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Identifying the Drivers of Demand for Government in Southern African Customs Union Countries

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Introduction

The size of government – defined as the share of the public expenditure in GDP – measures the magnitude of resources that are under the control of the public sector and available for reallocation across sectors, income groups and geographical locations. The size of the government is determined by both demand and supply factors. Supply factors include the ability to mobilize resources (tax and non-tax revenue, borrowing) and capacity to spend them (public financial management, procurement). Demand for public services vary by country, depending on – among others - its level of development, exposure to shocks, demography, income distribution, political systems and social fractionalization.

This note focuses on the determinants of governments' size in Southern African Customs Union (SACU) countries: Botswana, Lesotho, Namibia, South Africa, and Swaziland. The size of SACU governments (as measured by central government expenditures over GDP) tends to be significantly above the average for Sub-Saharan Africa. In 2015, SACU's unweighted average government size exceeded 39 percent of GDP, against less than 25 percent for the 32 other Sub-Saharan countries considered in this analysis. Lesotho and Namibia rank respectively first and second among the 37 countries considered, while the other three SACU countries rank among the seven largest countries in Sub-Saharan Africa (SSA).[2]

Brief Literature Review

Empirical Literature on the determinants of government sizes comprises two main branches.[3] Both use cross-country analysis to test their theoretical assumptions. None of them, however, focus specifically on sub-Saharan African countries.

On the one hand, government size is explained by the capacity to mobilize revenues. Fenochietto and Pessino (2013) [4] develop a stochastic tax frontier analysis on panel data from 1991-2012 to estimate the tax potential of 113 countries (first for 96 non-natural resource dependent countries and then an addition of 17 resource-dependent economies). The estimated tax potential is then

[1] This practice note was cleared by Mathew Verghis, Practice Manager, MTI.

[2] For the sake of comparability across the note, a few SSA were excluded from the sample as missing the necessary data for the econometric analysis: Cabo Verde, Democratic Republic of Congo, Equatorial Guinea, Eritrea, Republic of Congo, Rwanda, Sao Tome, South Sudan. Among them, Equatorial Guinea and Republic of Congo exhibit government sizes comparable with SACU countries.

[3] A third branch, initially promoted by Barro (1990), concentrates on the optimal size of governments for growth. This branch does not however attempt at explaining the actual size of government and why it could differ from estimated optimal levels. Barro, Robert (1990), "Government spending in a simple model of endogenous growth", Journal of Political Economy, 98(5), part 2, S103-125.

[4] Fenochietto, Ricardo and Pessino, Carola (2013), "Understanding Countries' Tax Effort", Working Paper #13/244, International Monetary Fund, Washington D.C.

compared to actual tax collection to measure the 'tax effort'). Two econometric methods are used, the Truncated Normal Heterogeneous in Mean and Decay Inefficiency (TNH) and the Mundlak version of the Random Effects Model (REM) measure, yielding similar results: tax potentials significantly depend positively on GDP per capita, education levels (proxied with public education expenditure in GDP), trade openness, and negatively on inequalities and the size of agriculture in GDP. Thus, most European countries were found to be near their tax potential while high levels of exemptions and tax evasion and low tax rates largely account for low levels of tax effort in some developing countries. In another related study, Langford and Ohlenburg (2016)[5] employed the same econometric method to estimate the tax capacity for 85 non-resource-rich economies, in a 27-year panel from 1984-2010. They also found the tax capacity of low income countries to be on average smaller than that of high income countries. Only two SACU countries were covered in these reports, South Africa and Namibia, for the year 2011. Namibia was found to be close to its potential, with a tax effort around 90% (25.3% of GDP collected in tax revenue, against about 28% of potential). South Africa was found to be farther away from its potential: its tax potential was estimated to range between 36 and 38 percent of GDP, but tax collection only amounted to 28% (hence a tax effort ranging between 73 and 77%).

