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Taxation, foreign aid and political governance in Africa[1]

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Taxation, foreign aid and political governance in Africa

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Abstract

This study examines the hypothesis that foreign aid dilutes the positive role of taxation on political governance. The empirical evidence is based on the Generalised Method of Moments and 53 African countries for the period 1996-2010. For more policy options, the dataset is disaggregated into fundamental characteristics of African development based on income levels, legal origins, natural resources and landlockedness. While the hypothesis is invalid in baseline Africa, low income and English common law countries of the continent, the research cannot conclude on its validity for other fundamental characteristics of development. Policy implications, caveats and directions for future research are discussed.

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

1. Introduction

This research investigates linkages between taxation, foreign aid and political governance in Africa within the framework of the Eubank (2012) hypothesis which has increased the confidence of the Somaliland government and reignited the heated debate on aid and political governance. According to the Eubank hypothesis, in the absence of foreign aid, political accountability is likely to increase because taxpayers are only willing to pay their taxes in exchange for it. This Eubank hypothesis which is based on Somaliland, may fail in other African countries because of over-reliance on foreign aid. In theory, domestic governments that

substantially depend on foreign aid for income may also be associated with a culture in which citizens are prone to paying less tax. Given that 'old habits die hard', less dependence on aid or threats of foreign aid withdrawal may only result in the deterioration of political rights (see Asongu & Nwachukwu, 2017). It is also important to note that the political accountability in Somaliland did not come overnight. Hence, governments need to be consistently accountable to citizens before they can win their confidence and have them pay more tax to support government expenditure. Whereas foreign aid significantly contributes to the composition of total revenue within African countries (Cai et al., 2018; Diakite et al., 2019), Somaliland is not eligible for Official Development Assistance because it is not recognised by the International Community as a sovereign nation. Hence, unable to access foreign aid, the government of the country has had to negotiate with business leaders and citizens for financial support and in return provide better democracy, accountability and political stability.

Recently, Somaliland's minister of energy and minerals (Hussein Abdi Dualeh) openly professed during an African mining conference that Somaliland was better without foreign aid and did not even need it: "*That is a blessing in disguise. Aid never developed anything…Aid is not a panacea, we'd rather not have it….How many African countries do you know that developed because of a lot of aid? It's a curse. The ones that get the most aid are the ones with the problems….We've been left to our own devices. We are our own people and our own guys. We pull ourselves up by our own bootstraps. We owe absolutely nothing to anybody. We would not change hands with Greece today. We have zero debt*" (Stoddard, 2014). Before Eubank, the 'Bottom Billion' and 'Dead Aid' by Collier (2007) and Moyo (2009) respectively had also received tremendous feedbacks from policy making and academic circles.

Collier has postulated that because most aid-recipient countries are fragile, weak in governance, inter alia, aid handled through the Official Development Assistance (ODA) Program has not had the desired effect. According to this narrative, aid-disbursement mechanisms have not been effective because of four main traps: (i) landlocked with bad neighbors, (ii) conflicts, (iii) management and dependence on natural resource, and (iv) weak governance in small countries. The thesis further sustains that the Bottom Billion in poverty are benefiting less on development strategies based on adapting ODAs to a certain benchmark of donor Gross National Income (GNI). The narrative is also broadly in accordance with the position that foreign aid promotes a 'regional public bad' and there appears to be no 'regional public good' effect offsetting the

'public bad' emanating from arms race scenarios in neighboring states (Collier & Hoeffler, 2007).

Moyo's 'Dead Aid' is another accomplished representation that has reignited polemics on the appealing effects of development assistance. Her book, which emphasizes that aid has augmented dependency, corruption and poverty in Africa has also received many reactions from policy makers and scholars. Whereas, her thesis has been partially supported by a plethora of recent literature using updated data (Banuri, 2013; Marglin, 2013; Wamboye et al., 2013; Asongu, 2012a; Asongu & Jellal, 2013; Ghosh, 2013; Krause, 2013; Asongu, 2014a; Titumir & Kamal, 2013; Monni & Spaventa, 2013), there is also some moderate consensus on the unsoundness of some of her positions. Accordingly, the classic questions she addresses (for example, the relationship between aid and accountability) and some of her criticisms of the way she uses aid to support her arguments (e.g. the rate at which the coincidence between low growth rate and high flows are juxtaposed for evidence that the former is most likely the origin of the latter). These have been used by her opponents and/or defenders of foreign aid. Whereas this narrative does not concern humanitarian and emergency relief assistance, there have been spates of responses among which the two arguments merit some emphasis. *First*, Sachs (2009) has argued that foreign aid is necessary at the tender stage of development and has presented two emotional anti-theses. First, in his opinion, Moyo does not have the moral values to advocate her position because she was awarded scholarships to study at the top world universities (Oxford and Harvard) and later in life thinks it is wrong to give a $10 aid to an African child for an anti-malaria bed net. Second, the book substantially fails to consider stark realities like, the universal need of help at one point in life in one way or another. *Second*, Bill Gates (an American business magnate now philanthropist) has taken the anti-thesis a stride further by qualifying 'Dead Aid' as a 'promotion of evil'. According to him, Moyo's position is morally repugnant because she appears neither to know what aid is doing nor much about development assistance.

The Eubank (2012) Somaliland-based hypothesis has also been celebrated with the award of the best paper from the Journal of Development Studies in 2013. According to him, the dependence of the state on local tax revenues provides taxpayers with a substantial leverage to demand from government more accountable political institutions and better representation. This thesis has crucial policy relevance in Africa because Somaliland is ineligible for development assistance, but has relatively less inter-state conflict and more political accountability. It is

interesting to note that the hypothesis is based on literature without any empirical assessment. Hence, putting some figures to the facts as this paper aims to do, would take the debate to a further height and enhance policy guidance on the validity of the hypothesis in the African continent. Indeed, the theoretical foundations of the debate are profoundly engrained in the history of economic thought. According to the narrative, the hypothesis originated from negotiations between autocratic governments who were in need of tax revenues (to survive inter-state wars) and citizens who were only willing to consent to taxation in exchange for greater public service delivery and more government accountability (Moore, 2008; Eubank, 2012).

The principal contribution of this study to the literature is to investigate the Eubank Somaliland-based hypothesis in the context of Africa. The research assesses the validity of the postulation that in the absence of foreign aid, there is a more appealing or positive relationship between tax revenues and political governance[2]. The paper is organized as follows. Section 2 discusses the connections among aid, institutions and development that are relevant to the context of the paper. In Section 3, the study discusses the data and outlines the methodology. Section 4 covers the empirical analysis. The research concludes with Section 5.

2. Aid, institutions and development

The interesting literature on aid and development in Africa has substantially documented the poor quality of institutions to be one of the main causes of poverty. Notably, high corruption, political instability, the absence of property rights, regulatory environments unfriendly to investment, unappealing conditions for contract enforcement, and weak courts (Easterly, 2005). According to Easterly, in order for poverty to be mitigated, more advanced countries have to promote credible institutions and political governance (Alesina & Dollar, 2000; Knack, 2001; Alesina & Weder, 2002; Dixit, 2004; Djankov et al., 2005; Jellal & Bouzahzah, 2012; Asongu, 2012b,2013a; Asongu & Jellal, 2013). The extensive literature on the interconnection between aid and institutions has centered around three main themes for over half a century. *First*, many have assessed the interesting concern as to whether or not more aid is granted to countries with

[2] "*For years, studies of state formation in early and medieval Europe have argued that the modern, representative state emerged as the result of negotiations between autocratic governments in need of tax revenues and citizens who were only willing to consent to taxation in exchange for greater government accountability. This article presents evidence that similar dynamics shaped the formation of Somaliland's democratic government. In particular, it shows that government dependency on local tax revenues – which resulted from its ineligibility for foreign assistance – provided those outside the government with the leverage needed to force the development of inclusive, representative and accountable political institutions*" (Eubank, 2012, p.1).

better institutions. *Second* some investigations apply to the anxiety of how foreign aid affects the quality of institutions in recipient countries. *Third* other examinations look at the challenging preoccupation of how aid can be used as an instrument for the improvement of institutions in recipient countries.

The positioning of the paper on the Eubank hypothesis is consistent with the second strand above. As we have already highlighted, much scholarly attention has been devoted to investigating how aid affects the quality of institutions essentially because government expenditure originating from local taxes is far below foreign aid and the latter decreases government dependence on local tax revenues and weakens the quality of institutions (Asongu, 2013a). The latter effect converges with the Eubank hypothesis on political governance. Whereas there is already a solid consensus on the appealing relationship between tax dependency and political governance (Jensen & Wantchekon, 2004), the incidence of development assistance on the quality of institutions has been subject to intense debate (Brautigam & Knack, 2004; Asongu & Jellal, 2013). Hence, by extending the underlying hypothesis, this paper also complements an extensive literature that has already documented the theoretical and empirical foundations of the hypothesis (Morton, 1994; Mahon, 2004; Moore, 2008; Timmons, 2005; Bernstein & Lu, 2008; Prichard, 2009).

