Budget Quality and Fiscal Outcomes in Oil-Exporting Economies

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Abstract
In this paper, we investigated the effect of budget quality on fiscal outcomes in oil-exporting economies as well as the causality between the twin variables. We rely on the literature in computing an index of quality of budget including rules and procedures in budget process. The components of the index include budgetary institutional quality along five criteria: top-down budgeting, rules and controls, sustainability and credibility, comprehensiveness and transparency across the three stages of the budget process: planning and negotiation, legislative approval and implementation stages. With theoretical background from the common pool and agency phenomena, the system generalised method of moment was employed to estimate the parameters of the models and the results revealed that the quality of budget influences fiscal outcome by improving government net primary balance in oil-exporting nations. Budget institution is not what matters for external debt considerations in these countries but the overall level of institutional quality. However, the rules guiding each of the stages of budget cycle should be strengthened. Given a relatively low performance in the implementation stage, governments of oil countries must take necessary steps that would strengthen the rules guiding their budget implementations.

Introduction
The role of fiscal institutions in shaping fiscal policy outcomes has attracted considerable attentions in the literature and among policy makers (Filc & Scartascini, 2004). One central role of budgetary institutions is to instill fiscal discipline in governance (Yaru, Mobolaji, Kilishi & Yakubu, 2013). Sound

institutions help ensure government's accountability and prevent the leakage of public funds; increase efficiency of scarce public resources; and improve the prospects of maintaining fiscal stability as well as meeting social development needs (Dabla-Norris, Allen, Zanna, Prakash, Kvintradze, Lledo, Yackovlev & Gollwitzer, 2010).

Due to the relevance of oil and gas to each of the oil economies across the globe, coupled with the fact that revenue from oil in most of these economies accrues directly to the government, the choice of fiscal policy has a particularly significant impact on their economic performances. Many of the economies suffer lots of structural weaknesses in their budget institutions. The consequential effect of this is the poor level of fiscal performance of the countries usually measured in high level and frequency of deficit budgeting, high level of debt-GDP ratio, and procyclical behaviour of fiscal policy (El Husseiny, 2016). In practice, many governments find it difficult and costly in employing a countercyclical fiscal policy both in economic boom and bust. For instance, it may be a necessity in the presence of inadequate financial resources and debt constraints to reduce government spending while raising taxes during economic burst. However, as argued by Balassone & Kumar (2007), a situation of vicious cycle of procyclical fiscal policies may emerge, especially in the developing world, due to reduction in government spending during busts which consequently results to increased pressure on spending during boom. This situation will cause adverse effect on both economic growth and sustainable budget process. As such, deeper economic imbalances can be caused by the procyclicality of fiscal policy (Boiciuc, 2015).

In oil-producing countries, specific fiscal challenges are usually met with institutional responses such as making conservative assumptions about oil prices in budgeting and establishing oil stabilisation as well as saving fund and fiscal rules. High oil prices over the past years have been a major drive of expansionary fiscal policy in most oil-rich economies. This has consequently increased their inflationary pressures. The prevailing exchange rate regimes have also imposed a constraint on the monetary policy in controlling their inflation (Boiciuc, 2015). Fiscal policy is often faced with conflicting objectives and considerations given its roles in macroeconomic stabilization. Fiscal restraint would have been the prevailing case in the face of cyclical considerations; however, during periods of high oil prices, rise in public

expenditure pressure is usually the order of the day. The need for developmental spending (for example, spending on physical and social infrastructures), distributional and international considerations are primarily responsible for such pressures. The drastic decline in oil prices starting from the global financial crisis period, and more recently during the general fall in commodity prices in the international market has put forward a question of whether expenditure levels attained in previous periods in oil-rich nations are sustainable.

In the light of the above, this paper addresses the following questions: (1) what is the direction of causal relationship between government net primary balance and quality of budgetary institutions of oil-exporting economies?; (2) in what direction is the causal relationship between external debt and quality of budgetary institutions of these economies?; (3) how do budgetary institutions affect government net primary balance of these countries?; (4) in what way do budgetary institutions affect external debt of the countries? Following this section, the paper is organised in the following sequence: section two gives a review of literature relevant to the study; section three gives details of the research methodology of the study; the fourth section presents analysis of data, findings and comparison with previous findings; and section five focuses on conclusion and recommendations.

