

An empirical investigation into the Determinants of External debt in Sub Saharan Africa.

Adonia Chiminya and Eftychia Nicolaidou

School of Economics, University of Cape Town

Abstract:

This paper investigates the main determinants of external debt focusing on a group of 36 countries from Sub Saharan Africa (SSA), over a long period spanning from 1975 to 2012 using pooled OLS and fixed effects. Instead of relying only on economic factors (the common approach in the relevant literature, the study also identifies political factors as debt determinants. The results indicate that democratically administered governments in the region accumulate more debt than autocratic governments, while, governments with parliamentary systems in place accumulate more debt than those with presidential democracy. However, governments with constrained executives tend to accumulate less debt than those that are unconstrained in the region and countries with more open and competitive electoral systems are likely to accumulate less debt. Finally, countries that received debt relief seem to accumulate less debt in comparison to those that did not receive debt relief. The study also highlights the importance of economic activity in reducing debt in the region. Economies that are more open reduce their debt burden. Overallly, therefore, the paper points to the importance of both political institutions and economic factors in explaining the indebtedness of countries in Sub Saharan Africa.

Keywords: External debt; Political institutions; SSA, Pooled OLS, Fixed Effects

JEL classification: H60 N17 O11 O55

1 Introduction

The determinants of external indebtedness in developing countries have generated a lot of interest among academics and policy makers, with much attention given since the onset of the external debt crises in the early 1970s which affected most low income countries. In the literature, adverse global developments are identified to be the main drivers of debt accumulation (like the worldwide events of the 1970s and 1980s such as oil price shocks, high interest rates, and recessions in industrial countries and weak commodity prices) (Iyoha, 2000 and Easterly, 2002) which are beyond the control of the countries. On the domestic front, macroeconomic policies have been blamed such as fiscal irresponsibility, exchange rate misalignment and policies that deter saving such as negative real interest rates (Osei, 1995). Most studies however, tend to neglect the role played by political institutions in accumulation of debt as government borrowing could be a reflection of different political institutions in which they govern. Kaufman (1992) suggests that different political systems may generate different incentives to borrow but a limited literature has attempted to investigate the effect of some socio political variables on debt.

This paper aims to fill in this gap in the existing literature on the determinants of external debt in Sub Saharan Africa (SSA). The study focuses on SSA for a number of reasons. Firstly, the region has particularly suffered from external debt crises (macroeconomic instability) in recent decades. Secondly, it is home to most low income countries, the bulk of which are classified as highly indebted poor countries (HIPC). To date 33 out of 39 HIPCs are from SSA (IMF, 2014). Thirdly, the region has also suffered badly from conflict and political instability and many countries in the region depend on external debt for growth and development. Furthermore, the region has also gone through political transitions from dictatorships during colonial times to democratic regimes in most countries which could shape government borrowing and investment decisions. Bittencourt (2013) in studying the determinants of government and external debt points out the need to extend the analysis of indebtedness to particular groups of countries that have been through important political and economic changes.

Firstly, the drivers of indebtedness are analysed looking at economic factors, in addition political variables are considered to reflect that countries in the region are experiencing conflict and are politically fragmented. Particularly we focus on how constrained executives, different systems of government and different regime types affect debt accumulation. It is assumed that different political systems may generate different incentives to borrow by shaping the framework through which policy makers make decisions hence the need to empirically assess

how these factors affect debt accumulation, testing for different predictions proposed by literature, thereby, furthering our knowledge of the region.

The rest of the study unfolds as follows: the next section reviews the relevant literature, while section three outlines the theoretical framework for the study. Then section four presents the empirical methods used to answer the study's questions along with the empirical findings. Finally section five concludes the study.

2 Literature

The aim of this section is to draw on and extend the theoretical literature on the determinants of external indebtedness. A critical review of the literature is undertaken looking at both theoretical and empirical work and identifying their relevance to the study. The section provides an insight into the factors that result in debt accumulation as identified in the relevant literature and also provides an analysis of political economy theories identifying political variables that can explain variations in external debt in the region. The theoretical model will be derived from the analysis of literature in this section.

The "Two gap" model pioneered by Chenery and Strout, (1966) is important in explaining how external debt is accumulated, as it deals with the interaction between the savings constraint and the foreign exchange constraint. In the model, borrowing is justified when there is a rising gap between domestic savings and investment. The savings investment gap argument is that at the expense of running a current account imbalance, a country may manage to obtain resources to invest even if its domestic savings level are low (Singer, 1990). Generally, developing countries have a deficient level of domestic savings to finance the level of investment necessary to achieve desired rates of growth or lack foreign exchange to acquire capital goods. This lack of foreign exchange can lead countries to acquire foreign funding, thereby, accumulating debt in the following ways. Firstly, developing countries own currencies that are not easily convertible and secondly overseas borrowing can bridge the gap between required import expenditures and actual export earnings necessary for investment to help in the financing of a country's imports. In SSA this is particularly true as most countries in own currencies that are not easily convertible, hence, there is a need to borrow to satisfy the import-export gap as export earnings are usually insufficient to generate enough foreign currency to finance imports, this makes overseas borrowing an important means of gaining access to imports.

