GDP growth* and *inflation*. *FB* stands for *Fiscal behavior* which encompasses *Government's final consumption expenditure, Tax revenues* and *Tax revenues on international trade*. *Investment* entails *Private investment*. Instrumental variables include: *Total NODA, NODA from DAC countries, NODA from MD* and *Grants.* For Eq. (1) and Eq. (2), v and u, respectively represent the error terms.

Three main steps make-up the estimation process. Firstly, we justify the choice of the 2SLS IV estimation strategy with a Hausman test for endogeneity. Secondly, we verify that the foreign aid instruments are exogenous to the endogenous components of explaining variables (fiscal behavior and investment mechanisms). Thirdly, we ensure the instruments are valid and not correlated with the error term in the equation of interest (Eq. (2)) with an OIR test. Further robustness checks will be ensured with: (1) estimation with robust Heteroscedasticity and Autocorrelation Consistent (HAC) standard errors and; (2) restricted and unrestricted modeling.

3. Empirical analysis

3.1 Presentation of results

This section examines two main concerns: (1) the capacity of the exogenous components of investment and fiscal behavior mechanisms to explain corruption and; (2) the ability of the foreign aid instruments to explain corruption through the proposed channels[5]. Whereas the first concern is tackled by the significance and signs of estimated coefficients,

[5] The direct effects of foreign aid on corruption have already been demonstrated in the literature (Asongu, 2012, Asongu, 2013a). There is no need to do this any longer because Asongu (2012) has used an IV estimation technique to show the perilous character of foreign aid on corruption in 52 African countries for the same period (1996-2010). Accordingly, the scope of the debate is already firmly settled and the present positioning only extends the existing debate by means of indirect effects and fiscal policy behavior mechanisms. We are using the same database, the same set of countries and the same periodicity as in the studies motivating this extension.

the second issue is addressed with the Sargan OIR test. The null hypothesis of this test is the stance that the aid instruments explain corruption only via the proposed channels. Therefore, a rejection of the null, is a rejection of the view that the instruments do not explain corruption beyond the mechanisms. A Hausman test precedes the 2SLS-IV estimations. The null hypothesis of this test is the view that estimated coefficients by OLS are efficient and consistent. Therefore, a rejection of this null hypothesis points to the concern of endogeneity due to inconsistent estimates, hence, justifies the choice of the IV estimation strategy. Owing to the problem statement of this note, the Hausman is a necessary but not a sufficient condition for the IV approach. Therefore, the 2SLS is still employed even in the absence of endogeneity.

Table 1 below presents the results. Panel A (B) shows unrestricted (restricted) modeling. Restricted equations denote modeling in the absence of a constant term. While the first halves of both panels are estimations without HAC standard errors, the second halves consist of HAC standard errors estimations. From the results, the overwhelming rejection of the null hypothesis of the Hausman test provides justification for the choice of the 2SLS IV estimation technique. As concerns the first issue, the following conclusions could be drawn. (1) Government's final consumption expenditure increases corruption. (2) Private investment and tax effort broadly decrease corruption. Note should be taken of the fact that, the CPI (dependent variable) is measured in decreasing order with high values denoting less corruption. For the second issue, the overwhelming failure to reject the null hypothesis of the Sargan OIR test shows that the foreign aid instruments explain corruption only through the proposed channels (conditional on the control variables). In other words, two conclusions can be established for the second issue. (1) Foreign aid channeled through government's consumption expenditure increases corruption. (2) Development assistance channeled via private investment and tax effort decreases corruption. It follows that foreign aid that is

targeted towards reducing corruption should be channeled via private investment and tax effort, not through government expenditure.

One of the significant control variables has the expected sign: economic prosperity in African countries has been found to increase corruption irrespective of initial corruption-control levels (Asongu, 2013b, pp. 43-44). The fact that inflation reduces corruption (in Panel B) is contrary to intuition. This is because we intuitively expected inflation to broadly encourage public officials to seek more rents in a bid to cope with rising prices. However, it is also interesting to note that, foreign aid could increase demand pull inflation that eventually decreases corrupt practices because of a general increase in the revenues of public officials who may no longer see rent seeking as the sole means of making ends meet. The interpretation is contingent on the hypothesis that the public officials formerly seeking rents expect aid flows to continue in the future.