Review of Theoretical and Empirical Literature
Widely discussed in the literature of political economy is the association between budget institutions and fiscal performance (Hallerberg & Ylaoutinen, 2010; Allen, Banerji, & Nabil, 2004). The major argument is that institutional condition might influence the behaviour of political players and other major stakeholders and consequently affect outcomes of relevant policies (Fabrizio & Mody, 2006; Gleich, 2003). The relevant theories addressing the relationships between budget institutional quality and fiscal outcomes are usually discussed within two phenomena – "common pool" and "agency problem". Early proponents of the common pool theory, Tornell & Lane (1998) argue that this phenomenon arises due to the competition that emerges among the budget process decision makers (such as finance minister, legislators and line ministers) over public resources which consequently triggers their failure to internalize both current and future consequences associated with their choices (Gollwitzer 2010; Dabla-Norris et al., 2010). Therefore, this influences their decision to only consider in their budgets, the benefits and costs of their

expenditures to those they represent rather than to the larger society that actually bears the cost (Hallerberg & Ylaoutinen 2010). It also makes them to demand for greater expenditure on favoured projects and programmes than those for the optimal level of social wellbeing (Hagen & Vabo 2005; Gleich 2003).

On another hand, in accordance with the works of Alesina & Tabellini (2005), the agency phenomenon is a situation that occurs between the electorate (the principals) on one side and those representing them at the political front (the agents) on the other side. The agents may engage in corrupt practices by allocating some portion of revenues from taxes and/or natural resources for personal benefits (political rents) rather than spending them on intended projects that will improve voters' satisfaction. This usually creates incentive for the principals to maximisze their satisfaction by demanding for increased public expenditure (or lower taxes), most especially in periods of economic boom, in order to restrict the ability of their representatives at the political front to allocate such monies for personal interests. This accompanied by weak level of budget institutional quality would result in a deficit bias. These phenomena would occur in countries where there is absence of budgetary institutions that are strong enough to restrict the agents from pursuing self-interest. Consequently, the resulting situation is poor level of fiscal outcomes.

There have been arguments that centralised budget process tends to curb the common pool problem and decentralisation of central finance agency activities can further deepen the problem among key stakeholders. Centralisation can eliminate common pool problem by making policy makers to carry out comprehensive study about the consequences of their actions (CAPE 2013; Von Hagen, 2005). More so, decentralisation of these functions may result to greater challenges of coordination which is minimal when the functions are centralised by involving fewer players (Andrews, 2010).

A large number of studies have been conducted to empirically test the relationship between numerical indices describing the major aspects of budget institutions and fiscal outcomes. These studies were conducted due to the emergence of consistently rising budget deficits and government debts in many countries of the world, including developing and developed nations (Dabla-Norris et al., 2010; Krogstrup & Walti 2008). Holistically, the first authors to

develop a formal measure of budgetary institutional quality for developing nations were Alesina et al. (1999). They constructed an index that entails ten components along various stages of budget process. Their findings revealed that procedures' including constraint measures on deficit and countries that exhibit more transparency and hierarchy result in lower deficit to GDP ratio. Also show similar conclusions were Dabla-Norris et al. (2010). Their study revealed that there exist a support for the hypothesis that weaker budgetary institutions provide poorer government net primary balance and higher levels of public external debt. Therefore, this gives room for more procyclical policies. Similar conclusions were reached for a sample of African countries in the work of Gollwitzer (2010).

Hagen (1992) and von Hagen & Harden (1994, 1996) show that better fiscal outcomes are found in European Union countries with a strong role given to prime or finance minister in budget procedures, limiting the level of amendment of the parliament, and enforcing strict budget laws execution. This was also the findings in the works of Mulas-Granados, Ornubia, & Salians- Jimenez (2009) which revealed that sound government finances are better maintained by giving a significant role to finance minister during budget execution and also during budget design. The study by Hallerberg & Ylaoutinen (2010) on Central and Eastern European countries (CEECs) also revealed that divergent fiscal governance creates greater debt burden. Similarly, the findings of Gleich (2003) on transitional CEECs provide empirical support for the argument on conducive budget processes eliminating collective action problems, hence necessarily creating better fiscal outcomes.