In light of the above, whereas the relation between political governance and revenue bargaining has been covered in the literature, to the best of our knowledge the absence of a study that has been dedicated to the whole African continent is a sound justification to examine the Eubank hypothesis. Many of the studies have partially or fully concluded that development assistance should be limited in the continent, so that Africa should be left to chart its own course of development (Morton, 1994; Collier, 2007; Moyo, 2009). The State's dependence on local tax revenues generally leads to better provision of public services and enforcement of property rights (Timmons, 2005). This hypothesis on revenue bargaining in political governance has been confirmed in Latin America (Mahon, 2004) and in later studies on domestic institutions (Mahon, 2005). A narrative also verified and broadly validated in Ghana (Prichard, 2009), China (Bernstein & Lu, 2008) and contemporary developing nations (Moore, 2008).

The above scope is consistent with a growing strand of the political economy literature suggesting a rethinking of aid-based development models. The Amin (2013) stance on the possibility of neocolonial interest at the center of grand aid is in accordance with the position of

Ndlovu-Gatsheni (2013) on Africa's entrapment in a web of large scale colonial matrices of power and with Kindiki (2011) on the urgent imperative for Africa to strategically overcome its dependence on international wheels of power. According to Amin, development should not be reduced to acceptance or refusal of the Washington consensus or what donors think is good for the African continent. He is joined by Obeng-Odoom (2013) on the position that there is genuine need for a through process in which real African needs are clearly articulated.

The highlighted Eubank (2012) hypothesis is discussed in more detail before the empirical analysis. According to the author, the theoretical foundations substantially originate from government's dependence on local tax revenues. Hence, the government is obliged to make political concessions in terms of governance and accountability in exchange for tax income. The adage of 'no taxation without representation' clearly justifies this compromise between taxation and political leadership because it procures for the electorate the leverage of asking for greater political representation, voice and accountability. Since the thesis is more relevant in states that lack natural resources, the study should improve scholarly understanding of how governments can improve the climate for investment by means of credible accountable and representative institutions. The narrative further shows that under financial stress, the trade-off between taxation and political concessions is the most optimal means of collecting tax income. Thus, the hypothesis of Somaliland is a new theoretical illustration of the relation between political accountability and tax income in contemporary sub-Saharan Africa (SSA). In summary, verifying the hypothesis improves how much we know already about foreign aid as an instrument that disrupts the solidification of representative institutions due to poor revenue bargaining (or taxation in exchange for improvements in political governance). But, essentially the most appealing justification for investigating the hypothesis is a request for further research by Eubank himself. He has warned that the findings should not be construed as relevant to Africa unless they are backed by empirical validity.

3.1.1 Dependent, independent and control variables therefrom

The study investigates a panel of 53 African countries with data from the Development Indicators of the World Bank for the period 1996-2010. The focus on Africa is to extend the debate on the effect of foreign aid on institutions by Okada & Samreth (2012), Asongu (2012a, 2013a), and

Asongu & Jellal (2013)[3]. The choice of this periodicity is because political governance indicators are only available from the year 1996. The data consists of three year averages in non-overlapping intervals (NOI) to mitigate any short-run disturbances[4]. There are at least three advantages to the use of data average to (a) fulfill a primary condition for the employment of a GMM strategy (N>T) (Tchamyou et al., 2019); (b) restrict over-identification (difference between instruments and endogenous explaining variables) or instrument proliferation, such that the number of instruments is less than the number of cross-sections in post-estimation diagnostic tests (Tchamyou & Asongu, 2017); and (c) mitigate potential business cycle disturbances (Islam, 1995). The original dataset is based on yearly observations and the three-year averages are an arbitrary choice. With the three-year averages, estimated coefficients are interpreted as short-run effects (Batuo et al., 2010).

In the light of the above, the use of three-year averages enables us to exploit more degrees of freedom while at the same time limiting the potential for instrument proliferation from GMM regressions (Efobi et al., 2019). Such instrument proliferation substantially biases estimated coefficients. Hence, a delicate balance is needed between the advantage of exploiting more degrees of freedom and the shortcoming of biasing estimated coefficients if T is too large (T being the number of data points in each cross- section). For instance, the use of two-year data averages results in instrument proliferation. This narrative on the need to strike a delicate balance between instrument proliferation and desire to exploit degrees of freedom in the choice of the order of non-overlapping interval is consistent with recent empirical literature (Asongu, 2014b).

The dependent variable is political governance (voice and accountability and political stability). Political governance within the context of the study is defined as the election and replacement of political leaders: "*The first concept is about the process by which those in authority are selected and replaced (Political Governance): voice and accountability and political stability*" (Andres *et al*., 2015, p. 1041). The constituent variables are in line with the definition of political governance in Kaufmann *et al*. (2010) and Andrés *et al*. (2015). To these

[3] For more insights into the heated debate on the incidence of foreign aid on corruption and/or institutional quality, please refer to Okada & Samreth (2012), Asongu (2012a, 2013a), and Asongu & Jellal (2013). Accordingly, Asongu (2012a) has invalidated the Okada & Samreth (2012) results in Africa. In response to criticisms arising therefrom, he has further used conditional (Asongu, 2013a) and indirect channels (Asongu & Jellal, 2013) to fully and partially confirm his findings respectively.

[4] We have five-three year NOIs: 1996-1998; 1999-2001; 2002-2004; 2005-2007 & 2008-2010.

constituent indicators the study adds a composite indicator of political governance that is obtained through principal component analysis (PCA) in section 3.2.1 below.

Criticisms might arise on the source of World Governance Indicators (WGI) because it limits the periodicity from 1996-2010 and consists of data normalised on a yearly basis. Hence, other governance- related data from other sources (Polity IV, Freedom House, and ICRG [International Country Risk Guide]) could be presented as an opportunity to extend the observation period considerably. The research addresses these concerns in three ways. *First*, as emphasised above, the study has used the World Bank measurement of political governance which consists of 'voice and accountability' and 'political stability/no violence'. *Second*, the constraint of a short-time span is consistent with the adopted empirical GMM estimation strategy (where N or the number of cross- sections is large and T is small)[5]. *Third*, to the best of our knowledge, Polity IV and Freedom House indicators are also yearly measurements. Moreover the latter set of indicators displays very low relative variability. The conception of the former (Polity IV) has varied with time. It was designed originally as a proxy for the durability of political systems. In later years, however, the concept has been broadened in analytical scope to incorporate 'regime type' concerns.

It is worth clarifying that the WGI of the World Bank reports individual and aggregate indicators of governance for more than two hundred territories and countries in six dimensions, notably: "voice and accountability" and political stability/no violence (reflecting political governance); government effectiveness and regulatory quality (denoting economic governance) and corruption-control and the rule of law (representing institutional governance). These aggregate governance indicators entail a combination of views from a substantial number of enterprises, experts and citizen survey respondents in developing and industrial countries. The indicators are combined from a variety of institutes, non-governmental organisations, think-tanks, private sector firms and international organisations. While the first component of political governance which is relevant to this study has been defined above, *"The second has to do with the capacity of government to formulate and implement policies, and to deliver services (Economic Governance): regulatory quality and government effectiveness. The last, but by no means least, regards the respect for citizens and the state of institutions that govern the*

[5] N refers to the number of cross-sections whereas T denotes the number of periods in every cross-section.

interactions among them (Institutional Governance): rule of law and control of corruption" (Andres *et al*., 2015, p. 1041).

Official Development Assistance (ODA) is the first main independent variable of interest (Okada & Samreth, 2012; Asongu & Jellal, 2013). The research uses three main ODA indicators for robustness purposes, notably: Total Net Official Development Assistance (NODA), NODA from Multilateral Donors (MD), and NODA from the Development Assistance Committee (DAC) countries. Whereas the first is used in the empirical section, the second and third are employed for robustness checks to assess the consistency of results. It is important to note that the form of aid investigated here is financial development assistance. Accordingly, making this distinction is important for policy orientation (Martinussen, 1997; Degnbol-Martinussen & Engberg-Pedersen, 2003). The second main independent variable of interest is the proxy for taxation: Total tax revenues as a percentage of GDP (Jellal & Asongu, 2013).

