

CHAPTER ONE: INTRODUCTION AND BACKGROUND

1.1 Introduction

This chapter presents detailed background information about the structure of public budgets in Africa and about trends in relevant governance indicators. This information is crucial for the discussion in subsequent chapters on how to determine the structure of a public budget. This chapter also presents the problem statement, the objectives of the study, the hypotheses to be tested and finally the outline of the study.

1.2 Background

The structure of public budgets has attracted considerable attention among economists since the seminal work of Samuelson (1954). This attention has recently been fuelled by the recognition that the nature and structure of a budget has an important role to play in economic growth. For example, the model developed by Devarajan, Swaroop and Zou (1996) shows the link between public expenditure and growth, and the conditions under which a change in the composition of expenditure leads to a higher steady-state growth rate of the economy. Barro (1990) also points out that the composition of government expenditure is decisive in the economic growth process depending on its composition by function, with spending on productive sectors tending to influence growth positively and non-productive spending tending to increase social welfare.

A recent trend is visible in the literature not only linking the composition of government spending to economic growth but also exploring possible perceived reasons for such allocations by fiscal policy makers. For example, Mauro (1998) investigates the effects of corruption on the composition of government spending in a number of less developed countries. He finds that corruption has a negative, significant and robust relationship with spending on education. He further notes

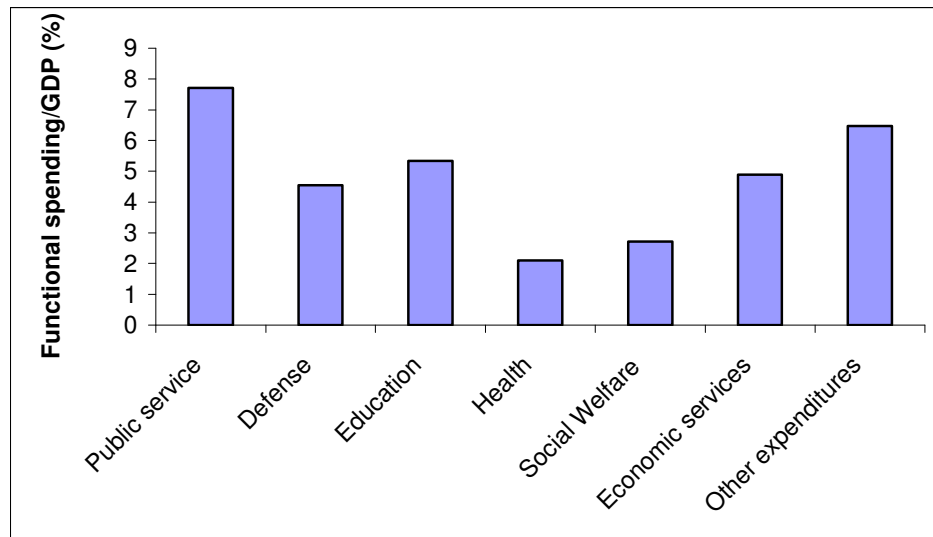
that corrupt governments find it easier to collect bribes on some spending items than on others and therefore tilt the budget in favour of those sectors where high kick-backs can be made. Other studies focus on the role of political and civil liberties on the internal allocation of public budgets, for example, the work by Nader (1994), which finds that among the functional categories of spending, the budget shares of health and social security are positively related to levels of political liberty while the opposite is true for the defence budget.

Both globally and in Africa in particular, the structure of budgets has changed significantly in the past three decades. Davoodi et al, (2001) argues that this is because of major developments in the international arena, notably the end of the Cold War, which led to a major shift away from defence spending towards other productive and social spending that positively affect economic growth and the welfare of people. Other studies, such as Mahdavi (2004), argue that the change in structure of government spending that has been witnessed in the past three decades is caused by changes in the debt burden. Higher debt burdens force government spending away from the productive and social sectors to debt service payments.

1.3 Review of public spending and public debt performance in Africa

This section reviews the key features of public budgets and public debt in Africa during the period 1995-2004. It is divided into three parts. Part 1.3.1 focuses on the distribution of public budgets and part 1.3.2 focuses on trends in public budget components and public debt and selected governance indicators.