The study by Poterba (1994) revealed that countries that are found enforcing more strict numerical limits as regard the level of fiscal deficits and external debts are necessarily having more procyclical fiscal policies, and consequently having less efficient fiscal policies alongside more volatile macroeconomic indices. A contrary finding to those of Porteba (1994) was that of Fatas & Mihov (2003). Their study revealed that ex ante rules give room for a total elimination of procyclical fiscal policies by imposing constraints on governments to debar employing discretionary policies which tend to increase the level of macroeconomic fluctuations. In support of the findings of Fatas & Mihov (2003), the study conducted by Manasse (2006) revealed that countercyclical fiscal policies are better enhanced in emerging and industrial economies with strong fiscal rules and fiscal responsibility laws. Similarly, the

research carried out by Gali & Perotti (2003) also supported the findings of Fatas & Mihov (2003) by concluding that adoption of fiscal rules significantly poses a constraint on the ability of governments to employ discretionary fiscal policy, and strengthen the level of countercyclical fiscal policy.

Following the common pool problem, Tornell & Lane (1999) argued that the move by various players to compete for public resources during economic boom which eventually makes the government to overspend is as a result of no institutional control that limits policy discretion. All these tend to be more evident in countries that have highly volatile tax base (Talvi & Vegh, 2005), weak budgetary institutions that tend to provide room for corruption and rent-seeking (Alesina et al., 2008), and few checks on activities of executive (Akitoby et al., 2006).

Another point usually argued for in the literature as an important factor explaining procyclical fiscal responses is implementation constraints (Balassone & Kumar, 2007). An irregularity between the planned and executed budgets is an ultimate reflection of the presence of implementation constraints. The influence of budgetary institutional quality in minimising implementation errors have been examined by a number of authors. In a study conducted by Beetsma, Giuliodori, & Wierts (2009) on European Union, the study revealed that better fiscal outcomes are achieved by significant reduction in implementation errors through proper enforcement of numerical rules and employing a strong medium-term framework.

Noteworthy, a great number of empirical works relevant to the relation between budget institutional quality and fiscal outcomes have supported the view that the quality of budgetary institutions determines the level of fiscal outcomes. Therefore, quality of budget institution in any given country should always be seen as the "rules of the game". The willingness of the sitting government and the level of adherence of major players greatly determine how these institutions affect actual outcomes (Fabrizio & Mody, 2006; Krogstrup & Walti, 2008; Gollwitzer 2010; Frankel, 2011; Lledo & Poplawski-Ribeiro, 2013; Frankel, Vegh, & Vuletin, 2013; Frankel & Schreger, 2013; Avellan & Vuletin, 2015), and the existing social and economic systems (Arbatli & Escolano, 2015; El Husseiny, 2016).

Theoretical Framework and Methodology

The theoretical underpinnings of this study rest on the common pool and agency phenomena. They are important theoretical background to the relationship between budgetary institutions and fiscal outcomes. The common pool problem on one hand arises when the various decision makers involved in the budgetary process (legislators, the finance minister, line ministers, etc.) compete for public resources and fail to internalise the current and future costs of their choices. Accordingly, when they decide on how much money they would like to spend, decision makers consider both the benefits and costs of that spending for the people they represent (their constituency), but not for the whole society that will bear the costs. Failure to internalise the social costs of expenditure decisions is expected to lead policy makers, and all those who are involved in the budgeting process, to demand higher levels of public spending on favoured programmes and projects as compared to the optimal social level. This in turn increases the level of total government expenditure which consequently leads to an increase in fiscal deficit, public debt and government primary balance.

On the other hand, the agency problem justifies the need for budget quality. In a political setting that lacks appropriate institution; corrupt politicians tend to acquire political rents rather than spending on developmental programmes that satisfy the voters' needs and desires. There will always be an incentive for voters to maximise their utility through asking for a higher level of public spending (or a lower level of taxation), especially during the expansion periods, to constrain the ability of politicians (agents) to spend on their own interests. This would lead to deficit bias, with the absence of suitable budgetary institutions.

The existence of such deficit bias is expected to emerge in countries where strong budget institutions that impose constraints on the politicians to achieve the socially optimal outcomes are lacking. This would, in turn, lead to a poor fiscal performance as measured by either weak fiscal discipline or procyclical behaviour of fiscal policy.

These theoretical phenomena back the relationship between budgetary institutional quality and fiscal performance. The inclusion of the control variables in our equations (1) and (2) relies on empirical literature of Alesina et al. (1999); Filc & Scartascini (2005, 2007); Fabrizio & Mody (2006); Alt & Lassen (2006); Gollwitzer (2010); and Dabla-Norris et al. (2010). Equation (1)

is on effect of budgetary institutional quality on government net primary balance as;

$$PB_t = \alpha_0 + \alpha_1 BI_t + \alpha_2 GR_{it} + \alpha_3 TT * TO_t + \alpha_4 OR_t + \alpha_5 INF_t + \alpha_6 DEP_t + \alpha_7 GOVeff_t + \alpha_8 CC_t + \epsilon_{it} \dots\dots\dots\dots\dots\dots\dots\dots\dots (1)$$

where PB represents government net primary balance, BI stands for budgetary institutional quality index, GR represents economic growth, TT*TO stands for the product of annual growth in net barter terms of trade and trade openness (the ratio of trade to GDP) as indicator of a country's dependency on trade, OR represents oil rents to GDP ratio, INF represents inflation rate, DEP represents dependency rate, GOVeff represents government effectiveness and CC represents control of corruption.