Bacha (1990) extended the Two gap model to include the fiscal gap, as fiscal constraints are also seen as a major limitation to the growth of developing countries given that fiscal deficits may highly necessitate foreign borrowing. The fiscal gap is derived from government budget limitations, especially where the government does not have enough resources to finance expenditures and cannot raise enough taxes. Foreign borrowing in such cases plays a pivotal role in financing government spending. In this study, gap models provide an insight into some economic factors that could explain debt accumulation especially in SSA. Of particular importance is the link between the fiscal sector and debt as political institutions are likely to have an effect on the fiscal side of the budget, thereby, impacting on indebtedness.

Further, the tax smoothing model provides an insight into how debt is accumulated from the fiscal gap perspective. Drawing from the theory of public spending, taxation and debt founded by Baro (1979), the basic intuition is that government should debt finance temporary shocks and tax finance permanent shocks in the economy. The unique aspect of tax smoothing theory is the distinction between temporary and permanent movements in government spending. Pearson and Tabellini (2000) argue that while tax smoothing theory could succeed to explain debt and deficits during wartime, it fails to explain for their persistence during peace time. This study seeks to account for the persistence and variations in debt levels in African countries. These wide variations in debt make it difficult for tax smoothing models to account for different debt levels in countries. These could possibly be explained by differing political institutions in countries as public policies are partly a reflection of the political behaviour of policymakers.

On a different vein, political economy models also provide an explanation into how countries get indebted. Strategic considerations by politicians can produce inefficiently high public deficits and lead to debt accumulation. The theory of strategic debt accumulation posits that that current policy makers can restrain future policy makers spending by increasing debt levels. Tabellini and Alesina (1990) suggest that different governments in office at different times can take advantage of this strategic possibility and this political game can lead to an accumulation of the debt level above the optimal level. Strategic behaviour of political leaders can be one of the reasons for indebtedness of many SSA countries as countries move through political transitions from autocratic regimes during colonisation to democratic regimes which results in different governments in office at different times. The governments could take advantage of this strategic possibility and they may be tempted to overspend to constrain the next governments. In SSA, governments may accumulate more debt during transitions, thereby, leaving the burden to the next government. This is particularly true for democratic governments

where chances of re-election are rather uncertain and thus political leaders can try to limit resources available to new governments leading to debt accumulation during transitions in government. In this study we will test this hypothesis by looking at the effect of regime types on debt accumulation.

Furthermore, differing ideologies of political parties in government could lead to indebtedness. The theory of political budget cycle which was first presented by Noudhaus (1975) falls into this category and is classified into opportunistic policy makers and partisan models. Models of opportunistic policy making are based on the assumptions that voters do not take into account the government intertemporal budget constraint and policy makers are opportunistic and take advantage of voters and use budget deficits to increase their chances of re-election. Voters are believed to overestimate the benefits of current expenditure and underestimate future tax burden and opportunistic politicians who seek to be re-elected and take advantage of voters by increasing spending more than taxes in pre-election moments to please voters. This approach can explain expansionary fiscal policy in electoral moments as voters do not punish politicians for conducting policies leading to excessive deficits and high debts, however, these models have been criticised due to the fact that voters do not always underestimate future tax burdens as they understand that an increase in expenditure or debt before an election will be passed to them in the future. Opportunistic models provide insight into how debt accumulates pre-election periods as they could reflect ideologies of political leaders highlighting the importance of political factors in explaining indebtedness in the region.

In addition, there are also theories that reflect government fragmentation in decision making that can bring about delayed stabilisation which could be another source of debt accumulation in an economy. Disagreements among various decision makers especially in cases where there are several political agents and when no single individual or interest group controls policy at a given time, interactions among policy makers can produce inefficient deficits that can persist because each policy maker or interest group delays agreeing to fiscal reform in the hope that others will bear a large portion of the burden. Alesina and Drazen (1991) argue that each party in the bargaining may choose to delay to try to get a better deal for itself and as a result choosing to delay may improve a group's expected outcome at the cost of worsening the overall economic situation. The end result is delayed stabilisation even though there are policies that are known to make everyone better off. In cases where coalition governments are made of different parties representing different groups of the electorate, the higher the number of different policies to be implemented, the higher the expenditures generated and higher levels

of revenue required to finance those expenditures which also results in public debt accumulation. These theories are of importance especially to SSA given the high levels of conflict, electoral competition in new democratic governments and fragmented governments. All these could result in debt accumulation. In this study we adopt variables that reflect the political economy as well as economic factors so as to capture the behaviour of political leaders which may lead to more debt being accumulated. The gap models will be helpful in identifying economic factors that could result in debt accumulation while from the political economy theories, political factors will be considered.