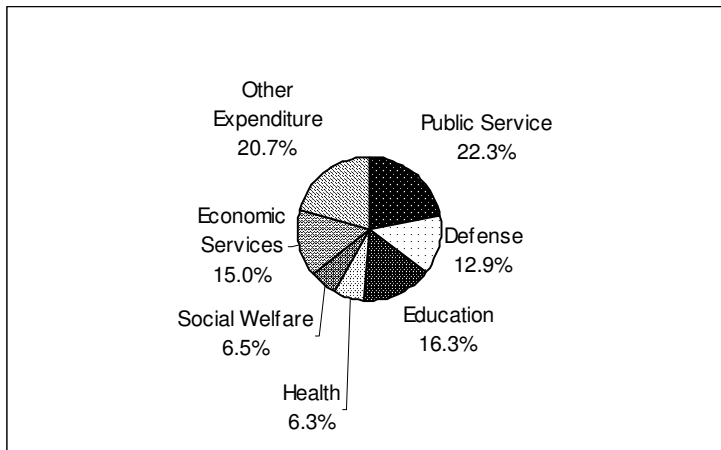
1.3.1 Distribution of public budgets



Source: www.imf.org/external/country/index.htm

Figure 1: Average distribution of public budget/GDP ratios in Africa: 1995-2004

Figure 1 shows the average distribution of the Gross Domestic Product (GDP) to various functional spending categories in public budgets in Africa during the period 1995-2004. The figure shows that the public service spending category accounts for the highest share of the GDP (7.7%), followed by the 'other' spending category (6.5%). Among the social sector spending categories, education accounts for the highest share of the GDP (5.3%), nearly double the share of the health and social welfare spending categories. The economic services spending category stands at 4.9% of the GDP, while defence spending amounts to 4.5%. It can be seen that the public budget allocation in Africa during this period was tilted towards public services, defence and education. The internal allocation of the public budget is shown in Figure 2.



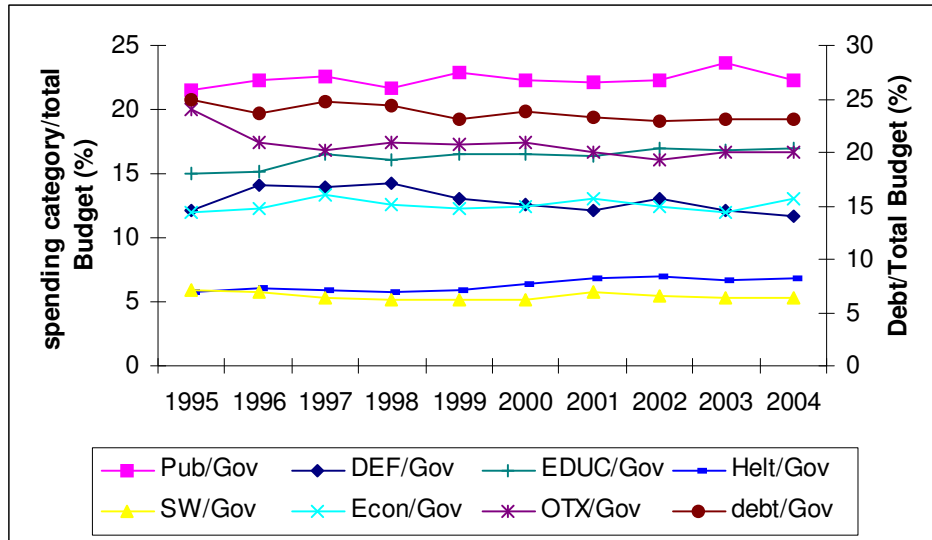
Source: www.imf.org/external/country/index.htm