Equation (2) expresses effect of quality of budgetary institutions on external debt stock as;

$$Ext_{it} = \alpha_0 + \alpha_1 BI_t + \alpha_2 GR_{it} + \alpha_3 TT * TO_t + \alpha_4 OR_t + \alpha_5 INF_t + \alpha_6 DEP_t + \alpha_7 GOVeff_t + \alpha_8 CC_t + \epsilon_{it} \dots\dots\dots\dots\dots\dots\dots\dots (2)$$

Where Ext represents external debt stock and other variables are as defined earlier.

The generalised method of moments (GMM) estimator is employed to estimate the regression models specified in equations (3) and (4).

$$PB_t = \alpha_0 + \alpha_1 PB_t(-1) + \alpha_2 BI_t + \alpha_3 GR_{it} + \alpha_4 TT * TO_t + \alpha_5 OR_t + \alpha_6 INF_t + \alpha_7 DEP_t + \alpha_8 GOVeff_{ti} + \alpha_9 CC_t + \epsilon_{it} \dots\dots\dots\dots\dots (3)$$

$$Ext_{it} = \alpha_0 + \alpha_1 Ext_{it}(-1) + \alpha_2 BI_t + \alpha_3 GR_{it} + \alpha_4 TT * TO_t + \alpha_5 OR_{it} + \alpha_6 INF_t + \alpha_7 DEP_t + \alpha_8 GOVeff_{ti} + \alpha_9 CC_t + \epsilon_{it} \dots\dots\dots\dots\dots (4)$$

The increasingly availability of information on cross sections for different periods has necessitated a shift in the analysis of panel data from micro to macro panels. In the macro panel data analysis, issues like stationarity and causality are becoming of interest. The current paper employs the panel Granger causality

test following the Dumitrescu & Hurlin (2012) procedure to test for the causal relationships among the variables of interest in the model.

In order to develop the budget institutional quality index, this study followed the methodology contained in Dabla-Norris et al. (2010). All calculations and formulas of the index computed by Dabla-Norris et al. (2010) are adopted in this present study. Dabla-Norris et al. (2010) identified three stages of the budgetary process namely: the planning and negotiation stage; the approval stage; and the implementation stage. For instance, in the first stage in which budget planning and negotiation is concerned, some activities are performed which include establishing the overall budget and allocating resources to different programmes and line ministries with the aid of established macroeconomic and budgetary frameworks where necessary. In the second stage of budget approval, activities carried out include the legislative hearing of the budget and its legal adoption. During the stage of implementation, activities carried out include executing, monitoring, controlling, reporting, and budget external oversight. Each of these stages of budget process has a number of identified categories which are top-down procedures, rules and controls, sustainability and credibility, comprehensiveness, and transparency.

Most of the data employed in constructing the aggregate, stage and category indices are qualitative information. A scale interval of 0 and 4 was assigned to each question. A score of 0 represents low performance while a score of 4 represents high performance. Coding rules were assigned to each question in order to reduce the degree of discretion.

For each country, the three stages of budgetary processes are outlined and indices were constructed for them. A simple average of the indices calculated for these stages makes the aggregate stage index. Each subindex, in turn, is a simple average of the number of questions at each stage mentioned above.

This study employed the system generalised method of moment (GMM) method to estimate the parameters of the models of this study. Instrumental variable-based estimation techniques, like the GMM, are very popular to estimate dynamic panel data relationships. Conducting panel data analyses seems attractive, because they allow tackling particular forms of unobserved heterogeneity. However, to neutralise bias due to unobserved individual specific effects that may be correlated with the observed heterogeneity, panel

data relationships have to be transformed, and in dynamic models this leads to contemporaneous correlation of the transformed lagged-dependent variable regressors and the transformed disturbances and possibly to serial correlation of the disturbances (Kiviet, 2009). This leads to huge bias of the inconsistent least-squares estimator in small and finite time series sample size and large cross sections, but instrumental variables estimators can therefore be designed, which are consistent. These IV-family of estimators, i.e. instrumental variables, or two-stage least-squares (see Anderson & Hsiao, 1982) and GMM (see Arellano & Bond, 1991; Arellano & Bover, 1995; Blundell & Bond, 1998), for transformed dynamic panel data models do not necessarily exploit external instrumental variables. Internal ones suffice, since higher-order lags of (possibly transformed) regressors constitute an abundance of instruments.