Empirically, while there is extensive literature on the economic factors that affect external debt, the role played by political factors in the accumulation of foreign debt has received substantially less attention. Specifically, most studies tend to focus on economic factors and shocks as the main drivers of external debt accumulation, neglecting the role political factors play. Researchers have found shocks imposed by the global economy such as worldwide events of the 1970s and 1980s (oil price shocks, high interest rates, and recessions in industrial countries and weak commodity prices) as contributors to debt build up as most countries became indebted after this period. However, this paper takes a different approach focusing on both economic and political institutions since they are likely to influence the decision making of governments in fiscal policy decisions which also include debt accumulation focusing upon a sample of countries in SSA.

As already mentioned, most empirical work on the determinants of external debt tend to focus on the economic factors and neglect socio-political factors. Eaton et al (1981) have found economic factors to be important determinants of debt, finding the demand for borrowing to be positively related to income variability, ratio of imports to GDP and initial income while in a closely related study Hajivassiliou (1987) covering 79 developing countries for the period 1970-1982 found the determinants of indebtedness to include total debt service and interest rate shocks in addition to growth of GDP per capita, import ratio and export ratio. On a slightly different vein, other studies including (Ferarro et al, 1994; Atingi, 2000; Roodman, 2001 & Easterly, 2002) found that the rise in interest rates, deterioration in terms of trade and real effective exchange rate were chief variables impacting on foreign indebtedness putting emphasis on external shocks as the main reason why countries accumulated debt. Hence most of these studies focus mostly on the role of economic factors and shocks imposed by the global economy as the main factors leading to indebtedness. However, given that most countries face the same shocks it would be expected that their debt levels would also be the

same but there are wide variations observed in the debt levels accumulated by countries which cannot be attributed to shocks alone. Perhaps these variations could be explained by differences in political institutions of different countries which could shape how governments accumulate debt, hence the need consider the effect of political variables on indebtedness in empirical analysis.

Turning to Africa, early studies on SSA focussing mainly on the debt crisis in Africa put more emphasis on exogenous factors. Adjayi and Khan (2000) classified the determinants into domestic and external factors, they found factors such as worsening terms of trade, rising interest rates, variability in export revenue and government expenditure as major determinants of external debt. Studies focusing on SSA have found the region to be uniquely different from the rest of the world. Currently, SSA contains the bulk of the world's low income countries classified as HIPC and at least a third of its countries have experienced civil war or conflict (Miguel, 2010). Ahmed (2012) found that the region boasts of lower adult literacy rates, human poverty scores and socio economic developments. Given these facts it is critical to focus on the region to empirically determine factors that lead to debt accumulation in one of the most vulnerable regions.

On a slightly different vein, Tiruneh (2004) found capital flight apart from other economic variables to be another important variable in explaining debt accumulation in developing countries, blaming irresponsible and corrupt governments, we believe political institutions play a role in influencing how governments and individuals make decisions. Hence advocates for the role of political institutions in the indebtedness of countries. Woo (2005) emphasized the role of inequality and polarisation which may generate fighting for common resources pool and leads to higher deficits and consequently output collapse, resulting in debt accumulation in Latin America and African countries.

In a more recent study, Bittencourt (2013) investigated the main determinants of Government and External debt in South America covering the period 1970-2007 and the results based on Dynamic panel and principal component suggest that economic growth has the ability to reduce debt in the region. Furthermore, he identified other important variables in the literature such as inflation, constraints on executive and inequality to be important for South America. Results for constraints on executives which is a variable that reflects political institutions do not present clear cut estimates as signs tend to alternate and the level of significance is not always ideal. A drawback of the Bittencourt (2013) study is that it ignores the role of political institutions in

the accumulation of debt as they influence the way governments make fiscal decisions and debt accumulation. Also the inconclusive finding on the variable on executive constraints requires further investigation probably in a different setting like SSA.

In a study related to ours, Colombo (2009) identified economic, institutional and socio political factors (level of output, degree of trade openness, depth of the financial system, exchange rate flexibility, transparency of electoral openness and political stability) as important factors in the accumulation of debt for developing countries, however, the study generalises and puts Africa as a dummy. It is important to identify those factors that are specific to Africa to avoid particular generalisations on the determinants of indebtedness. It is also important to note that most studies on political institutions have focused on the effect on budget deficits while limited attention has been made to their relationship with debt. Results from the studies tend to be mixed with political variables in some cases found to be insignificant (De Haan and Sturm, 1997). Furthermore, much focus is on developed countries with the need for empirical analysis on developing countries like those from SSA given the level of conflict which include ethnic, colonial wars, successional and political fragmentation within governments in the region. Political factors could explain regional differences in the accumulation of debt. These factors include regime types, systems of government and the presence or absence of checks and balances on executives providing an explanation on how policy makers accumulate debt. Craigwell et al (1988) argue that governments in some countries engage in excessive spending prior to an election to gain favour of electorate, while Alesina and Tabellini (1988) also suggest that governments in power know when their term ends and know a new government will be responsible for debt incurred hence will tend to over borrow.