Table 1: Channels of foreign aid to corruption (Dependent variable: CPI)

	Panel A: Unrestricted modeling									
	Without HAC Standard Errors					**With HAC Standard Errors**				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1*	Model 2*	Model 3*	Model 4*	Model 5*
Constant	0.835	**1.817***	-0.090	2.267	3.191	0.835	**1.817*****	-0.090	**2.267****	3.191
	(0.213)	**(0.052)**	(0.939)	(0.125)	(0.165)	(0.133)	**(0.001)**	(0.950)	**(0.029)**	(0.187)
Gov. Exp.	**-0.068****	**-0.07*****	**-0.070***	**-0.073****	-0.056	-0.068	-0.070	**-0.070***	**-0.073***	**-0.056****
	(0.012)	**(0.008)**	**(0.092)**	**(0.017)**	(0.191)	(0.128)	(0.138)	**(0.090)**	**(0.086)**	**(0.044)**
Private Invt.	**0.080****	**0.083****	0.066	**0.068***	0.046	**0.080*****	**0.083****	**0.066*****	**0.068***	0.046
	(0.021)	**(0.015)**	(0.101)	**(0.092)**	(0.263)	**(0.009)**	**(0.021)**	**(0.002)**	**(0.062)**	(0.160)
Tax revenues	**0.081*****	**0.060****	**0.110*****	0.052	0.040	**0.081*****	**0.060****	**0.110****	0.052	0.040
	(0.001)	**(0.032)**	**(0.000)**	(0.262)	(0.472)	**(0.009)**	**(0.020)**	**(0.030)**	(0.131)	(0.521)
ITax revenues	---	-0.032	---	---	-0.039	---	-0.032	---	---	**-0.039***
		(0.139)			(0.182)		(0.169)			**(0.094)**
Inflation	---	---	0.067	---	0.041	---	---	0.067	---	0.041
			(0.305)		(0.535)			(0.251)		(0.598)
GDPg	---	---	---	-0.148	-0.179	---	---	---	**-0.148***	**-0.179****
				(0.262)	(0.210)				**(0.063)**	**(0.027)**
Hausman test	**12.57*****	**12.232***	**13.7*****	**16.43*****	**14.68****	**12.57*****	**12.232****	**13.70*****	**16.43*****	**14.68*****
	(0.000)	**(0.015)**	**(0.008)**	**(0.002)**	**(0.022)**	**(0.000)**	**(0.015)**	**(0.008)**	**(0.000)**	**(0.000)**
Sargan OIR	**4.734**	**2.660**	**3.136**	**2.553**	**0.362**	**4.734**	**2.660**	**3.136**	**2.553**	**0.362**
	(0.449)	**(0.616)**	**(0.535)**	**(0.635)**	**(0.834)**	**(0.449)**	**(0.616)**	**(0.535)**	**(0.635)**	**(0.834)**
Adjusted R^2	0.272	0.276	0.199	0.161	0.112	0.272	0.276	0.199	0.161	0.112
Fisher	**8.576*****	**7.208*****	**3.596*****	**5.516*****	**2.969****	**8.155*****	**4.607*****	**6.576*****	**5.178*****	**5.566*****

	Panel B: Restricted modeling									
	Without HAC Standard Errors					With HAC Standard Errors				
	Model 6	Model 7	Model 8	Model 9	Model 10	Model 6*	Model 7*	Model 8*	Model 9*	Model 10*
Gov. Exp.	**-0.061****	**-0.061****	**-0.069***	**-0.063****	**0.075***	-0.061	-0.061	**-0.069***	-0.063	**-0.075****
	(0.033)	**(0.036)**	**(0.068)**	**(0.029)**	**(0.097)**	(0.179)	(0.177)	**(0.053)**	(0.177)	**(0.046)**
Private Invt.	**0.106*****	**0.108*****	**0.064***	**0.100*****	**0.076***	**0.106*****	**0.108****	**0.064*****	**0.100****	**0.076*****
	(0.000)	**(0.002)**	**(0.056)**	**(0.000)**	**(0.060)**	**(0.007)**	**(0.026)**	**(0.001)**	**(0.013)**	**(0.002)**
Tax revenues	**0.101*****	**0.101*****	**0.108*****	**0.100*****	**0.111*****	**0.101*****	**0.101*****	**0.108*****	**0.100*****	**0.111*****
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.001)**	**(0.000)**	**(0.000)**	**(0.000)**
ITax revenues	---	-0.002	---	---	-0.014	---	-0.032	---	---	-0.014
		(0.898)			(0.583)		(0.927)			(0.688)
Inflation	---	---	0.064	---	0.092	---	---	**0.064*****	---	**0.092***
			(0.141)		(0.142)			**(0.001)**		**(0.057)**
GDPg	---	---	---	0.026	-0.037	---	---	---	0.026	0.037
				(0.677)	(0.739)				(0.587)	(0.625)
Hausman test	**70.77*****	**75.52*****	**75.97*****	**65.34*****	**80.73*****	**70.77*****	**75.52*****	**75.97*****	**65.34*****	**80.73*****
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Sargan OIR	**5.270**	**5.258**	**3.273**	**5.244**	**1.915**	**5.270**	**5.258**	**3.273**	**5.244**	**1.915**
	(0.509)	**(0.385)**	**(0.657)**	**(0.386)**	**(0.590)**	**(0.509)**	**(0.385)**	**(0.657)**	**(0.386)**	**(0.590)**
Adjusted R^2	0.295	0.294	0.209	0.287	0.195	0.295	0.294	0.209	0.287	0.195
Fisher	**302.7*****	**225.4*****	**176.4*****	**230.9*****	**93.90*****	**118.3*****	**85.33*****	**177.2*****	**109.1*****	**189.74*****
Instruments	Constant, Total NODA, NODADAC, NODAMD, Grants, $(\text{Total NODA})^2$, $(\text{NODADAC})^2$, $(\text{NODAMD})^2$, $(\text{Grants})^2$									