On the other hand, government size is explained by a combination of structural factors driving demand for public expenditures. Shelton (2007) [6] used a combination of demand variables that have repeatedly been shown to be correlated with patterns in government expenditure to test their econometric robustness. Using data for over 100 countries from 1970-2000, he conducted cross sectional analysis on total and individual categories of expenditure (such as defense, education, health care) for different levels of government (central and local) to test the following theories:

- Rodrik's theory of trade openness, whereby greater openness would be associated with greater exposure to external shocks and a related demand from citizens for greater social protection.[7]
- The "Wagner's Law" relating higher per capita GDP to higher demand for complex and luxury public goods such as regulatory services (needed in complex economies) or cultural enhancement services.[8]
- Alesina-Wacziarg theory of country size, whereby sharing non-rivalrous public goods across large populations generate economies of scale (thus lower demand); and whereby large populations exhibit more heterogeneous preferences for public goods, hence agree on lower demand for public goods.[9]
- Alesina et al. theory on the role of ethnic and other forms of social fractionalization, reflecting different preferences for public goods (and thus lower public spending).[10]
- Meltzer and Richard's theory of the role of inequality and Benabou's extension of this theory to include political rights, where higher inequality combined with higher political rights lead to higher demand for fiscal redistribution.[11]

[5] Langford, Ben and Ohlenburg, Tim (2016), "Tax Revenue Potential and Effort: An Empirical Investigation", January, Working Paper, International Growth Center, London and Oxford.

[6] Shelton, C. (2007), "The size and composition of government expenditure", Journal of Public Economics, 91, 2230–60.

[7] Rodrik, Dani (1998) "Why do more open economies have bigger governments?" The Journal of Political Economy 106 (5), 997–1032.

[8] Oxley, Les (1994), "Cointegration, causality, and Wagner's Law: a test for Britain 1870–1913", Scottish Journal of Political Economy 41 (3), 286–298.

[9] Alesina, Alberto, and Wacziarg, Romain (1998), "Openness, country size and government", Journal of Public Economics 69 (3), 305–321.

[10] Alesina, Alberto, Baqir, Reza, and Easterly, William (1999), "Public goods and ethnic divisions", Quarterly Journal of Economics 114 (4), 1214–1284.

[11] Meltzer, Allan, and Richard, Scott (1981) "A rational theory of the size of government", The Journal of Political Economy 89 (5), 914–927; Lijphart, Arend (1997), "Unequal participation:

- Persson and Tabellini, and Milesi-Feretti, Peroti and Rostagno theories on the role of electoral rules and government types, whereby majoritarian and presidential regimes require less expenditure to acquire political power than proportional and parliamentarian regimes.[12]

Shelton (2007) finds evidence that total expenditure increases strongly with openness in both industrialized and less-developed countries. However, in less developed countries the increases are not in categories that insure for social risk but in such sectors as transportation and education. He also finds supportive evidence for the hypotheses that greater inequality and better political rights are associated with more redistribution, particularly in industrialized democracies. As for the Wagner's Law, Shelton's results suggest that it is in reality driven by the demographic structure of countries, where richer countries tend to have more elderly and thus spend more on social security and other forms of social protection which boosts their total expenditure. However, the law fails to hold when social security is excluded from total expenditure as spending declines with per capita income. He also concludes that in more populous countries and in countries with greater ethnic fractionalization, spending on many categories of public goods (education, healthcare, public order and safety) is associated with higher spending by local governments (not necessarily fully reflected in central government expenditures in the form of transfers to local governments). Finally, the paper finds majoritarian governments are statistically associated with reduced expenditures and without any bias towards or against any type of spending.

Methodology and Results

In the rest of this note, we aim at replicating Shelton's econometric approach on a selected set of Sub-Saharan countries, including all SACU countries, for a number of reasons: First, because SACU countries derive a large part of their tax revenue from transfers from South Africa through the SACU revenue-sharing formula. This formula implicitly compensates Botswana, Lesotho, Namibia and Swaziland (BLNS) for relinquishing their individual rights for trade policy design to South Africa. Thus, actual tax revenue in Botswana, Lesotho, Namibia and Swaziland (BLNS) may not be solely determine by their tax potentials and efforts. Second, SACU countries are among the most unequal countries in the world, and testing the impact of inequalities and political systems on the demand for public expenditure may be particularly enlightening. And third, because analyses combining high and low income economies makes difficult the interpretation of results, given the heterogeneity of institutions between these groups that simple indicators may not fully capture. Hence the choice to restrict the analysis to Sub-Saharan Africa, seen as more homogeneous institutionally.