SSA countries also tend to overspend during transition, a result of lack of checks and balances on executives after democratic transitions. Sarr (2011) explains that an unchecked ruler in a resource rich country can use natural resources as collateral and facilitate acquisition of loans for private benefit. In light of this, the study also tests whether checks and balances would constrain the behaviour to accumulate more debt.

What is clear with regard to past research is the limited empirical evidence on the role political institutions play in debt accumulation. This study aims to add to the literature by empirically analysing both economic and political factors as possible determinants of external debt in the region as political institutions also plays an important role. This is particularly the case when there are transitions in government, where there is absence of checks and balances, when

political ideologies differ and when the systems in which governments operate differ. The study also provides some interesting evidence to understand the history of SSA instead of treating the region as a dummy or an outlier.

2.1 Theoretical framework

In this paper, we adopt the framework by Alesina and Tabellini (1990) which formalises the role of democracy or alternating government coalitions on debt. The framework considers an economy with different policy makers who randomly alternate office and pursue different objectives. In this case public debt is used strategically by each government to influence choices of its successor. The incumbent or outgoing in some cases would bequest new competing coalition coming into power with high debt to be repaid in the future, which would financially constrain the new regime in its initial stage. The equilibrium stock of debt tend to be higher than when a social planner is certain about future reappointment. Where there are disagreements among alternating governments and uncertainty about the election outcome this prevents the party in office from fully internalising the cost of leaving debt to its successors suggesting a deficit and debt bias in democratic governments. This is of interest to SSA with transitions in governments as most of them shifted from autocratic regimes during colonial times to democratic regimes. In this paper, we test empirically if there is a debt bias in democratic regimes in comparison to autocratic governments along with other political and economic factors that are described in the next sections.

3 Data

The study is based on a panel of 36 countries from Sub Saharan Africa (SSA) covering the period 1975-2012. The time period is influenced by the availability of data on political indicators. Data on economic variables are mainly obtained from world development indicators, Penn world tables and global development finance while political and socio political variables are obtained from the database for political indicators and the Polity IV database. For more information on variable description and sources see table 1 below

Table 1: Variable description and Source

Variable	Description	Source
Extd	Log of debt to GDP ratio	World development indicators
Extd(-1)	Lag of Log of debt to GDP ratio	World development indicators
Gdp	Log of Constant GDP	World development indicators
Open	Log of trade Openness	Penn World tables
Growth	Growth rate of GDP	World development indicators
RIR	Real rate of interest	Global development Finance
Gcf	Log of gross capital formation to GDP ratio	World development indicators
Inflt	Inflation	World development indicators
Tr	log of total reserves to external debt	World development indicators
Hipc	Dummy for HIPC initiatives	IMF classification
Xconst	Executive constraints	World development indicators
Polity	Regime type	Database for Political Institutions
Liec	Electoral competitiveness	Database for Political Institutions
System	Parliamentary or presidential selected	Database for Political Institutions

The dependent variable is debt burden which is measured as total external debt as a percentage of GDP (Extd) .While explanatory variables include a measure of the level of development of a country, proxied by growth of GDP. The effect of income is ambiguous as the high levels of output growth may indicate the ability of a country to provide its foreign lenders with collateral, thus, the more income that a country has the higher the chances of acquiring external loans hence a positive effect may be expected. On the other hand, if a country has more income it may not require external funding and reduce the chances of borrowing. In this case, rising GDP automatically lowers the debt burden but may also encourage new borrowing, hence, the sign is not known with certainty.

Furthermore, trade openness (Open) is another important explanatory variable. Open can have a positive or negative effect on debt burden depending on the levels of imports and exports. If exports are greater than imports trade openness negatively affects debt as higher level of trade guarantees the availability of foreign currency that is crucial for debt repayment while if imports are greater than exports openness will positively affect debt. In countries where imports are growing faster than exports (like in countries that underwent trade liberalisation) the effect is expected to be positive. Colombo et al (2009) found the effect of openness to be positively related to external debt in a group of developed countries while on the contrary Bittencourt

(2013) among others found the effect to be negative. Trade openness fosters a country's growth prospects. Data on trade openness comes from Penn world tables.

In addition, reserves (Tr) also are another source of external finance like external debt. Easterly (2001) argues that high reserves may result in reduced willingness to borrow. On the contrary, reserves can indicate an enhanced ability to manage debt as in some cases new debt may be used to build up reserves, hence, the effect of reserves on external debt is ambiguous. Data for reserves is obtained from the global development finance.

Turning to political variables, executive constraints (Xconst) account for institutional constraints on the decision making of executives, whether individuals or collective groups. Such limitations are imposed by accountable groups. The concern is with checks and balances between various parties in the decision making process. It is believed that governments with proper checks and balances are likely to accumulate less debt. However, Bittencourt (2013) did not find clear evidence on this, with the variable Xconst flipping signs in a study of young democracies of South America. Data on executive constraints is obtained from the World Development Indicators.