Consistent with the aid-development literature, the study controls for press freedom, public investment and inflation. Accordingly, the theoretical and empirical foundations of the investment and fiscal behavior channels have been substantially documented in the aid literature (Rostow, 1960; Chenery & Strout, 1966; Mosley et al., 1992; Reichel, 1995; Boone, 1996; Gomane et al., 2003; Mosley et al., 2004 ; Larrain & Tavares, 2004; Addison et al., 2005; Easterly, 2005; Bird, 2007; Baliamoune-Lutz & Ndikumana, 2008; Morrissey, 2012; Benedek et al., 2012; Jellal & Asongu, 2013). Accordingly, the theoretical underpinnings of foreign aid are fundamentally needed to bridge the financial gap (Rostow, 1960; Chenery & Strout, 1966). Foreign aid is necessary to boost public investment (Easterly, 2005). Asongu & Jellal (2003) have used fiscal behaviour and investment mechanisms to assess the effect of foreign aid on corruption (Asongu & Jellal, 2013). While the research expects press freedom and public investment to increase political governance, high inflation (especially in consumer prices) should have the opposite effect. The expected signs of the control variables are broadly consistent with recent governance and foreign aid literature (Asongu & Nwachukwu, 2016a, 2016b). The study also controls for the unobserved heterogeneity in terms of time-effects.

3.1.2 Categorization of countries for consistency and robustness checks

In order to improve the subtlety of the analysis, the richness of our dataset allows us to subdivide the panel into various characteristics that are fundamental to foreign aid: income-

levels, legal origins, natural resources and openness to the sea. These characteristics have been recently documented as instrumental to foreign aid (Asongu, 2014a). This categorization is in line with recent African institutional literature (Weeks, 2012; Asongu, 2014b).

First, the intuition for legal origins has foundations in the law literature (La Porta et al., 1998; La Porta et al., 1999) that has been recently used in the African literature (Asongu, 2014b). Classification of this category is in line with La Porta et al (2008, p. 289). *Second*, countries that are not open to the sea have lower political governance because there is an institutional price for being landlocked (Arvis et al., 2007). *Third*, there are two justifications for controlling for wealth-effects (1) it is very likely that economic prosperity has an incidence on political governance, especially when the fruits of the prosperity are not evenly distributed and (2) income-levels are instrumental in the quality of governance in Africa (Asongu, 2012b). Classification of countries in this category is with the help of the Financial Development and Structure Database (FDSD) of the World Bank.

Fourth, the study uses petroleum-exporting countries as the main criterion for the natural resource category. In the classification of this category, several concerns arise. (1) The qualification of countries in this category may be time-dynamic due to: (a) recent discovery of petroleum or (b) a considerable decline in oil exports. (2) There are some countries with similar macroeconomic characteristics as petroleum-exporting countries (e.g. Botswana with diamonds). To tackle these concerns, the research takes a minimalist approach by (a) including only states for which exports have been petroleum-dominated in the sampled countries for more than a decade and (b) limiting the resource-category strictly and exclusively to countries that export petroleum. Accordingly, countries exporting petroleum for which such exports constitute at least 10% of annual GDP are considered as petroleum-exporting in the light of the above criteria. The resource categorization approach has been used in the attendant African comparative literature (Weeks, 2012; Asongu et al., 2019).

In the classification of countries above, a country could fall within many categories at the same time because no constraints of categorical priority are imposed. Therefore a country may be in more than one category as long as it has the necessary features that are relevant for being identified with the category in question.

The definition of variables, summary statistics (with presentation of countries), correlation analysis and categorization of countries are detailed in the appendices: Appendix 1,

Appendix 2, Appendix 3 and Appendix 4 respectively. From the summary statistics, it can be inferred that plausible estimated relationships could be obtained because of the reasonable degree of variation in the indicators. The correlation analysis has two purposes: (i) to mitigate concerns of multicollinearity in the same specification and (ii) to confirm the degree of substitution between political governance and foreign aid variables. Moreover, the degree of substitution (0.541) between public investment and tax revenue does not pose any substantial issue of multicollinearity.

The outliers displayed by the summary statistics on the governance indicators do not significantly influence the findings. While theoretically governance indicators from the World Bank range from -2.5 (worst performance) to +2.5 (best performance), some issues in data collection may arise. For instance, with regard to political stability/no violence, this is the case with: (i) Somaliland from 2004 to 2010 where the minimum values are lower than -2.5, (ii) the Domestic Republic of Congo in 1998 where the minimum value is -3.056, and (iii) Sudan in 2010 where values for 2009 and 2010 are respectively -2.646 and -2.700. While in the estimation process Somaliland is not considered because of missing observations in other variables, the other three outliers in political stability do not significantly affect the findings. Whereas this explanation extends to the political governance indicator which has a minimum value of -3.204, it does not apply to voice and accountability because its minimum and maximum values are within the World Bank range.

3.2 Methodology

3.2.1 Principal component analysis

There could be some redundancy in information because of the high degree of correlation in voice and accountability and political stability constituting political governance. Therefore the study employs Principal Component Analysis (PCA) to mitigate the dimensions of the political governance variables. The PCA has been widely employed to reduce a large set of highly correlated variables into a smaller set of uncorrelated variables called principal components (PCs) that denote a substantial proportion in the variability of the initial dataset. The criterion used to reduce the dimensions of the variables is to retain only PCs with eigenvalues that are greater than one or the mean (Kaiser, 1974; Jolliffe, 2002; Tchamyou, 2017, 2019a). In this light, the first PC

in Table 1 below has an eigenvalue of 1.659 and represents about 82 percent of information from the constituent indicators. This first PC is the political governance indicator (*Polgov*).

Table 1: Principal Component Analysis (PCA) for the Political Governance index (Polgov)

Principal Components	Component Matrix (Loadings)		Proportion(s)	Cumulative Proportion(s)	Eigen Value(s)
	VA	PS			
First P.C	0.707	0.707	0.829	0.829	1.659
Second P.C	-0.707	0.707	0.170	1.000	0.340

P.C: Principal Component. VA: Voice and Accountability. PS: Political Stability. P.C: Principal Component.

3.2.2 Estimation technique: system GMM

There are many appealing sides and one principal setback in using dynamic panel estimation in comparison to other cross-country analyses (Demirgüç-Kunt & Levine, 2008; Asongu, 2013b; Tchamyou, 2019b). The main arguments for using the dynamic system GMM are that it: (1) mitigates the biases of the difference estimator in small samples, (2) does not eliminate cross-country differences and (3) controls for endogeneity in all regressors (Oluwatobi et al., 2018; Agoba et al., 2019). However, the principal downside of this approach is the employment of data-averages such that estimated coefficients are interpreted as short-run effects and not long-run impacts (Batuo et al., 2010). Hence, based on this empirical underpinning, the Eubank hypothesis is being investigated in the short-run.

The two equations below in levels (1) and first difference (2) summarize the estimation procedure.

$$PG_{i,t} = \sigma_0 + \sigma_1 PG_{i,t-1} + \sigma_2 A_{i,t} + \sigma_3 T_{i,t} + \sigma_4 AT_{i,t} + \sigma_5 F_{i,t} + \sigma_6 I_{i,t} + \sigma_7 P_{i,t} + \eta_i + \xi_t + \varepsilon_{i,t} \quad (1)$$

$$PG_{i,t} - PG_{i,t-1} = \sigma_1 (PG_{i,t-1} - PG_{i,t-2}) + \sigma_2 (A_{i,t} - A_{i,t-1}) + \sigma_3 (T_{i,t} - T_{i,t-1}) + \sigma_4 (AT_{i,t} - AT_{i,t-1})$$
$$+ \sigma_5 (F_{i,t} - F_{i,t-1}) + \sigma_6 (I_{i,t} - I_{i,t-1}) + \sigma_7 (P_{i,t} - P_{i,t-1}) + (\xi_t - \xi_{t-1}) + (\varepsilon_{i,t} - \varepsilon_{i,t-1}) \quad (2)$$

where 't' represents the period and 'i' stands for a country. PG is Political governance; A, Foreign aid; T, Tax revenues; AT, interaction between Foreign aid (*A*) and Tax revenues (*T*); F, Press freedom; I, Inflation; P, Public investment; η_i is a country-specific effect; ξ_t is a time-specific constant and $\varepsilon_{i,t}$ an error term. It should be noted that the conditions for

employing a GMM estimation strategy are satisfied because we have used three-year NOI: N>T (53>5) (Tchamyou et al., 2018).

The procedure consists of jointly estimating the equations in levels with those in first difference, hence, exploiting all the orthogonal conditions between error term and the lagged endogenous variable. Consequently, lag levels of the regressors are used as instruments in the difference equation and lagged differences of the regressors as instruments in the level equation. Preference is given to system GMM (Arellano & Bover, 1995; Blundell & Bond, 1998; Fosu & Abass, 2019) as opposed to difference GMM (Arellano & Bond, 1991) in accordance with recent literature (Bond et al., 2001, pp. 3-4; Asongu, 2013c, p. 49)[6]. In specifying the equations, a *two-step* procedure is preferred to *one-step* because it controls for heteroscedasticity. In order to validate the models, two tests are used as information criteria: the autocorrelation test with a null hypothesis on the absence autocorrelation in the residuals and; the Sargan overidentifying restrictions (OIR) test with a null hypothesis for the validity of instruments. In a bid to avoid the proliferation of instruments in the Sargan OIR test, the study ensures that instruments are less than the number of cross-sections in almost all the regressions. The study does not control for time-effects in certain specifications only to void issues of exact multicollinearity and significant autocorrelation tests.