The use of GMM in this study is therefore, considered as the most appropriate due to issues relating to missing variables, serially correlated explanatory variables and endogeneity issues as noted by Flannery Hankins (2013). As reported by the works of Arellano & Bover (1995), Blundell and Bond (1998), the Arellano & Bond (1991) method of first difference does not provide sufficient information relating to the first-differenced variable, in the face of serial correlation most especially. Thus, this necessarily requires lags of first-differenced series as instruments alongside first-difference of explanatory variables. Non-strictly exogenous variables are also instrumented with their lagged values.

Sources and Measurement of Data

The study employs Public Expenditure and Financial Accountability (PEFA) reports for information about budget practices and performance. The Organisation of Economic Cooperation and Development (OECD) database was useful for information related to fiscal and procedural rules and legal regulations. The criteria on transparency emerge from International Budget Partnership's (IBP) Open Budget Index (OBI) surveys. In support to the IBP OBI survey, Reports on the Observance of Standards and Codes (ROSCs) were also employed to fill the missing points. Primary balance (central government primary balance), external debt in US$, real GDP growth rate, terms of trade, trade openness (exports plus imports divided by GDP), oil rents (ratio of oil rents to GDP), inflation and dependency ratio (ratio of population under 15 years of age) were extracted from the IMF World Economic Outlook (WEO).

Control of corruption and government effectiveness were obtained from World Bank, Kaufman and Kraay governance indicators.

Sample and Data Collection

The countries included in the sample of this study are 38 oil-exporting nations across different regions as compiled from the U.S. Energy information Administration database for year 2016. These countries comprise Russia, Saudi Arabia, Iraq, Iran, United Arab Emirate, Kuwait, Venezuela, Nigeria, Angola, Qatar, Algeria, Oman, Libya, Ecuador, Equatorial Guinea, Gabon, Norway, Kazakhstan, United States, China, Canada, Brazil, Mexico, United Kingdom, Colombia, Indonesia, Azerbaijan, India, Malaysia, Argentina, Romania, Congo Republic, Vietnam, Australia, Thailand, Sudan, Turkmenistan and Egypt.

The total world oil production in 2016 was averaged 80,622,000 barrels per day. Approximately 68% came from the top ten countries, and an overlapping 44% came from the fourteen current OPEC members. The assessments largely cover an annual period of 2006–2016.

Results and Discussions

This section begins with stationarity test which result is presented in Table 1. The Im-Pesaran-Shin (IPS) procedure was employed to conduct the unit root test. The test took its basis from the augmented Dickey-Fuller test. It reports the test statistic and its p-value. Table 1 shows that the test statistic for all variables of this study reject the null of the series having unit roots at level. The p-values of the statistic of each of the variables also confirm the rejection of null hypothesis of the series having unit roots, thus a safe conclusion can be made that each of the variables is stationary and is integrated of order zero (i.e. $I(0)$) series. This is required in order to carry out the D-H panel Granger causality test.

Table 1: Im-Pesaran-Shin Unit Root Test

VARIABLES	Statistic at Level Series	p-value	Order of Integration
Budget Institutions Index	-2.2181	0.0133	I(0)
Primary Balance	-2.6933	0.0035	I(0)
External Debt	-1.1e+06	0.0000	I(0)
Growth	-3.0659	0.0011	I(0)
Oil Rents	-2.9716	0.0015	I(0)
Trade	-5.8784	0.0000	I(0)
Inflation	-2.9321	0.0017	I(0)
Dependency Ratio	-3.9667	0.0000	I(0)
Government Effectiveness	-2.4987	0.0062	I(0)
Control of Corruption	-4.1479	0.0000	I(0)

Source: Authors' Computation

Following is the result of Dumitrescu-Hurlin (D-H) panel Granger non-causality test to investigate the direction of causality between budgetary institutional quality and fiscal outcomes in oil-exporting economies. The present finding in Table 2 is unique for showing a bi-causality between budgetary institutional quality and fiscal outcomes as many studies did not reveal this (e.g. Beetsma et al., 2009, Dabla-Norris et al., 2010 & El Husseiny, 2016). This makes those studies to ignore endogeneity issues that may arise in such situations. The bi-directional causality of budgetary institutional quality with each of the fiscal outcomes is shown with each of the D-H p-values being highly statistically significant and suggestive of rejection of null hypothesis of no Granger causality. This implies that cause and effect is not only from budget institutional quality to fiscal outcomes, it is in fact, also from fiscal outcomes to budget quality for oil-exporting countries.