Using a cross-country sample of 37 Sub-Saharan Africa countries, we regress the share of central government expenditure over GDP (in 2015) on a set of structural factors. Given our focus on the impact of inequalities, we retain the Gini coefficient as an explanatory variable in all our regressions and test with it other potential structural factors. Simple correlation analysis suggests that inequalities are not significantly correlated with any other explanatory variables.

Most tested variables have the expected sign and are statistically significant. The GINI coefficient (Source: WDI) is of expected sign and statistically different from zero in all specifications. Results suggest that a one percentage point increase in the GINI coefficient (i.e. worsened inequalities) increase public expenditure by 0.26-0.37 percentage points of GDP. The trade openness variable (TROP, measured as the sum of exports and imports of goods and services over GDP, averaged over the period 2010-15; Source: WDI) is expected sign and statistically different from zero. Results suggest that a one percentage point increase in the TROP ratio (i.e. increased exposure) increase public expenditure by 0.15 percentage points of GDP.

democracy's unresolved dilemma", American Political Science Review 91 (1), 1–14.

[12] Persson, Torsten, and Tabellini, Guido (2004), "Constitutional rules and fiscal policy out-comes. The American Economic Review 94, 25–46; Milesi-Ferretti, Gian-Maria, Perotti, Roberto, and Rostagno, Massimo, (2002), "Electoral systems and public spending", Quarterly Journal of Economics 117 (2), 609–657.

The population variable (POP, expressed in millions; Source: WDI) is of expected sign and statistically different from zero, suggesting that more populated countries have lower demand for public expenditure. In the absence of other control variables than GINI, the GDP per capita variable (GDPC, expressed in constant PPP$ and averaged over the period 2010-15; Source: WDI) is of the expected sign but not statistically significant. The political rights variable (POLR, ranging from 0 to 1, worst to best; Source: Freedom House) is also of the expected sign, but is not either statistically significant. In contrast, the majoritarian political regime variable (MAJS, taking the value of 1 for majoritarian systems and 0 otherwise; Source: Persson and Tabellini, 1999) and the presidential political regime variable (PRSS, taking the value of 1 for presidential systems and 0 otherwise; Source: Persson and Tabellini, 1999) are both of the expected sign and are statistically significant.[13] Likewise, the ethnic fractionalization variable (ETHFR; Source: Alesina et al., 2003) is of the expected sign and is statistically different from zero: less homogeneous societies tend to demand less goods and services from central governments.[14] Taken all together (Table 1, Column 9), these variables explain two-third of the observed differences in government sizes between the 37 sub-Saharan countries considered in the sample. In this specification, the POP variable loses its statistical significance, as strongly (inversely) correlated with the TROP variable. In contrast, the GDPC variable becomes significant and of the expected sign.

Using this model (Column 9, Table 1) allows to predict quite accurately the ranking of SACU countries. Lesotho continues to rank first, while other SACU countries rank among the first 9 nations in terms of predicted government sizes. Given standard errors of predictions, the model also allows to conclude that the considered structural variables can explain with statistical significance why Lesotho records much higher public expenditure than all other countries in the sample. However, except for Nigeria lying at the other extreme of the spectrum, one cannot infer from the model statistically significant differences in predicted government sizes across countries.

The model can finally be used to identify the respective contributions of the different variables to differences observed across countries in government sizes. Variables are regrouped in 3 different groups:

- *Inequalities* reflects the contribution of the GINI variable to the observed difference between countries' predicted government sizes and sample average.
- *Political systems and rights* reflects the combined contributions of the POLR, MAJS, PRSS and ETHFR variables to the observed difference between countries' predicted government sizes and sample average.
- *Economy and population* reflects the combined contributions of the TROP, POP, and GPDC variables to the observed difference between countries' predicted government sizes and sample average.

Results suggest that SACU countries' comparatively high government sizes are driven by the combination of high inequalities and conducive political systems to press governments for more fiscal redistribution. SACUs' government sizes are on average about 10 percentage points higher than the Sub-Saharan average (as measured by this sample); and out of this difference, more than 8 percentage points of GDP can be attributed to the combination of inequalities (3.5 percentage points of GDP) and political systems (4.2 percentage points of GDP), confirming the strong role played by the fiscus to redistribute resources in Namibia and South Africa.[15] In contrast, economic and

[13] Persson, Torsten, and Tabellini, Guido (1999), "The size and scope of government: comparative government with rational politicians", European Economic Review 43, 699–735.