With GMM, one would normally expect a deeper lag structure with more than one lag. In the context of this paper, when the lag structure in the GMM specification is increased, while the results do not change significantly, the AR(2) test as an information criterion becomes 'not applicable'.

3.2.3 Information criteria for validity of underlying hypothesis

Before presenting the results, it is important to discuss the information criteria for the validity of underlying hypothesis. Accordingly, the Eubank hypothesis is valid with a substitution effect, which we discuss in two strands: the mainstream criteria and insights from Brambor et al. (2006).

[6] "*We also demonstrate that more plausible results can be achieved using a system GMM estimator suggested by Arellano & Bover (1995) and Blundell & Bond (1998). The system estimator exploits an assumption about the initial conditions to obtain moment conditions that remain informative even for persistent series, and it has been shown to perform well in simulations. The necessary restrictions on the initial conditions are potentially consistent with standard growth frameworks, and appear to be both valid and highly informative in our empirical application. Hence we recommend this system GMM estimator for consideration in subsequent empirical growth research*". Bond et al. (2001, pp. 3-4).

First, on the standard criteria, in accordance with Tchamyou and Asongu (2017) and Osabuohien and Efobi (2013, p. 299), a negative interaction effect implies a substitution impact. On the other hand, a positive interaction effect means that aid and taxation are complementary in improving political governance.

Second, Brambor et al. (2006) have provided guidelines on how to avoid some pitfalls in mainstream interpretation of interaction variables. We are consistent with some of the criteria by incorporating all constitutive variables in some specifications while at the same time controlling for concerns of multicollinearity in other specifications. However, while the joint test (Wald) for the combined significance of constitutive variables has been consistently provided, the interpretation of significance in the marginal effects has not been extended to graphs for the following reason. For the graphs to really make sense economically, we need some range of the modifying variable (see Footnote 14 of Brambor et al., 2006). While the effective number of presidential candidates used in Brambor et al. (2006) may vary from 1 to 6 in the real world (Figure 3, page 76), the range of foreign aid to GDP may not really apply to the Somaliland based hypothesis because the country is receiving zero official development assistance. It should be noted that while a graph should logically help in determining the range of the modifying variable (foreign aid) for which the interactive marginal effect holds, the motivation of the exposition is 'foreign aid versus no foreign aid' and not the 'thresholds of foreign aid for which the Eubank hypothesis holds'.

It is also worthwhile to highlight contemporary taxation and aid. The effects of taxation and foreign aid on the dependent variables are not contemporaneous. This is essentially because the specifications consist of regressing the dependent variables in period 't' on independent variables of lagged periods. Hence, in the system GMM specification, in order to exploit all the orthogonality conditions between the lagged endogenous variable and the error term, lagged levels of the regressors are employed as instruments in the *difference* equation and lagged differences of the regressors employed as instruments in the *level* equation.

4. Empirical Analysis, Discussion and Policy Implications

4.1 Presentation of results

Table 2 below presents baseline regressions. For each of the governance variables, while the first two specifications control for multicollinearity, the last specification incorporates the

Brambor et al. (2006) caution of including all constitutive terms. Based on the results, the following could be established. *First,* foreign aid positively affects political governance, taxation is appealing for political governance, and the interaction between taxation and aid improves political governance. Evidence of a complementary effect or absence of a substitution effect further implies the Eubank hypothesis is invalid in the baseline regressions, contrary to Asongu (2015)[7]. Second, the models are valid because the null hypotheses of the autocorrelation and Sargan OIR are overwhelmingly rejected. The findings are not biased by issues of instrument proliferation in the over-identifying restrictions because the number of instruments is substantially lower than the number of cross-sections (countries). Third, the significant control variables have the expected signs: stable inflation increases political governance while press freedom has the opposite effect. Stable inflation is likely to increase political governance because it provides enabling conditions for the peaceful and non-violent election and replacement of political leaders. The inference is premised on the fact that rising food prices can influence violent-related changes to political regimes[8]. When interpreting the signs of the press-freedom estimated coefficients, it is important to note that Freedom House, from which the data is obtained, reports press freedom values in decreasing magnitude. Hence, countries enjoying the highest levels of press freedom have the lowest reported values of political governance (Andrés & Asongu, 2013, p. 674). A possible reason for inflation increasing political governance is because it is relatively stable across samples. For example, the median inflation rate without Zimbabwe is 5.43%.

In Tables 3-4 below, Eubank's hypothesis is rejected in Low income and English common law countries. No decisions are taken for their Middle income and French civil law

[7] It is important to note that the current exposition steers clear of Asongu (2015) in at least four dimensions: use of data averages, restriction of identification, extension to fundamental characteristics of African development and interpretation of results as short-term effects.

[8] "*In retrospect, the rapid inflation in global food prices since 2000 and its acceleration between 2007-08 has shown that price shocks can pose significant threats to political stability in the developing world. "We will take to the streets in demonstrations or we will steal," a 30-year old woman said in 2008 as she queued outside a bakery in Egypt. Demonstrations and riots linked to consumer prices took place in over 30 countries between 2007-08. The Middle East witnessed titled, "Irregular Use of Limbe City Council Property, 13 food riots in Egypt, Jordan, Morocco and Yemen. In Ivory Coast, thousands marched to the home of President Laurent Gbagbo chanting: " we are hungry", "life is too expensive", "you are going to kill us"… etc Similar demonstrations ensued in many other African countries, including Ethiopia, Burkina Faso, Senegal, Mozambique, Mauritania, Cameroon and Guinea. In Latin America, violent clashes over rising food prices occurred in Guatemala, Peru, Nicaragua, Bolivia, Argentina, Mexico and the Haitian prime minister was even toppled following food riots. In Asia, people took to the streets in Bangladesh, Cambodia, Thailand, India and the Philippines. Even North Korea experienced an incident in which market women gathered to protest against restrictions on their ability to trade in food*" (Asongu, 2012c, pp. 49).

counterparts respectively. Specifications of the models are sound (instruments less than cross-sections) and the estimated models also robust (null hypotheses of the information criteria overwhelmingly rejected). Most of the significant control variables have the expected signs.

Table 2: Baseline regressions (Africa)

	African Countries								
	Political Stability (No Violence)			**Voice & Accountability**			**Political Governance (Polgov)**		
Initial (-1)	**0.813*** **	**0.797*** **	**1.070*** **	**0.889*** **	**0.841*** **	**0.591*** **	**0.860*** **	**0.904*** **	**0.936*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Constant	**-0.294****	-0.248	-0.313	-0.133	-0.124	**0.539*** **	**-0.205****	**-0.135***	0.071
	(0.034)	(0.151)	(0.271)	(0.411)	(0.536)	**(0.009)**	**(0.011)**	**(0.093)**	(0.917)
Aid (NODA)	0.004	---	0.009	**0.003****	---	0.0009	**0.006*** **	---	0.008
	(0.143)		(0.334)	**(0.029)**		(0.816)	**(0.000)**		(0.459)
Tax revenues	**0.007****	0.006	0.002	-0.0005	-0.001	0.001	**0.005*** **	**0.004***	0.004
	(0.042)	(0.151)	(0.725)	(0.747)	(0.476)	(0.588)	**(0.005)**	**(0.061)**	(0.340)
Aid* 'Tax revenues'	---	0.000	-0.000	---	0.000	-0.000	---	**0.0001***	-0.0001
		(0.355)	(0.971)		(0.449)	(0.801)		**(0.078)**	(0.636)
Press Freedom	---	---	0.001	---	---	**-0.014*** **	---	---	-0.004
			(0.753)			**(0.000)**			(0.613)
Inflation	---	---	0.0002	---	---	-0.0002	---	---	-0.0001
			(0.813)			(0.550)			(0.875)
Public Investment	---	---	0.008	---	---	-0.005	---	---	0.002
			(0.728)			(0.403)			(0.918)
Times Effects	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AR(2)	**(0.448)**	**(0.492)**	**(0.462)**	**(0.428)**	**(0.433)**	**(0.512)**	**(0.278)**	**(0.319)**	**(0.887)**
Sargan OIR	**(0.115)**	**(0.104)**	**(0.224)**	**(0.564)**	**(0.172)**	**(0.595)**	**(0.792)**	**(0.692)**	**(0.286)**
Wald (Joint)	**106.36*** **	**93.65*** **	**458.15*** **	**491.5*** **	**266.1*** **	**1564.4*** **	**129.0*** **	**99.19*** **	**1901.9*** **
Instruments	12	12	18	15	15	19	15	15	19
Countries	41	41	30	41	41	30	41	41	30
Observations	151	151	100	151	151	100	151	151	100

***, **, and * indicate significance at 1%, 5% and 10% levels respectively. AR(2): Second Order Autocorrelation test. OIR: Overidentifying Restrictions test. Initial (-1): lagged dependent variable. Aid: Net Official Development Assistance. The significance of bold values is twofold. 1) The significance of estimated coefficients and the Wald statistics. 2) The failure to reject the null hypotheses of: a) no autocorrelation in the AR(2) tests and; b) the validity of the instruments in the Sargan OIR test. P-values in brackets.