Table 2: Dumitrescu & Hurlin (2012) Granger non-causality test results

Null Hypothesis	Statistic	p-value	Remark
Budget quality does not Granger-cause primary balance	7.3680	0.0000	Bidirectional
Primary balance does not Granger-cause Budget quality	10.442	0.0000	
Budget quality does not Granger-cause External debt stock	15.040	0.0000	Bidirectional
External debt stock does not Granger-cause Budget quality	5.8431	0.0000	

Source: Authors' Computation

Next is the panel two-step system generalised method of moments (GMM) regression results. The results presented in Table 3 show the effect of budget institutional quality on government net primary balance in oil-exporting countries. Nine models are presented in the table featuring the aggregate index of budget institutional quality and the decomposed sub-indices regarding the stages and categories. The first model (in the column titled 1) shows that trade and quality of budgetary institutions are statistically significant in promoting government primary balance. This is in consonance with previous studies such as Dabla-Norris et al. (2010) and Gollwitzer (2010).

The second column includes budget planning and negotiation alongside other variables in column 1. The results show that institutional quality at the budget planning and negotiation stages are not significantly important to increase in government primary balance while growth and trade statistically do. Results in column 3 include institutional quality at the budget approval stage and it shows that it is positive and statistically significant in influencing government primary balance. In the same vein, results in column 4 show that an increase in the quality of institution at the budget implementation level would lead to increase in government primary balance. This also does not contradict previous studies such as Dabla-Norris et al. (2010) and Gollwitzer (2010). However, inclusion of top-down budgeting and rules and control category sub-indices in columns 5 and 6 show that both variables are not statistically significant in affecting government primary balance. This implies that they are not important for improvement in government primary balance.

Table 3: Government Net Primary Balance and Budgetary Institutional Quality

VARIABLE	1	2	3	4	5	6	7	8	9
L.Primary	0.43***	0.49***	0.37***	0.36***	0.49***	0.37***	0.33***	0.39***	0.47***
	(0.083)	(0.073)	(0.115)	(0.107)	(0.081)	(0.088)	(0.103)	(0.068)	(0.085)
Growth	0.14	0.352***	-0.0085	0.0863	0.252**	0.252***	0.0871	0.102	0.377***
	(0.125)	(0.0933)	(0.220)	(0.156)	(0.112)	(0.0968)	(0.119)	(0.112)	(0.111)
Oil Rent	-0.007	-0.434	0.236	0.024	-0.450	0.024	-0.018	-0.004	-0.561
	(0.322)	(0.452)	(0.236)	(0.312)	(0.313)	(0.352)	(0.322)	(0.401)	(0.451)
Inflation	-0.012	-0.0007	-0.0068	-0.0087	-0.0146	-0.0063	-0.0084	-0.0046	-0.011
	(0.012)	(0.023)	(0.015)	(0.017)	(0.015)	(0.016)	(0.012)	(0.020)	(0.013)
Dependency	0.857	0.295	0.791	0.923**	0.467	0.842*	0.765	0.839	0.273
	(0.534)	(0.351)	(0.558)	(0.470)	(0.349)	(0.447)	(0.592)	(0.541)	(0.300)
Trade	0.001**	0.001*	0.001**	0.001**	0.001***	0.001**	0.001**	0.001	0.001*
	(0.0004)	(0.0006)	(0.0003)	(0.0005)	(0.0004)	(0.0004)	(0.0005)	(0.0007)	(0.0007)
Govt. eff.	-13.96	-10.78	-13.44	-15.20	-9.728	-15.21	-13.98	-14.40	-9.312
	(12.45)	(8.530)	(16.68)	(14.18)	(7.624)	(14.08)	(13.52)	(13.60)	(7.999)