Moreover, transparency of the political process is captured through a measure of electoral openness and political competitiveness (Liec). The variable quantifies electoral competitiveness based on the number of parties competing in the last election where higher values of the variable are associated with more open and competitive electoral systems. Competition in a political system can lead to fiscal policy that results in smaller deficits resulting in less debt accumulated by disciplining the incumbent not to implement unsustainable fiscal policy (Tabellini, 1991). On the contrary, greater competition provides incentive for the incumbent to be responsive to preferences of voters as there are more credible threats of being removed from office, hence, the relationship with debt is also not very clear.

The variable Polity is a measure of regime type, taking a value of 1 for democratic regimes and 0 for autocratic regimes. Crain (1978) offers two arguments in favour of larger deficits and debt. On one hand, in non-democratic regimes voters do not choose their representatives, hence, their preference may not be reflected in the decision making process and may not affect the provision of public goods and services and as a result government expenditures. Also, non-democratic governments do not face an election constraint and have no incentive to attract voters in the next election with debt spending. On the other hand, in democratic governments there is uncertainty of re-election and possibility of inter transfer of debt which may trigger the

incumbent government to raise deficits. The variable takes the value of one for democratic regime and zero for autocratic regimes (these are derived from the polity variable). Furthermore, the variable system of government (system) is also binary and takes a value of 1 when the system is parliamentary, otherwise zero. Political systems affect the behaviour of policy makers and play a role in shaping debt. It is assumed that economic policy is easier to formulate and implement under presidential system as the government has greater independence and less interference from legislature than under parliamentary system (Woo, 2003).

The study includes 36 countries from Sub Saharan Africa, 22 countries are classified as low income countries while 10 countries are classified as lower middle income countries the remaining four countries which include Botswana, Gabon, Mauritius and South Africa are classified as upper middle income countries. Also at least 25 countries from the sample have benefited from debt relief under the Highly Indebted Poor Countries initiatives (HIPC). The full list of countries included in the study is provided in table two below

Table 2: Sub Saharan Africa Sample

Country			
Benin*	Ethiopia*	Mali*	Swaziland
Botswana	Gabon	Mauritania*	Tanzania*
Burkina Faso*	Gambia, The*	Mauritius	Togo*
Burundi*	Ghana*	Mozambique*	Uganda*
Cameroon*	Guinea	Niger*	Zambia*
Central African Republic*	Guinea-Bissau*	Nigeria	Zimbabwe
Chad*	Kenya	Rwanda*	
Congo, Dem. Rep.*	Lesotho	Senegal*	
Congo, Rep.*	Madagascar*	Sierra Leone*	
Cote d'Ivoire*	Malawi*	South Africa	

Note :(*) indicates HIPC countries

Descriptive statistics are presented in table three for all the variables to be used in the study, where the variable polity is dummy variable taking a value of 1 if a country is democratic and a value of 0 if it is autocratic while the variable system is also a dummy taking a value of 1 when the government is parliamentary administered and 0 if otherwise. In terms of electoral openness and competitiveness higher values of liec represent a more open and competitive electoral

system while higher values of xconst represent more constrained executive in the political process.

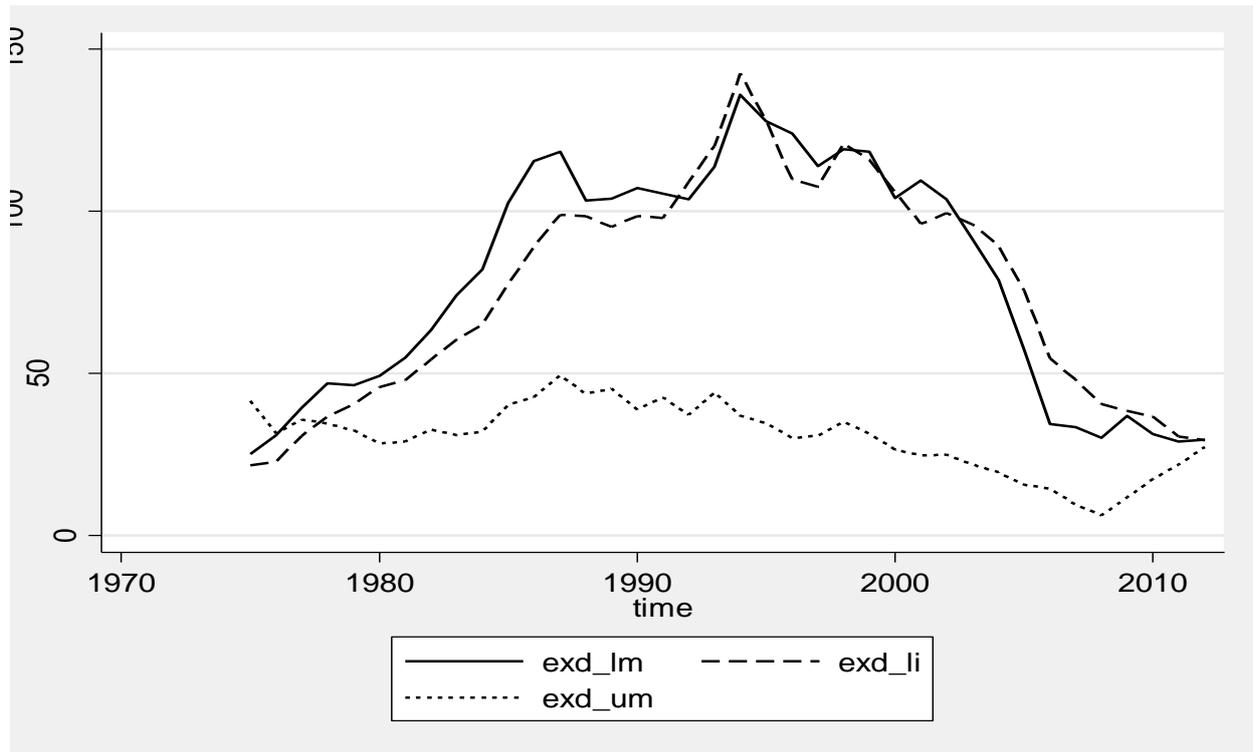
Table 3: Descriptive Statistics of variables