Table 3: Income levels (System GMM with Total Aid)

Panel A: Low Income Countries

	Political Stability (No Violence)			Voice & Accountability			Political Governance (Polgov)		
Initial (-1)	**0.856*** **	**0.858*** **	**0.971*** **	**0.833*** **	**0.940*** **	**0.526*** **	**0.941*** **	**1.016*** **	**0.714*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.004)**	**(0.002)**	**(0.000)**	**(0.000)**	**(0.001)**
Constant	**-0.339*** **	**-0.195***	-0.318	-0.159	-0.019	0.364	**-0.260** **	-0.147	0.764
	(0.000)	**(0.089)**	(0.231)	(0.435)	(0.958)	(0.287)	**(0.017)**	(0.177)	(0.453)
Aid (NODA)	**0.008** **	---	0.012	**0.004*** **	---	0.008	**0.009*** **	---	0.0009
	(0.010)		(0.222)	**(0.000)**		(0.474)	**(0.000)**		(0.977)
Tax revenues	**0.007** **	0.002	0.008	-0.001	-0.003	0.005	0.002	-0.0006	-0.003
	(0.031)	(0.615)	(0.419)	(0.760)	(0.727)	(0.571)	(0.716)	(0.918)	(0.880)
Aid* 'Tax revenues'	---	**0.0002***	-0.0001	---	0.000	-0.0003	---	**0.0001*** **	0.0002
		(0.074)	(0.816)		(0.679)	(0.524)		**(0.006)**	(0.875)
Press Freedom	---	---	-0.0008	---	---	**-0.015** **	---	---	**-0.013** **
			(0.798)			**(0.012)**			**(0.044)**
Inflation	---	---	0.0001	---	---	0.0003	---	---	-0.001
			(0.857)			(0.674)			(0.698)
Public Investment	---	---	0.002	---	---	-0.003	---	---	-0.005
			(0.927)			(0.780)			(0.855)
Times Effects	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AR(2)	**(0.132)**	**(0.147)**	**(0.996)**	**(0.515)**	**(0.620)**	**(0.777)**	**(0.178)**	**(0.188)**	**(0.895)**
Sargan OIR	**(0.620)**	**(0.527)**	**(0.475)**	**(0.793)**	**(0.258)**	**(0.270)**	**(0.836)**	**(0.715)**	**(0.205)**
Wald (Joint)	**58.93*** **	**47.79*** **	**7119.1*** **	**133.3*** **	**36.30*** **	**305.15*** **	**127.4*** **	**119.11*** **	**360.79*** **
Instruments	12	12	18	15	15	19	15	15	19
Countries	24	24	20	24	24	20	24	24	20
Observations	87	87	64	87	87	64	87	87	64

Panel B: Middle Income Countries

	Political Stability (No Violence)			Voice & Accountability			Political Governance (Polgov)		
Initial (-1)	**0.767*** **	**0.804*** **	**1.001***	**1.039*** **	**1.070*** **	0.306	**0.804*** **	**0.921*** **	0.379
	(0.000)	**(0.000)**	**(0.092)**	**(0.000)**	**(0.000)**	(0.106)	**(0.000)**	**(0.000)**	(0.509)
Constant	-0.096	-0.097	-0.381	-0.103	-0.090	**1.184*** **	-0.064	-0.025	2.902
	(0.352)	(0.122)	(0.723)	(0.255)	(0.250)	**(0.002)**	(0.489)	(0.926)	(0.485)
Aid (NODA)	-0.001	---	0.034	-0.0003	---	-0.001	0.004	---	-0.140
	(0.759)		(0.723)	(0.896)		(0.974)	(0.629)		(0.639)
Tax revenues	**0.005** **	**0.004***	0.004	**0.001** **	0.001	0.000	**0.004** **	0.003	-0.021
	(0.011)	**(0.055)**	(0.718)	**(0.035)**	(0.189)	(0.999)	**(0.042)**	(0.191)	(0.611)
Aid* 'Tax revenues'	---	-0.000	-0.000	---	0.000	0.000	---	0.000	0.003
		(0.984)	(0.991)		(0.993)	(0.914)		(0.808)	(0.582)
Press Freedom	---	---	0.003	---	---	**-0.028*** **	---	---	-0.034
			(0.795)			**(0.000)**			(0.345)
Inflation	---	---	-0.001	---	---	-0.0001	---	---	**-0.003***
			(0.622)			(0.564)			**(0.088)**
Public Investment	---	---	---	---	---	0.005	---	---	0.023
						(0.489)			(0.307)
Times Effects	Yes	Yes	No	Yes	Yes	No	No	Yes	No
AR(2)	**(0.750)**	**(0.752)**	**(0.896)**	**(0.599)**	**(0.592)**	**(0.438)**	**(0.925)**	**(0.822)**	**(0.299)**
Sargan OIR	**(0.440)**	**(0.432)**	**(0.870)**	**(0.439)**	**(0.425)**	**(0.980)**	**(0.482)**	**(0.536)**	**(0.806)**
Wald (Joint)	**175.84*** **	**176.70*** **	**na**	**162.11*** **	**235.8*** **	**13693*** **	**169.02*** **	**243.70*** **	**1653.4*** **
Instruments	15	15	15	15	15	16	12	15	16
Countries	17	17	10	17	17	10	17	17	10
Observations	64	64	37	64	64	36	64	64	36

***, **, and * indicate significance at 1%, 5% and 10% levels respectively. AR(2): Second Order Autocorrelation test. OIR: Overidentifying Restrictions test. Initial (-1): lagged dependent variable. Aid: Net Official Development Assistance. The significance of bold values is twofold. 1) The significance of estimated coefficients and the Wald statistics. 2) The failure to reject the null hypotheses of: a) no autocorrelation in the AR(2) tests and; b) the validity of the instruments in the Sargan OIR test. P-values in brackets.

Table 4: Legal origins (System GMM with Total Aid)

Panel A: English Common Law

	Political Stability (No Violence)			**Voice & Accountability**			**Political Governance (Polgov)**		
Initial (-1)	**0.755*** **	**0.759*** **	0.679	**0.847*** **	**0.831*** **	0.340	**0.949*** **	**0.880*** **	0.312
	(0.000)	**(0.000)**	(0.398)	**(0.000)**	**(0.000)**	(0.155)	**(0.000)**	**(0.000)**	(0.125)
Constant	-0.276	**-0.269***	-0.149	-0.118	-0.077	0.674	-0.136	-0.076	**1.104****
	(0.114)	**(0.089)**	(0.889)	(0.623)	(0.718)	(0.177)	(0.273)	(0.583)	**(0.027)**
Aid (NODA)	0.0004	---	0.005	**0.003****	---	0.017	**0.006****	---	0.004
	(0.865)		(0.925)	**(0.030)**		(0.496)	**(0.038)**		(0.906)
Tax revenues	0.003	0.003	-0.001	-0.0006	-0.001	0.006	-0.001	-0.001	0.012
	(0.411)	(0.459)	(0.968)	(0.851)	(0.757)	(0.310)	(0.667)	(0.721)	(0.394)
Aid* 'Tax revenues'	---	0.000	-0.0002	---	0.000	-0.0009	---	**0.0001****	-0.001
		(0.694)	(0.939)		(0.438)	(0.167)		**(0.026)**	(0.289)
Press Freedom	---	---	-0.005	---	---	**-0.023*** **		---	**-0.029*** **
			(0.429)			**(0.001)**			**(0.000)**
Inflation	---	---	0.007	---	---	**0.020*** **	---	---	**0.035****
			(0.710)			**(0.004)**			**(0.015)**
Public Investment	---	---	0.058	---	---	0.007	---	---	**0.072*** **
			(0.459)			(0.347)			**(0.000)**
Times Effects	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No
AR(2)	**(0.144)**	**(0.162)**	**(0.939)**	**(0.340)**	**(0.360)**	**(0.439)**	**(0.586)**	**(0.564)**	**(0.154)**
Sargan OIR	**(0.436)**	**(0.470)**	**(0.994)**	**(0.345)**	**(0.264)**	**(0.971)**	**(0.736)**	**(0.820)**	**(0.999)**
Wald (Joint)	**118.60*** **	**90.50*** **	**509.65*** **	**78.32*** **	**81.33*** **	**na**	**1395*** **	**320.0*** **	**1576.7*** **
Instruments	15	15	16	15	15	15	15	15	16
Countries	13	13	10	13	13	10	13	13	10
Observations	48	48	36	48	48	36	48	48	36