*;**;***: significance levels of 10%, 5% and 1% respectively. P-values in parentheses. Gov. Exp: Government Expenditure. ITax: International Trade taxes. OIR: Overidentifying restrictions. HAC: Heteroscedasticity and Autocorrelation Consistent. CPI: Corruption Perception Index.

3.2 Discussion

A substantial bulk of development assistance literature has concluded that Africa is poor because it is deficient of good institutions: weak courts and contract-enforcements, lack of property rights, dictatorships, hostile regulatory environment for private business and high corruption and; political instability (Easterly, 2005; Kodila-Tedika, 2012, 2013). With respect to this strand, in order to end poverty in Africa, the West needs to promote good institutions in the continent. With the growing concern over how aid could promote good institutions in aid-recipient countries, a great chunk of the literature has focused on how the quality of institutions matter in the effectiveness of foreign aid (Alesina & Dollar, 2000; Alesina & Weder, 2002; Knack, 2001; Dixit, 2004; Djankov et al., 2005). From this interesting literature on aid and institutions, for over five decades the debate on the political economy of foreign aid has centered around three main questions. First, do donors allocate more to poor states with better institutions? Second, does development assistance induce better or worse institutions? Third, how do outsiders engineer a transition from informal institutions towards

more formal institutional settings through foreign aid? This note has focused on the second strand of the challenges in the literature by extending an ongoing debate on 'the effect of foreign aid on corruption'. Based on the available weight of empirical evidence, we have found that foreign aid that is aimed at reducing corruption should be channeled via private investment and tax effort, not through government expenditure.

It is relevant to provide an in depth explanation on the instrumentality of foreign aid in the proposed channels. Firstly, it is not contrary to intuition to establish that corrupt politicians and/or government officials would try to channel development assistance funds to those expenditures that provide more lucrative opportunities for bribery and rent seeking. This interpretation is consistent with the literature sustaining that corrupt officials will choose to spend money (especially foreign aid) on goods whose true value is difficult to be identified by agents (Shleifer & Vishny, 1993). Secondly, the negative relationship between tax effort and corruption is in accordance with the bulk of studies that has argued that a more legitimate and responsive state (with respect to voice & accountability and corruption-control) is an essential factor for a more adequate level of tax effort in developing countries (Bird, 2007). Accordingly, the requirement by Western agencies for recipient institutions to be more accountable to development assistance may lead to increased tax effort on two main counts. On a first note, authorities in place may want to demonstrate that they need grants because their tax revenues are not enough to finance government projects and hence, prove that current tax efforts are not tainted by corrupt practices. On a second note, depending on the composition of aid, concessional loans are associated with higher domestic revenue mobilization to service the loans (Benedek et al., 2012). Thirdly, it is logical to expect aid channeled through private investment to mitigate corruption because, it could be assimilated to foreign direct investment that has been documented to reduce corruption in developing countries (Larrain & Tavares, 2004). Moreover, private investments have been documented to

be negatively correlated with corruption in comparison to public investments in Africa (Baliamoune-Lutz & Ndikumana, 2008).

Before concluding, it would be interesting to highlight how the findings reconcile the debate. Accordingly, the Okada & Samreth (2012) and Asongu (2012, 2013a) debate has centered along two main axes. Whereas the former has presented a case for the negative effect of aid on corruption in developing countries, the latter has rejected the findings from an African standpoint. Our results have integrated an indirect transmission mechanism and reconciled the debate by showing that, the effect could either be positive or negative depending on the transmission mechanism. Therefore whereas the 'government's final consumption expenditure' mechanism is in line with Asongu (2012, 2013a), the 'tax effort' and private investment channels are consistent with O & S.