Variables	N	Mean	sd	min	max
Extd	1,302	8.489	1.182	0.679	10.76
Growth	1,354	3.488	5.905	-50.25	35.63
RIR	942	8.608	30.01	-53.44	572.9
Gdp	1,361	22.30	1.905	19.21	31.07
Popn	1,404	20.09	2.006	13.16	23.56
Inflt	1,225	0.142	0.333	-0.404	5.502
Gcf	1,311	7.473	0.528	3.377	8.920
Open	1,296	8.581	0.549	6.506	9.862
Tr	1,297	7.097	1.672	2.063	12.36
Hipc	1,404	0.156	0.363	0	1
Xconst	1,258	3.192	1.951	1	7
Liec	1,367	4.752	2.288	1	7
System	1,368	0.106	0.308	0	1
Polity	1,441	0.321	0.467	0	1
Number of Countries	35	35	35	35	35

3.1 External debt trends in SSA

External debt can be good for development, however if accumulated to very high levels it can be disastrous for a country. Statistics for countries in SSA as shown in table 1 indicate that debt burden measured by debt as a percentage of GDP is generally higher in low income countries and lower middle income countries while it is fairly low in upper middle income countries. In the 1970s factors such as thoughtless and irresponsible lending by lenders during the commodity boom of the 1970s, as well as negative real interest rates of the 1970s in global markets caused by lax monetary and fiscal policy in industrial countries which made it rational for developing countries to borrow externally rather than save or attract equity investment were blamed for increasing debt ratios. All these led to an increasing debt burden among countries (IMF, 2014). An expanded access to sources of borrowing particularly the Euromarkets was also noted as another source of more debt accumulation by African countries. However, when the rise in debt is persistent, it cannot be attributed to shocks and external factors alone.

Figure 1: Trends in external debt.



Source: World development indicators Exd_li-external debt as share of GDP in low income countries in SSA. Exd_lm- external debt as share of GDP in lower middle income countries SSA. Exd_um- external debt as share of GDP in upper middle income countries SSA.

In the 1980s debt servicing became a problem in many African countries; a result of oil price shocks compounded by high and positive real interest rates ,volatile exchange rates with the US dollar depreciating resulting in increasing the dollar value of Africa's outstanding debt, persistent current account deficits due to instability of exports earnings and an increase in import bill compounded by the world recession and an extended drought period were attributed as the major reasons for excessive debt accumulation in SSA. The introduction of structural adjustment programmes (SAPs) in the late 1980s and early 1990s aimed at restoring stabilisation in the short run and facilitating growth in the medium term. SAPs were adopted by most countries in SSA, However, this became a period of declining income, standards of living ,increasing unemployment and increasing poverty(ILO,1996).Devaluation which featured in most SAPs led to an increase in total debt and debt service payment denominated in domestic currency(Iyoha,1999).Foreign investment failed to materialise due to political instability ,poor macro policy and weak economic performance while aid and other foreign investment were diverted to debt service payments to multilateral institutions and with rapid build-up of external debt and poor economic performance SSA debt crises deepened.

In 1996, the World Bank and IMF agreed a comprehensive approach called highly indebted poor countries initiatives (HIPC) for the poorest and most indebted countries of the world. In 1999, they reinforced the initiative to enhanced HIPC to provide deeper and faster debt relief while in 2005 the group of eight (G-8) proposed that the IMF, World Bank, international development association and Africa Development Bank cancel 100% debt on countries that had reached completion point under enhanced

However, this paper argues that Africa's indebtedness is not attributable only to economic factors and shocks on the global economy. The persistence in the accumulation of debt after periods of recession suggests that other factors may be responsible and a possible explanation could be found in the different political institutions in these countries, poor governance, and rampant corruption. Under such conditions, individuals in governments could borrow funds for personal use, there could be absence of checks and balances on government borrowing and spending, while, politically fragmented governments and civil wars could have resulted in more debt being accumulated in SSA.