Panel B: French Civil Law

	Political Stability (No Violence)			**Voice & Accountability**			**Political Governance (Polgov)**		
Initial (-1)	**0.806*** **	**0.911*** **	**1.100*** **	**0.825*** **	**0.797*** **	**0.549*** **	**0.797*** **	**0.843*** **	**1.033*** **
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**	**(0.000)**
Constant	**-0.395*** **	-0.161	**-0.585****	-0.210	-0.167	**0.437*** **	-0.081	0.013	-0.512
	(0.000)	(0.380)	**(0.050)**	(0.318)	(0.352)	**(0.006)**	(0.532)	(0.920)	(0.443)
Aid (NODA)	**0.007***	---	**0.015***	0.003	---	0.002	**0.008***	---	**0.026***
	(0.085)		**(0.093)**	(0.339)		(0.531)	**(0.073)**		**(0.055)**
Tax revenues	**0.010****	**0.008****	**0.017*** **	0.0005	-0.001	0.0001	**0.005****	0.004	**0.022*** **
	(0.015)	**(0.017)**	**(0.000)**	(0.773)	(0.609)	(0.967)	**(0.033)**	(0.269)	**(0.000)**
Aid* 'Tax revenues'	---	0.000	-0.0001	---	0.0001	0.000	---	0.000	-0.0006
		(0.734)	(0.828)		(0.521)	(0.740)		(0.677)	(0.256)
Press Freedom	---	---	0.003	---	---	**-0.013*** **		---	0.001
			(0.493)			**(0.005)**			(0.900)
Inflation	---	---	0.0001	---	---	-0.0001	---	---	0.0002
			(0.858)			(0.586)			(0.854)
Public Investment	---	---	-0.006	---	---	-0.008	---	---	-0.018
			(0.697)			(0.106)			(0.132)
Times Effects	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
AR(2)	**(0.260)**	**(0.217)**	**(0.469)**	**(0.722)**	**(0.130)**	**(0.168)**	**(0.210)**	**(0.224)**	**(0.262)**
Sargan OIR	**(0.165)**	**(0.116)**	**(0.321)**	**(0.386)**	**(0.382)**	**(0.778)**	**(0.344)**	**(0.285)**	**(0.421)**
Wald (Joint)	**48.16*** **	**27.17*** **	**477.42*** **	**86.52*** **	**153.7*** **	**957.6*** **	**84.97*** **	**190.7*** **	**708.81*** **
Instruments	12	15	19	15	15	19	15	15	19
Countries	28	28	20	28	28	20	28	28	20
Observations	103	103	64	103	103	64	103	103	64

***, **, and * indicate significance at 1%, 5% and 10% levels respectively. AR(2): Second Order Autocorrelation test. OIR: Overidentifying Restrictions test. Initial (-1): lagged dependent variable. Aid: Net Official Development Assistance. The significance of bold values is twofold. 1) The significance of estimated coefficients and the Wald statistics. 2) The failure to reject the null hypotheses of: a) no autocorrelation in the AR(2) tests and; b) the validity of the instruments in the Sargan OIR test. P-values in brackets.

Table 5: Openness to Sea (System GMM with Total Aid)

Panel A: Landlocked Countries

	Political Stability (No Violence)			Voice & Accountability			Political Governance (Polgov)		
Initial (-1)	**0.839****	**0.873****	0.566	**0.664*****	**0.667****	0.411	**0.858*****	**0.865*****	**0.891***
	(0.039)	**(0.029)**	(0.270)	**(0.000)**	**(0.013)**	(0.126)	**(0.000)**	**(0.007)**	**(0.035)**
Constant	**-0.419****	-0.440	0.161	**-0.469****	-0.428	-0.461	**-0.486****	-0.296	-0.093
	(0.049)	(0.269)	(0.733)	**(0.042)**	(0.253)	(0.439)	**(0.020)**	(0.165)	(0.930)
Aid (NODA)	-0.002	---	-0.041	0.006	---	0.059	0.018	---	0.0007
	(0.907)		(0.267)	(0.570)		(0.154)	(0.397)		(0.986)
Tax revenues	0.008	0.008	0.001	**0.007***	0.005	**0.024***	**0.012***	0.006	0.001
	(0.319)	(0.567)	(0.897)	**(0.070)**	(0.430)	**(0.098)**	**(0.058)**	(0.579)	(0.934)
Aid* 'Tax revenues'	---	0.000	0.0009	---	0.000	-0.001	---	0.0006	0.0004
		(0.908)	(0.225)		(0.803)	(0.168)		(0.261)	(0.773)
Press Freedom	---	---	-0.007	---	---	**-0.017****	---	---	-0.003
			(0.388)			**(0.048)**			(0.856)
Inflation	---	---	0.003	---	---	0.014	---	---	0.017
			(0.626)			(0.156)			(0.219)
Public Investment	---	---	---	---	---	0.010	---	---	0.005
						(0.651)			(0.915)
Times Effects	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No
AR(2)	**(0.266)**	**(0.190)**	**(0.850)**	**(0.264)**	**(0.377)**	**(0.441)**	**(0.956)**	**(0.917)**	**(0.369)**
Sargan OIR	**(0.686)**	**(0.735)**	**(0.999)**	**(0.579)**	**(0.594)**	**(0.869)**	**(0.876)**	**(0.870)**	**(0.934)**
Wald (Joint)	**212.61*****	**178.16*****	**442.18*****	**63.37*****	**33.31*****	**464.41*****	**48.27*****	**48.01*****	**412.90*****
Instruments	15	15	18	12	15	16	15	15	16
Countries	11	11	10	11	11	10	11	11	10
Observations	41	41	35	41	41	35	41	41	35

Panel B: Not Landlocked Countries

	Political Stability (No Violence)			Voice & Accountability			Political Governance (Polgov)		
Initial (-1)	**0.737*****	**0.734*****	**1.063*****	**0.920*****	**0.918****	**0.454*****	**0.837*****	**0.896*****	**0.694*****
	(0.000)	**(0.000)**	**(0.000)**	**(0.000)**	**(0.011)**	**(0.009)**	**(0.000)**	**(0.000)**	**(0.000)**
Constant	**-0.310****	-0.252	-0.204	-0.037	-0.020	**1.006*****	-0.127	-0.061	1.019
	(0.043)	(0.114)	(0.518)	(0.783)	(0.934)	**(0.000)**	(0.145)	(0.496)	(0.128)
Aid (NODA)	**0.004***	---	**0.018***	**0.003****	---	0.003	**0.005*****	---	0.003
	(0.053)		**(0.061)**	**(0.035)**		(0.474)	**(0.000)**		(0.809)
Tax revenues	**0.008****	**0.007***	0.015	-0.002	-0.002	-0.0004	**0.003****	**0.002***	0.003
	(0.019)	**(0.068)**	(0.137)	(0.258)	(0.413)	(0.957)	**(0.036)**	**(0.077)**	(0.776)
Aid* 'Tax revenues'	---	0.000	-0.0007	---	0.000	-0.0001	---	0.000	-0.0002
		(0.210)	(0.131)		(0.697)	(0.580)		(0.126)	(0.702)
Press Freedom	---	---	-0.002	---	---	**-0.022*****	---	---	**-0.019****
			(0.697)			**(0.000)**			**(0.049)**
Inflation	---	---	**0.0003**	---	---	0.000	---	---	-0.0007
			(0.738)			(0.915)			(0.552)
Public Investment	---	---	0.009	---	---	-0.005	---	---	0.014
			(0.707)			(0.746)			(0.595)
Times Effects	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AR(2)	**(0.739)**	**(0.780)**	**(0.276)**	**(0.271)**	**(0.290)**	**(0.522)**	**(0.320)**	**(0.411)**	**(0.858)**
Sargan OIR	**(0.235)**	**(0.203)**	**(0.232)**	**(0.800)**	**(0.447)**	**(0.152)**	**(0.850)**	**(0.791)**	**(0.168)**
Wald (Joint)	**33.936*****	**25.84*****	**196.38*****	**402.7*****	**537.5*****	**1903.1*****	**116.1*****	**48.44*****	**2069.8*****
Instruments	12	12	19	15	15	18	15	12	18
Countries	30	30	20	30	30	20	30	30	20
Observations	110	110	65	110	110	65	110	110	65

***, **, and * indicate significance at 1%, 5% and 10% levels respectively. AR(2): Second Order Autocorrelation test. OIR: Overidentifying Restrictions test. Initial (-1): lagged dependent variable. Aid: Net Official Development Assistance. The significance of bold values is twofold. 1) The significance of estimated coefficients and the Wald statistics. 2) The failure to reject the null hypotheses of: a) no autocorrelation in the AR(2) tests and; b) the validity of the instruments in the Sargan OIR test. P-values in brackets.