Ctrl. Corr.	-4.026	0.131	-8.573	-0.0584	0.493	-1.187	-2.706	-3.311	4.163
	(8.088)	(8.066)	(12.32)	(5.914)	(5.220)	(8.465)	(10.96)	(7.59)	(6.589)
BI	147.9**								
	(63.57)								
Planning		25.01							
		(35.99)							
Approval			242.7*						
			(143.3)						
Implement				244.3*					
				(125.8)					
Top-down					42.51				
					(28.29)				
Rules & ctrl						170.4			
						(111.9)			
Sus. & cred.							287.3**		
							(115.9)		
Comprehen								162.9***	
								(57.12)	
Transparenc									-5.488
									(19.34)
Constant	-127.**	-37.35	-164.**	-153.**	-55.10*	-127.5**	-166.**	-135.***	-21.72
	(49.81)	(26.29)	(82.55)	(60.89)	(31.16)	(56.72)	(63.89)	(44.32)	(13.23)
Obs	407	407	407	407	407	407	407	407	407
Wald Chi^2	235.8**	1020.4**	80.61**	120.1**	1005.4**	158.14**	96.72**	245.8**	736.12**
Sargan test	22.074	22.006	21.69	21.347	16.673	22.26	22.66	19.98	19.25
AR test (1)	-2.05**	-2.319**	-1.80*	-1.79*	-2.07**	-2.09**	-1.223	-2.19**	-2.34**
AR test (2)	0.057	-0.545	0.758	0.193	-0.662	0.182	0.359	0.460	-0.626

*** $p<0.01$, ** $p<0.05$, * $p<0.1$
Source: *Authors' Computation*

In columns 7 and 8, sustainability and credibility of budgetary institutions and its comprehensiveness are included respectively. Results show that both of them are positively significant in their respective models. This indicates that improvement in the quality of budgetary institutions in the aspect of sustainability and credibility and comprehensiveness would lead to improvement in primary balance. In general, this conforms to the findings of previous studies such as Dabla-Norris et al. (2010) and Gollwitzer (2010). Besides, inclusion of transparency in the last column indicates that transparency is not an important aspect of budget institutional quality's contributions to government primary balance. The model statistics are well-behaved with statistically significant Wald Chi-squared statistics. Sargan test of over-identifying restriction is also valid, since there is no sufficient evidence to reject

its null hypothesis in all the models. Autocorrelation statistics (AR1 and AR2) are also within reasonable bounds.

Table 4 presents the regression results of the impact of budget institutional quality on external debt stock. In the first column, the overall budget institutional quality index is included in the model while in each of the other columns; the sub-indices are included one after the other. The results show that all the budgetary institutional quality indices are not statistically significant in the determinants of external debt in oil-exporting economies, except control of corruption which is statistically significant in all the models. The insignificance of the budgetary institutional quality variables on external debt deviate from findings of studies such as Alesina et al. (1999); Hallerberg & Ylaoutinen (2010); Gollwitzer (2010) and Dabla-Norris et al. (2010) The effect of control of corruption in all the models are negative, indicating that corruption control is important for reduction in external debt stock. A simple explanation from the results is that budgetary institutional quality is not what matters for reduction in external debt stock but the overall level of institutional quality.

In summary, most of the results especially from Table 3 show that the quality of budget institutions influences fiscal outcomes and this conforms to the findings of several studies like Filc & Scartascini, (2005), (2007); Alt & Lassen, (2006); Fabrizio & Mody, (2006); Gollwitzer (2010); Dabla-Norris et al., (2010); Tapsoba et al. (2017), Lledo & Poplawski-Ribeiro (2013) and Mpatswe & Tapsoba (2011).

Table 4: External Debt Stock and Budgetary Institutional Quality

VARIABLE	1	2	3	4	5	6	7	8	9
L.Ext. Debt	0.62***	0.63***	0.62***	0.60***	0.59***	0.61***	0.60***	0.60***	0.63***
	(0.077)	(0.071)	(0.081)	(0.081)	(0.068)	(0.083)	(0.081)	(0.083)	(0.076)
Growth	-0.687	-0.772	-0.622	-0.593	-0.587	-0.587	-0.527	-0.624	-0.775
	(0.744)	(0.757)	(0.806)	(0.781)	(0.680)	(0.708)	(0.497)	(0.793)	(0.766)
Oil Rent	-1.705	-1.682	-1.664	-1.655	-1.558	-1.729	-1.663	-1.636	-1.584
	(1.300)	(1.322)	(1.272)	(1.275)	(1.302)	(1.429)	(1.231)	(1.300)	(1.268)
Inflation	0.009	0.007	0.009	0.009	0.012	0.0100	0.011	0.0094	0.0004
	(0.0233)	(0.0209)	(0.0246)	(0.0230)	(0.0252)	(0.0242)	(0.0260)	(0.0241)	(0.0145)
Dependency	0.316	0.878	0.151	-0.0403	0.178	0.411	-0.172	0.152	1.488
	(1.033)	(0.988)	(1.010)	(0.849)	(0.664)	(0.801)	(0.847)	(1.068)	(1.006)
Trade	-0.0002	-0.0001	-0.0004	-0.0003	-0.0004	-0.0004	-0.0002	-0.0003	-0.0002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Govt. eff.	10.17	6.266	9.117	12.95	9.626	11.37	14.35	9.404	1.542
	(13.73)	(13.30)	(15.25)	(13.87)	(14.73)	(15.47)	(13.71)	(14.04)	(13.97)