4 Empirical model

Having considered the theoretical and empirical literature on the determinants of debt, the equation to be estimated includes both economic and political variables. Bittencourt (2013) also estimates a close model. Our model differs in that we include additional variables such as polity which is a measure of regime type, systems of government that is whether the government is parliamentary or presidential administered and liec a measure of electoral openness which are political factors.

$$Ext d_{it} = Ext d_{it-1} + \psi X_{it} + \gamma Z_{it} + \tau_i + \rho_t + \varepsilon_{it} \quad (11)$$

Where $Ext d_{it}$ is external debt to GDP. X_{it} includes economic determinants such as GDP growth rates (we expect economies which grow consistently fast to have low debt), a measure for trade openness(we expect more open economies to accumulate low debt), inflation rates(we expect higher inflation leads to higher debt through high nominal interest rates), share of Government to GDP (higher government participation tends to lead to high indebtedness) and $Z_{i,t}$ includes political factors such as executive constraints(we expect governments with proper checks and balances to accumulate less debt), system(we expect parliamentary administered governments to accumulate less debt because they impose greater constraints than presidential systems) , regime types(we expect democratic governments to accumulate more

debt to finance social spending) and a measure of electoral competitiveness(the more open and competitive the electoral system is, the more likely governments will accumulate debt).

4.1 Estimation Strategy

We have a panel of 36 countries covering the period 1975-2012 and make use of dynamic panel data analysis. Firstly, we use the Pooled OLS estimator which assumes homogeneity of intercepts and slopes and gives equal weight to between and within variation in data. We will also use the fixed effect (FE) estimator with robust standard errors for the correlation of residuals over time. The FE estimator assumes heterogeneity of intercept which is reasonable when dealing with a diverse group of countries like in our case. Estimates are consistent if unobserved heterogeneity is correlated with regressors. The FE makes use of only within variation in data but it may be of limited use in cases where variables do not show variability. If there are omitted variables and these are correlated with variables in the model, the FE provide a means for controlling for omitted variable bias, hence, we use it in our analysis.

The system GMM will be used for robustness checks as they control for possible endogeneity among variables, measurement error and omitted variable bias (Bond et al, 2001). While pooled OLS results and those of FE cannot be relied upon in the presence of endogeneity, the System GMM produces more efficient estimates which can be used for comparison purposes.

4.2 Empirical Analysis

Initially including only economic variables and then both economic and political variables, where OLS and fixed effects regressions of the determinants of debt are presented in table 5. Essentially, growth estimates are negative and statistically significant, which highlights the importance of economic activity in reducing external debt in the region. Furthermore, the result is in support of tax smoothing models as sustained economic activity reduces external debt, that is, during recessions external debt rises while during booms it is reduced through debt servicing. The results also suggest that more open economies are likely to have low debt levels as the variable “open” is negative and significant. This is in line with Bittencourt (2013) findings for South America young democracies. In line with debt relief initiatives by the International Monetary Fund (IMF) and World Bank, the dummy for highly indebted poor countries (HIPC) has the expected negative sign as countries that received debt relief reduced their debt burdens significantly while the effect of the variable population which accounts for

the size of the economy is ambiguous with the sign flipping and in some cases being insignificant.

Turning to our variables of interest, the more constrained the executives (xconst) are the less the debt that countries accumulate as they will be more accountable and responsible. Bittencourt (2013) also found similar results for South American young democracies. It can be noted that in countries with more constrained executives such as Botswana, Mauritius and South Africa their debt burden never really grew to unsustainable levels showing that constrained executives accumulated relatively low levels of debt in the region. The variable polity, which is a measure of regime type, suggests that democratic governments are more likely to accumulate more debt than autocratic regimes and this could be explained by the fact that creditors may loan more to democratic institutions than autocratic ones. Also in democratic governments there tend to be uncertainty in terms of re-election and hence they tend to appease the electorate by spending on social capital, health and education in order to be voted leading to accumulation of more debt in the process than autocratic regimes which may not need to be voted into power. An alternative interpretation is supported by Tabellini (1990) formalising the role of democracy or alternating government coalitions on debt, where the incumbent or outgoing could bequest the new competing coalition coming into power with high debt to be repaid in the future (strategic debt accumulation). This is likely to occur in democratic governments where there is uncertainty about being re-elected and outgoing governments may want to constrain new incumbents through debt accumulation.