Table 6: Resources (System GMM with Total Aid)

Panel A: Oil Exporting Countries

	Political Stability (No Violence)			Voice & Accountability			Political Governance (Polgov)		
Initial (-1)	**0.641*** (0.006)**	**0.624*** (0.000)**	na	**0.633*** (0.000)**	**0.604** (0.011)**	na	**0.661*** (0.000)**	**0.652*** (0.000)**	na
Constant	-0.643 (0.132)	**-0.742* (0.068)**	na	**-0.414* (0.071)**	**-0.404* (0.058)**	na	**-0.373* (0.081)**	**-0.450** (0.035)**	na
Aid (NODA)	-0.012 (0.614)	---	---	0.010 (0.295)	---	---	-0.010 (0.661)	---	---
Tax revenues	**0.014** (0.041)**	**0.016** (0.026)**	na	-0.003 (0.459)	-0.004 (0.324)	na	**0.006* (0.098)**	**0.007* (0.070)**	na
Aid* 'Tax revenues'	---	-0.0002 (0.741)	na	---	0.0003 (0.252)	na	---	-0.0002 (0.743)	na
Press Freedom	---	---	na	---	---	na	---	---	na
Inflation	---	---	na	---	---	na	---	---	na
Public Investment	---	---	na	---	---	na	---	---	na
Times Effects	No	No		No	No		No	No	
AR(2)	**(0.106)**	**(0.110)**		**(0.994)**	**(0.961)**		**(0.171)**	**(0.177)**	
Sargan OIR	**(0.977)**	**(0.987)**		**(0.968)**	**(0.958)**		**(0.960)**	**(0.967)**	
Wald (Joint)	**93.53*****	**108.06*****		**33.23*****	**30.48*****		**32.22*****	**30.22*****	
Instruments	12	12		12	12		12	12	
Countries	7	7		7	7		7	7	
Observations	22	22		22	22		22	22	

Panel B: Non-Oil Exporting Countries

	Political Stability (No Violence)			Voice & Accountability			Political Governance (Polgov)		
Initial (-1)	**0.737*** (0.000)**	**0.734*** (0.001)**	**1.083*** (0.000)**	**0.920*** (0.000)**	**0.918** (0.011)**	**0.663*** (0.000)**	**0.837*** (0.000)**	**0.896*** (0.000)**	**1.036*** (0.000)**
Constant	**-0.310** (0.043)**	-0.252 (0.114)	-0.205 (0.185)	-0.037 (0.783)	-0.020 (0.934)	**0.286* (0.081)**	-0.127 (0.145)	-0.061 (0.496)	**-0.236 (0.684)**
Aid (NODA)	**0.004* (0.053)**	---	**0.010* (0.088)**	**0.003** (0.035)**	---	0.005 (0.315)	**0.005*** (0.000)**	---	0.013 (0.156)
Tax revenues	**0.008** (0.019)**	**0.007* (0.068)**	-0.0002 (0.932)	-0.002 (0.258)	-0.002 (0.413)	0.003 (0.127)	**0.003** (0.036)**	**0.002* (0.077)**	0.0023 (0.502)
Aid* 'Tax revenues'	---	0.000 (0.210)	-0.000 (0.859)	---	0.000 (0.697)	-0.0001 (0.366)	---	0.000 (0.126)	-0.000 (0.869)
Press Freedom	---	---	-0.001 (0.629)	---	---	**-0.011*** (0.000)**	---	---	**-0.001 (0.815)**
Inflation	---	---	**0.0005 (0.321)**	---	---	0.0001 (0.782)	---	---	0.0006 (0.441)
Public Investment	---	---	0.015 (0.371)	---	---	0.0001 (0.988)	---	---	0.004 (0.832)
Times Effects	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
AR(2)	**(0.739)**	**(0.780)**	**(0.966)**	**(0.271)**	**(0.290)**	**(0.587)**	**(0.320)**	**(0.411)**	**(0.996)**
Sargan OIR	**(0.235)**	**(0.203)**	**(0.600)**	**(0.800)**	**(0.447)**	**(0.563)**	**(0.850)**	**(0.791)**	**(0.320)**
Wald (Joint)	**33.93*****	**25.84*****	**1034.3*****	**402.7*****	**537.5*****	**1346.7*****	**116.1*****	**48.44*****	**1470.7*****
Instruments	12	12	19	15	15	19	15	12	19
Countries	30	30	26	30	30	26	30	30	26
Observations	110	110	88	110	110	88	110	110	88

***, **, and * indicate significance at 1%, 5% and 10% levels respectively. AR(2): Second Order Autocorrelation test. OIR: Overidentifying Restrictions test. Initial (-1): lagged dependent variable. Aid: Net Official Development Assistance. The significance of bold values is twofold. 1) The significance of estimated coefficients and the Wald statistics. 2) The failure to reject the null hypotheses of: a) no autocorrelation in the AR(2) tests and; b) the validity of the instruments in the Sargan OIR test. P-values in brackets.

The study cannot conclude on the validity of the underlying hypothesis in Tables 5-6 based on the adopted information criteria for a substitution effect. Hence, the Eubank hypothesis is invalid in Africa (low-income and English common law countries of the continent) and the research cannot establish its validity for other fundamental characteristics of development. It can, therefore, be inferred from the findings that cross-country differences in legal origins and income levels can elucidate the validity of the investigated Eubank hypothesis. It is important to articulate that while the analysis has controlled for time-invariant variables (i.e. years), dummy or fixed effects are eliminated by first differencing in order to control for endogeneity related to the correlation between the lagged dependent variable and fixed effects (i.e. in the transition from Equation 1 to Equation 2). It follows that dummies cannot be involved in the system GMM as independent variables of interest and hence, the research found it plausible to take on board the relevance of legal origins and income levels by engaging multiple specifications.

4.2 Further discussion of results and policy implications

This study has consistently noticed that foreign aid improves political governance. But since the Eubank hypothesis is invalid in some respects, the positive effect of foreign aid on political governance merits some emphasis. This informs the policy that, despite the substantially documented issues[9] in donor countries that are currently affecting the flow of aid, its direct effects on political governance is appealing. Given that GMM estimates should be interpreted as short-term effects because the research has used non-overlapping intervals to mitigate short-run disturbances that may loom substantially, it is logical to infer that foreign aid improves political governance in the short term. Two implications are noteworthy here. *First*, because the periodicity of the study covers the post 'Berlin Wall' era, it is fairly plausible to find a positive aid-governance nexus. Accordingly, donor objectives of foreign aid changed radically in the 1990s. Before the fall of the Berlin Wall, *real politik* was the name of the foreign aid game because the alleged prime objective of aid was to deter African nations from allying with the Soviet Union (Gibson et al., 2014)[10]. *Second*, consistent with Asongu (2013a, p. 14) foreign aid

[9] See the following for some of the issues: Lagoutte & Reimat (2012), Contini (2012), Schäfer (2012), Zeddie (2013), Chapman (2013), Tamborini (2013) & Bruno (2013), *inter alia*.

[10] "*The roots of the Washington consensus that grew in the 1980s and the end of the Cold War quickly changed this status quo: in addition to strong external pressure to liberalize, rulers began to face increasing constraints to using foreign aid to support their followers. While aid continued to flow, it came increasingly in forms far less amenable to patronage politics*" (p. 25).

directly improves voice and accountability because it is an essential condition for its disbursement.

Assessing the Eubank hypothesis has improved the scholarly debates on the aid-institutions nexus in at least a threefold manner. *First*, by putting an empirical structure to the Eubank literature, the much needed guidance as to whether the Somaliland-based findings are relevant across Africa has been provided. This is in direct response to a request for further research by Eubank who has clearly warned that his findings should not be construed as reflecting the overall African context unless they are backed by some empirical evidence. *Second*, the research has taken the extant of knowledge on the drivers of accountable and representative governments to another platform. Therefore, the hypothesis of the dependence on tax revenues by government as an income channel to political accountability has been scarcely covered in the literature (Mahon, 2004; Morton, 1994; Bernstein & Lu, 2008; Moore, 2008; Prichard, 2009). *Third*, the scope of the problem statement has also provided an opportunity of extending a recent debate on aid and institutions by Okada & Samreth and Asongu & Jellal that has had a substantial influence on policy making and academic circles. The complementary effect of taxation and aid would be further increased if development assistance would be channeled through investment mechanisms and not via government final consumption expenditure (Asongu & Jellal, 2013).