[14] Alesina, Alberto, Devleeschauwer, Arnaud, Easterly,William, Kurlat, Sergio, and Wacziarg, Romain (2003), "Fractionalization", Journal of Economic Growth 8, 155–194.

[15] Using the Commitment to Equity framework, World Bank found that fiscal systems contributed to reduce the Gini coefficient (measuring income inequalities) by respectively 20.6 and 17.5 percentage points in Namibia and South Africa. World Bank (2017), "Does Fiscal Policy Benefit the Poor and Reduce Inequality in Namibia", June, Washington, DC.; World Bank (2014), "Fiscal

demographic variables only contribute for 1.9 percentage point of GDP to the observed difference with the sample's average. Within SACU, the large population in South Africa, and the relatively high per capita GDP (except for Lesotho), contribute to lowering demand for public expenditure.

Conclusion

As all SACU countries currently face difficult macroeconomic situations, [16] a better understanding of the structural drivers of public expenditure is important to possibly identify realistic fiscal consolidation pathways. While high levels of government expenditures in BLNS are often associated with the opportunity provided by SACU transfers from South Africa, our results suggest that structural factors driving the demand for public expenditures also play a role. In particular, the response of political systems to inequalities appears to be a main driver of public expenditures, reflecting the ongoing social contract in these countries built since independence. Thus, fiscal consolidation programs designed to restore fiscal sustainability without affecting the role played by governments to reduce inequalities have probably a greater chance of achieving sustainable results.

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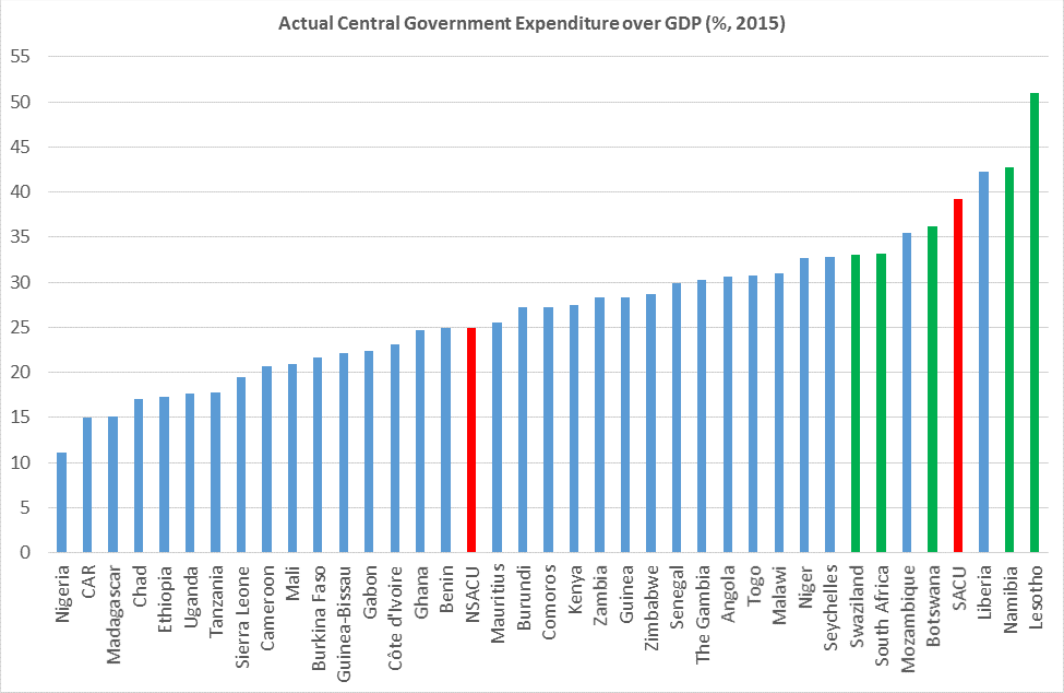
Policy and Redistribution in an Unequal Society", South Africa Economic Update 6, November, Washington, DC.