Ctrl. Corr.	-54.3**	-51.8**	-52.7**	-52.0**	-50.6**	-52.5**	-50.8**	-55.9**	-46.3**
	(22.61)	(21.37)	(24.28)	(21.37)	(21.51)	(22.49)	(23.34)	(23.34)	(21.94)
BI	-73.82								
	(110.5)								
Planning		-10.63							
		(72.52)							
Approval			-80.10						
			(111.8)						
Implement				-148.0					
				(138.4)					
Top-down					-92.42				
					(68.66)				
Rules & ctrl						-51.59			
						(105.1)			
Sus. & cred.							-156.3		
							(109.7)		
Comprehensive								-80.22	
								(115.3)	
Transparency									35.56
									(53.32)
Constant	56.11	-0.578	73.59	103.6	77.67	48.21	116.7	70.31	-50.72
	(98.11)	(83.04)	(103.8)	(93.64)	(60.31)	(81.86)	(89.14)	(104.4)	(75.01)
Obs	418	418	418	418	418	418	418	418	418
Wald Chi²	390.5**	410.17**	362.12**	316.53**	421.47**	325.3**	364.4**	359.3**	374.5**
Sargan test	27.27*	27.56*	27.44*	27.201*	28.27*	28.88*	25.93	26.87*	27.31*
AR test (1)	-2.03**	-2.034**	-2.035**	-2.024*	-1.99**	-2.03**	-2.03**	-2.02**	-2.03**
AR test (2)	-1.06	-1.043	-1.062	-1.067	-1.095	-1.08	-1.06	-1.06	-1.015

*** p<0.01, ** p<0.05, * p<0.1
Source: *Authors' Computation*

The model statistics are well-behaved with statistically significant Wald Chi-squared statistics. The null hypothesis of Sargan test, that over-identifying restriction is valid is marginally rejected for all models at 10% level of significance. However, autocorrelation statistics (AR1 and AR2) are in line with a priori expectation.

Conclusion and Recommendations

We have examined the nexus between budget quality and fiscal outcomes in oil-exporting economies across the world. There is a feedback of causal effect between budgetary quality and each of government net primary balances and external debt stock of oil-exporting countries. This implies further that attempt to influence the quality of budget institutions in turn influences external debt and government net primary balance in these countries. Therefore, attempt to

use a static model in explaining the behaviour of budget institution and fiscal outcomes of these countries might be misleading.

Budgetary institutional quality is highly important for better fiscal outcomes in terms of improved government net primary balance. The most important stages are the budget approval and budget implementation stages. Similarly, the most important aspects of budgetary institutional quality for government primary balance are aspects relating to sustainability and credibility and comprehensiveness. Necessary government policies and interventions in these areas would influence fiscal outcomes in terms of primary balance. Trade openness and economic growth are also important determinants of government primary balance.

Regarding fiscal outcomes with respect to external debt, the quality of budgetary institutions is not really important but the overall level of institutional quality in these countries. Budget institution that places restrictions on budget processes tend to present higher general government net primary balance. Such restrictions may include establishing limits on fiscal spending in order to prevent deficit bias; preventing subnational and decentralised agencies from incurring debt financing; as well as having medium term fiscal frameworks and reserve funds in place. Other restrictions may involve establishing restrictions on the legislature and the bargaining power of ministers as well as providing the executive with discretion to cash manage expenditures. Particularly, the existence of strong fiscal rules during the approval and implementation stages, as well as the sustainability-cum-credibility, and comprehensiveness of each stage of the budget processes explain differences in net primary balances.

The level of budgetary institutional quality should therefore be strengthened in oil-exporting countries. In particular, the rules guiding each of the stages of budget cycle should be strengthened. Given, a relatively low performance in the implementation stage, necessary steps for strengthening the rules guiding the conduct of the implementation stage need to be given special attention in these countries.

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