The policy recommendations are valid only for political governance and should not be extended to economic (government effectiveness & regulation quality) and institutional (corruption-control & rule of law) governance without empirical justification. Based on the empirical underpinnings, the study has only invalidated the Eubank hypothesis in the short run. Hence, a long-term assessment is an interesting future research direction. Moreover, in the appreciation of development assistance, the analysis has failed to distinguish between grants and concessional loans. Therefore, it is also worth assessing the dynamics of foreign aid that positively interact with tax effort to improve political governance. In addition, the research concurs with one of the referees of this paper on the position that, since of most of the data is obtained from the World Development Indicators, which could be noisy with regard to government finance, considering a new dataset recently presented by Mansour from the International Monetary Fund (IMF) would also be an interesting future research direction.

4. Conclusion and future research directions

This paper has put figures to the facts of Eubank (2012), a recently celebrated paper in the Journal of Development Studies. The research has investigated the underpinning Somaliland-based hypothesis that foreign aid dilutes the positive role of taxation on political governance. While the Eubank hypothesis is invalid in baseline Africa, (low-income and English common law countries in the continent), the study cannot conclude on its validity for other fundamental characteristics of development. This conclusion should not be assumed to be an extension of the heated debate on the recognition of Somaliland by the international community. The objective of the paper has simply been to assess the empirical validity of the celebrated Eubank hypothesis.

It is also interesting to note that the study has limited the analysis to the significance of the marginal effects given the context of the problem statement. While a range in foreign aid to GDP may not apply to Somaliland because the country is receiving no official development assistance, the Eubank hypothesis could be modified to assess in what range of the modifying variable (foreign aid) the substitution effect for the Eubank hypothesis holds. For the purpose of these thresholds of foreign aid, Brambor et al. (2006) would be instrumental for the graphical illustrations.

Assessing whether the findings are relevant to other developing countries could also provide interesting insights for policy makers. Moreover, some exogenous socio-economic factors may affect the relationship between tax revenues and political governance. While foreign aid is considered within the framework of this study, other factors are also relevant. For instance, a country with a higher level of inequality may be expected to raise lower tax income. This dimension which is not considered in the study could be an interesting future research direction. Another worthwhile future research area could be to assess the strengths and weaknesses of the investigated Eubank hypothesis.

While some magnitudes of effects are small for some estimations, the research reported all the findings corresponding to the investigated hypothesis to avoid the concern of publication bias or "file drawer" problem in social sciences in which strong and significant findings are reported while weak and insignificant results are discarded (Rosenberg, 2005; Franco et al., 2014). Moreover, as argued by Boateng *et al*. (2018), weak and insignificant results may have as much policy relevance as strong and significant results.

Appendices

Appendix 1: Definitions of variables

Variable(s)	Definition(s)	Source(s)
Political Stability	Political Stability/ No Violence (estimate): Measured as the perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional and violent means, including domestic violence and terrorism.	World Bank (WDI)
Voice & Accountability	Voice and Accountability (estimate): Measures the extent to which a country's citizens are able to participate in selecting their government and to enjoy freedom of expression, freedom of association, and a free media.	World Bank (WDI)
Political Governance	First Principal Component of Political Stability and Voice & Accountability	PCA
Tax revenues	Total revenues (% of GDP)	World Bank (WDI)
Foreign Aid (NODA)	Net Official Development Assistance (% of GDP)	World Bank (WDI)
Foreign Aid (NODADAC)	NODA from DAC Countries (% of GDP)	World Bank (WDI)
Tax.Aid	Product of Tax revenues and Foreign Aid	World Bank (WDI)
Press Freedom	Press Freedom Quality	Freedom House
Inflation	Consumer Price Inflation (annual %)	World Bank (WDI)
Public Investment	Gross Public Investment (% of GDP)	World Bank (WDI)

WDI: World Bank Development Indicators. PCA: Principal Component Analysis. GDP: Gross Domestic Product. NODA: Net Official Development Assistance. DAC: Development Assistance Committee.

Appendix 2: Summary statistics and presentation of countries

Panel A: Summary Statistics

	Mean	S.D	Min	Max	Obs.
Political Stability (or No violence)	-0.571	0.952	-3.229	1.143	265
Voice & Accountability	-0.679	0.730	-2.161	1.047	265
Political Governance (Polgov)	-0.016	1.291	-3.204	2.621	264
Tax revenues	26.746	12.798	3.760	93.633	189
Foreign Aid (NODA)	10.889	12.029	0.015	102.97	253
Foreign Aid (NODADAC)	6.278	7.303	-0.003	68.063	253
Foreign Aid (NODAMD)	4.525	5.083	0.004	33.249	253
Press Freedom	57.475	19.067	18.000	94.000	235
Inflation	56.191	575.70	-45.335	8603.3	230
Public Investment	7.492	4.204	0.000	28.342	229

Panel B: Presentation of Countries

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

S.D: Standard Deviation. Min: Minimum. Max: Maximum. Obs: Observations. NODA: Net Official Development Assistance. NODADAC: NODA from the Development Assistance Committee (DAC). MD: Multilateral Donors.

Appendix 3: Correlation Analysis

PolSta	VA	Polgov	Taxes	NODA	DAC	MD	Press	Infl.	Pub.I	
1.000	0.682	0.917	0.340	-0.105	-0.106	-0.093	-0.650	-0.098	0.274	PolSta
	1.000	0.917	0.046	0.028	0.037	0.017	-0.919	-0.109	0.034	VA
		1.000	0.207	-0.040	-0.036	-0.040	-0.848	-0.114	0.167	Polgov
			1.000	-0.097	-0.068	-0.139	-0.120	-0.116	0.541	Taxes
				1.000	0.975	0.946	0.049	-0.023	0.148	NODA
					1.000	0.854	0.021	-0.011	0.128	DAC
						1.000	0.078	-0.035	0.144	MD
							1.000	0.150	-0.095	Press
								1.000	-0.121	Infl.
									1.000	Pub. I

PolSta: Political Stability. VA: Voice & Accountability. Polgov: Political governance. Taxes: tax revenues. NODA: Total Net Official Development Assistance (NODA). DAC: NODA from Development Assistance Committee (DAC). MD: NODA from Multilateral Donors.

Appendix 4: Categorization of Countries

Category	Panels	Countries	Num
Income-level	Middle Income	Algeria, Angola, Botswana, Cameroon, Cape Verde, Côte d'Ivoire, Egypt, Equatorial Guinea, Gabon, Lesotho, Libya, Mauritius, Morocco, Namibia, Nigeria, Sao Tome & Principe, Senegal, Seychelles, South Africa, Sudan, Swaziland, Tunisia.	22
	Low Income	Benin, Burkina Faso, Burundi, Central African Republic, Chad, Comoros, Congo Democratic Republic, Congo Republic, Djibouti, Eritrea, Ethiopia, The Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Rwanda, Sierra Leone, Somalia, Tanzania, Togo, Uganda, Zambia, Zimbabwe.	31
Legal Origins	English Common-law	Botswana, The Gambia, Ghana, Kenya, Lesotho, Liberia, Malawi, Mauritius, Namibia, Nigeria, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe.	20
	French Civil-law	Algeria, Angola, Benin, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo Democratic Republic, Congo Republic, Côte d'Ivoire, Djibouti, Egypt, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Guinea, Guinea-Bissau, Libya, Madagascar, Mali, Mauritania, Morocco, Mozambique, Niger, Rwanda, Sao Tomé & Principe, Senegal, Togo, Tunisia.	33
Resources	Petroleum Exporting	Algeria, Angola, Cameroon, Chad, Congo Republic, Equatorial Guinea, Gabon, Libya, Nigeria, Sudan.	10
	Non-Petroleum Exporting	Benin, Botswana, Burkina Faso, Burundi, Cape Verde, Central African Republic, Comoros, Congo Democratic Republic, Côte d'Ivoire, Djibouti, Eritrea, Ethiopia, Egypt, The Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Senegal, Sierra Leone, Somalia, Rwanda, Sao Tomé & Principe, Seychelles, South Africa, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia, Zimbabwe.	43
Openness to Sea	Landlocked	Botswana, Burkina Faso, Burundi, Chad, Central African Republic, Ethiopia, Lesotho, Malawi, Mali, Niger, Rwanda, Swaziland, Uganda, Zambia, Zimbabwe	15
	Not landlocked	Algeria, Angola, Benin, Cameroon, Cape Verde, Comoros, Congo Democratic Republic, Congo Republic, Côte d'Ivoire, Djibouti, Egypt, Equatorial Guinea, Eritrea, Gabon, The Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Liberia, Libya, Madagascar, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Nigeria, Senegal, Sierra Leone, Somalia, Sudan, Sao Tomé & Principe, Seychelles, South Africa, Tanzania, Togo, Tunisia.	38

Num: Number of cross sections (countries)

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