Furthermore, external debt is also found to be lower in countries where the electoral system is open and competitive (liec), however, this differs from the result found by Colombo (2009) for developing countries where in more open and competitive electoral systems external debt was found to be higher as more open and competitive electoral process could result in more fragmented government coalitions. Finally, the variable system suggests that governments with parliamentary systems accumulate more debt than governments operating in other political systems. It can be noted that economic policy is easier to formulate and implement under a presidential system than under a parliamentary system. Woo (2003) argues that under a presidential system the government has greater independence and less interference from legislature while under parliamentary system a lot of parties need to be satisfied, the larger the number of actors the stronger the pressure for more expenditures and thus debt increases. The finding is also in line with Tabellini (1997) who found that large government deficits and debt are more common in countries with presidential systems. The central message of the analysis

is therefore that governments with mechanisms of accountability borrow less than those that operate within institutions through which society does not hold them accountable.

Table 5: Estimates of the Determinants of External Debts

Variables	OLS	Fixed Effects	OLS	Fixed Effects
Extd(-1)	0.91***	0.87***	0.90***	0.86***
Open	-0.07***	0.11***	-0.08***	-0.09***
Popn	-0.02***	0.00	-0.00	0.02*
Growth	-0.01***	-0.01***	-0.01***	-0.01***
RIR	0.00**	0.00**	0.00***	0.00**
Gcf	0.10**	0.15**	0.12***	0.19***
Inflt	-0.02	-0.06	-0.06	-0.10
Tr	-0.04***	-0.11***	-0.05***	-0.10***
Hipc			-0.11**	-0.16***
Xconst			-0.04*	-0.05*
Polity1			0.20*	0.25*
System			0.10	0.17**
Liec			-0.02***	-0.01**
Constant	1.38***	1.72*	1.22***	1.00
Observations	764	764	735	735
Number of countries		35		35
Country FE		YES		YES

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

The results presented in table 5 have been subjected to robustness checks, specifically, the results from the pooled OLS and FE are compared with those obtained using different estimation methods which address specific empirical issues. The GMM estimator gives more efficient results when variables suffer from problems of endogeneity, measurement error, omitted variable bias (Bond et al, 2001). The use of instruments for the right hand endogenous variables give consistent estimates. Furthermore, the system GMM has been shown to perform better in cases where time series are persistent and the number of time observation is small. Finally, by using GMM we allow for the possibility of endogeneity. Easterly (2002) argues that it may be growth or the lack of it that leads to indebtedness, but the results do not alter in terms of sign although the magnitude is slightly different when comparing to the System GMM estimates. The GMM also allows to take account of persistence of the stock of external debt by including the lagged dependent variable as a regressor. In addition to the positive and significant coefficient on the lagged value of debt most of the results are confirmed¹.

¹ We perform an autocorrelation test in the disturbance and the Sargan test. The null of no correlation of order one but the null of no correlation at second order correlation cannot be rejected. Sargan-Hansen test confirm instrument validity.

Table 6: Robustness checks

Variables	Sys GMM
Dependent Extd	
Extd(-1)	0.86***
Open	-0.10**
Popn	-0.00
Growth	-0.02***
RIR	0.002*
Gcf	0.18**
Inflt	-0.10
Tr	-0.07***
Hipc	-0.12*
Xconst	-0.05**
Polity1	0.24**
System	0.12*
Liec	-0.02**
Constant	1.51**
Observations	735
R-squared	
Number of countries	35
Country FE	

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

5 Conclusion

This paper contributed to the literature on the determinants of external debt in SSA by providing evidence from over the period 1975-2013. Instead of only relying only on the economic determinants of external debt which is common in the relevant literature, the study has gone one step further by emphasising the role of political institutions in debt accumulation. Pooled OLS and the fixed effect models were estimated. While, the analysis was complemented by a more satisfactory approach for dynamic panels, the system GMM, that provided estimates that were consistent with the initial findings.

The empirical findings support the role of economic factors on debt accumulation but most importantly, they provide evidence on the role of political factors as well. Specifically, governments which are not constrained or rather accountable accumulate more debt for longer periods. Also, it is rather surprising that democratic governments accumulate more debt than autocratic regimes. This suggests two things: Firstly, democratic governments are rewarded by the international financial markets (in the sense that they can borrow more money). Secondly, governments in SSA countries strive to reduce inequality, and governments accountable to

masses are willing to accumulate foreign debt to finance programmes that benefit the decisive voter (i.e spending on social capital, health and education) which may result in high debt levels. This is also consistent with Tabellini (1990) in the case of alternating government coalitions, the incumbent or outgoing would bequest the new competing coalition coming into power with high debt which would financially constrain the new regime. Governments with constrained executives are found to accumulate less debt than in cases where executives are unconstrained. This result implies that improving institutions and accountability by governments is critical in reducing indebtedness in the region.

The importance of this study is that we are able to find factors that are particularly important to the region without generalisations, also through the study we can understand further the regional development on the debt front while also providing an updated analysis to the determinants of debt in the region.

Future research should not ignore the effect of political factors on debt accumulation and should be extended to other regions and specific countries in order to allow comparisons among regions and countries to be made.

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