4. Conclusion

The debate by Okada & Samreth (2012, EL) and Asongu (2012, EB; 2013, EEL) on 'the effect of foreign aid on corruption' in its current state has the shortcoming of modeling corruption as a direct effect of development assistance. This note has extended the debate by assessing the channels of foreign aid to corruption in 53 African countries for the period 1996-2010. Two main findings have been established to unite the two streams of the debate. (1) Foreign aid channeled through government's consumption expenditure increases corruption. (2) Development assistance channeled via private investment and tax effort decreases corruption. It follows that foreign aid that is targeted towards reducing corruption should be channeled via private investment and tax effort, not through government expenditure. Our results have integrated an indirect component and reconciled the debate by showing that, the effect could either be positive or negative depending on the transmission channel.

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Appendices

Appendix 1: Summary Statistics and Presentation of Countries

Panel A: Summary Statistics

	Mean	S.D	Min.	Max.	Obser
Corruption	2.984	1.065	1.000	6.400	462
Government Expenditure	4.392	12.908	-57.815	90.544	468
Private Investment	12.979	9.400	-2.437	112.35	658
Tax Revenue	17.693	10.096	0.1166	61.583	262
Tax on International Trade	21.036	14.255	0.094	61.907	255
Inflation	57.556	955.55	-100.00	24411	673
GDP Growth	4.763	7.293	-31.300	106.28	759
NODA Total	10.811	12.774	-0.251	148.30	704
NODA from DAC Countries	6.244	8.072	-0.679	97.236	704
NODA from Multilateral Donors	4.481	5.512	-1.985	64.097	704
Grants	0.069	0.115	0.000	1.477	773

Panel B: Presentation of Countries (53)

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. Obser: Observations. GDP: Gross Domestic Product. NODA: Net Official Development Assistance. DAC: Development Assistance Committee.

Appendix 2: Correlation matrix

GExp.	Priv Ivt	Tax rev	IT rev	Infl	GDPg	NODAT	DAC	MD	Grants	Cor	
1.000	0.054	0.098	-0.046	-0.139	0.103	0.039	0.038	0.021	0.036	-0.053	GExp.
	1.000	0.448	0.036	-0.042	0.372	-0.222	-0.181	-0.240	-0.174	0.291	Priv Ivt
		1.000	0.213	-0.213	-0.040	-0.309	-0.304	-0.277	-0.290	0.496	Tax rev
			1.000	-0.049	-0.030	0.198	0.142	0.238	0.122	-0.212	IT rev
				1.000	-0.057	-0.004	0.009	-0.022	0.007	-0.047	Infl
					1.000	0.053	0.034	0.073	0.069	-0.047	GDPg
						1.000	0.955	0.900	0.808	-0.229	NODA
							1.000	0.733	0.780	-0.217	DAC
								1.000	0.716	-0.217	MD
									1.000	-0.178	Grants
										1.000	Cor

GExp: Government Expenditure. Priv Ivt: Private Investment. Tax rev: Tax revenue. IT rev: International Tax revenue. Infl: Inflation. GDPg: GDP growth. NODAT: Total Net Official Development Assistance (NODA). DAC: NODA from DAC countries. MD: NODA from Multilateral Donors. Cor: Corruption.

Appendix 3: Variable Definitions

Variables	Variable Definitions	Source(s)
Corruption	Corruption Perception Index	World Bank (WDI)
Development Assistance 1	Total Development assistance (% of GDP)	World Bank (WDI)
Development Assistance 2	Development Assistance from Multilateral Donors(% of GDP)	World Bank (WDI)
Development Assistance 3	Development Assistance from DAC Countries (% of GDP)	World Bank (WDI)
Grants	Grants, Excluding Technical Cooperation (% of GDP)	World Bank (WDI)
Government Expenditure	Government's Final Consumption Expenditure (% of GDP)	World Bank (WDI)
Private Investment	Gross Private Investment (% of GDP)	World Bank (WDI)
Taxes 1	Tax revenue (% of GDP)	World Bank (WDI)
Taxes 2	Tax revenue on International Trade (% of Revenue)	World Bank (WDI))
Inflation	Consumer Price Index (annual %)	World Bank (WDI)
Economic prosperity	GDP Growth (annual %)	World Bank (WDI)

GDP: Gross Domestic Product. WDI: World Development Indicators.

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