[16] World Bank (2017), "South Africa's Recent Economic Developments and SACU Revenue for BLNS Countries", Southern Africa Programmatic Fiscal Work (P148373), June 2017.

Appendix 1 – Tables and Figures

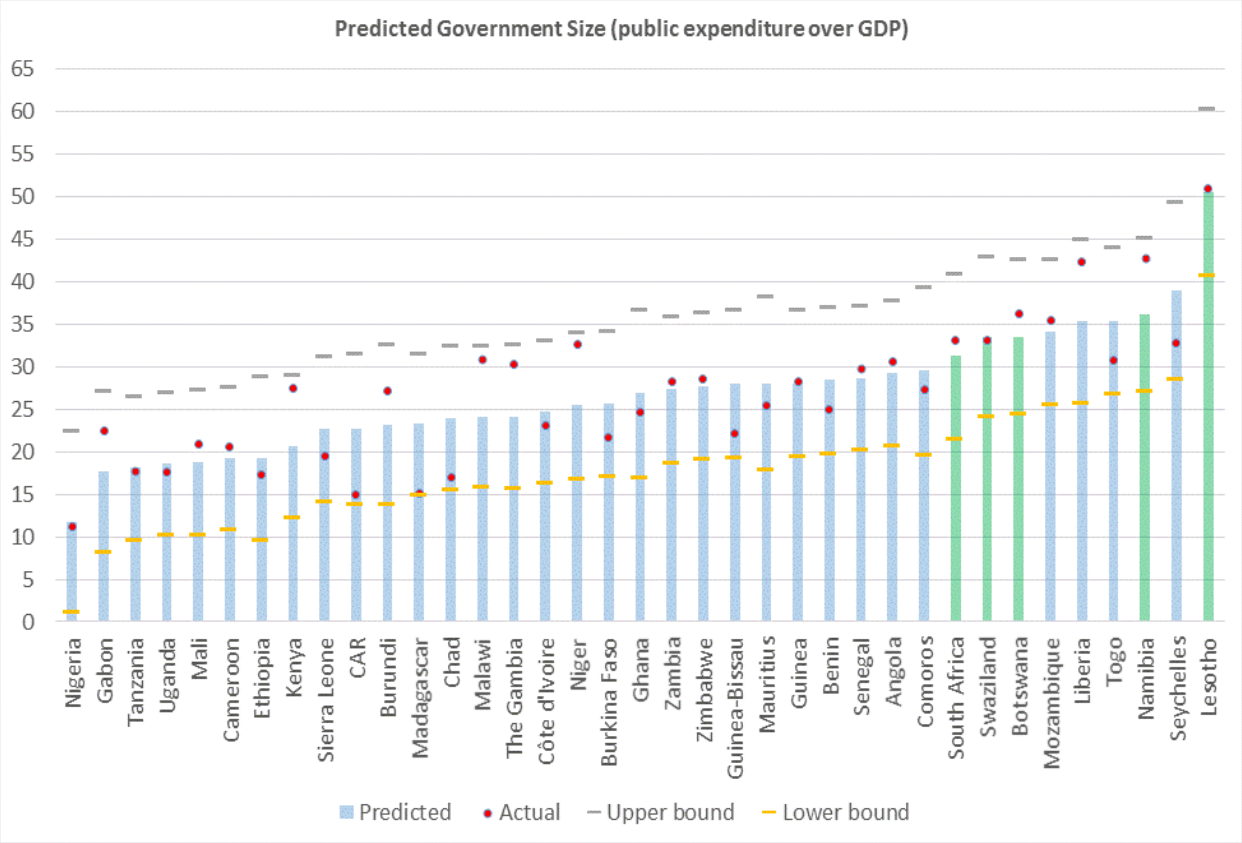


Source: Government Financial Statistics, International Monetary Fund.

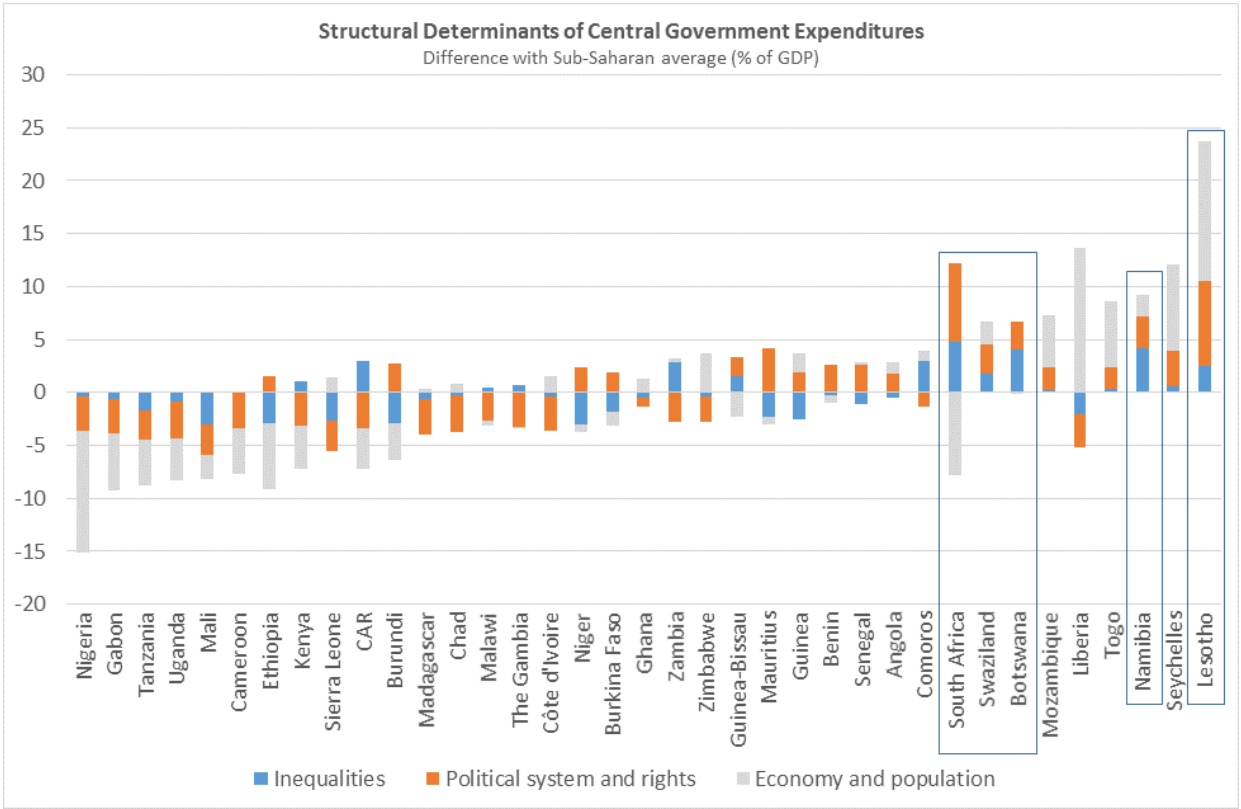
Table 1: Determinants of Demand for Central Government Expenditures (% of GDP, 2015)

	1	2	3	4	5	6	7	8	9
C	10.009	2.089	14.853	10.560	8.035	15.621	16.921	22.743	13.409
	1.39	*0.38*	*2.17*	*1.44*	*1.10*	*2.32*	*1.94*	*2.68*	*1.84*
GINI	0.379	0.266	0.320	0.352	0.368	0.355	0.317	0.289	0.257
	2.39	*2.25*	*2.17*	*2.12*	*2.33*	*2.48*	*1.95*	*1.89*	*2.44*
TROP		0.16							0.15
		5.51							*4.73*
POP			-0.106						-0.029
			-2.71						*-0.96*
GDPC				0.000					-0.001
				0.59					*-2.71*
POLR					8.030				2.532
					1.21				*0.57*
MAJS						-7.342			-5.010
						-3.03			*-2.92*
PRSS							-4.980		-4.691
							-1.37		*-1.76*
ETHFR								-13.174	-1.900
								-2.46	*-0.45*
Adj R2	0.116	0.519	0.293	0.099	0.127	0.283	0.137	0.227	0.664

Source: World Bank staff calculations. Note: in italic are T-Student statistics.



Source: World Bank staff calculations.



Source: World Bank staff calculations.