Figure 2: Average distribution of public budget in Africa: 1995- 2004

Figure 2 shows the average distribution of the public budget components for the period 1995-2004. During this period, general public services spending dominated all other spending categories, accounting for 22.3% of total public spending. It is followed closely by ‘other’ spending that accounts for 20.7%. Defence spending remains high during this period, accounting for 12.9% of the budget. This is not surprising given the situation in the continent in the 1990s when countries such as Angola, Rwanda, Ethiopia and Eritrea spent massively on defence in order to restore stability. Africa devoted few resources to the economic services sector (15.0%), which probably explains the dismal growth performance posted in the continent during this period. Spending in the social sectors shows that education had the highest allocation (16.3%), probably because governments in the continent recognised the role of education in development and therefore devoted more public resources to the sector. The education sector’s high allocation may also be attributed to the fact that the provision of education in many countries in Africa is in the hands of the public sector, which requires a sizeable budget. The health budget accounted for only 6.3%, probably because of higher private sector participation in health care. Social welfare spending accounted for 6.5% of the public budget.

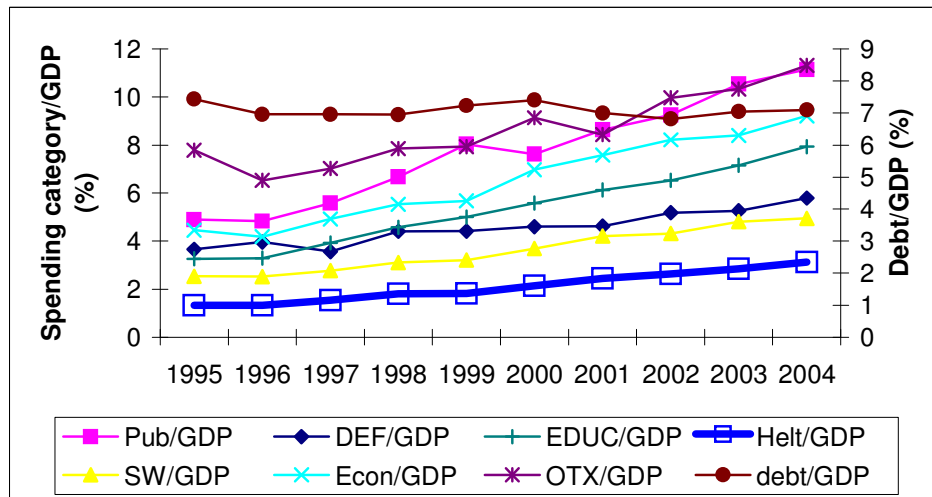
1.3.2 Trends in the public budget and public debt¹

This section presents the trends of the various components of the public budget and public debt during the period 1995-2004.



Source: www.imf.org/external/country/index.htm

Figure 3: Trends in the ratio of specific budget votes and debt (% of public budget): 1995- 2004



Source: www.imf.org/external/country/index.htm

Figure 4: Trends in ratio of specific budget votes and debt (as % of GDP): 1995- 2004

¹ The Debt/Total Budget (%); and Debt/GDP (%), shown in Figures 3 and 4 are divided by 10.

Figure 3 shows the trends of public budget votes and public debt expressed as shares of the total public budget. From the figure it can be seen that Public Services spending (Pub/Gov) remained one of the prominent spending items during the entire period. It stood at 21.6% in 1995, rising marginally to 22.3% by 2004. The overall growth was modest at 0.4%, with the highest expansion being during 2003 (6.0%) and the lowest expansion during 2004 (-5.7%). Public services spending as a share of the GDP (Pub/GDP) and as shown in Figure 4, averaged 7.7% and more than doubled during the period 1995-2004. These findings are not surprising in Africa during this period because the bulk of Public Services spending includes most of the spending related to civil servants' wages and salaries. In addition, during this period the Public Sector Reform (PSR) programme introduced by the World Bank was in place and the funds provided by the Bank for this programme were, in most countries, included in the public services spending category. This is a likely explanation why the public services spending category had the highest allocation during this period.

The average defence spending as a share of the total public budget (DEF/Gov) remained high but declined over this period. It was highest in 1998 at 14.2% of the budget, however, it followed a declining trend and by 2004, it had reached its lowest point at 11.6% share of the budget. It declined by an average of -0.15% during this period. The greatest expansions were recorded in 1996 (15.6%) and 2002 (7.6%) while the greatest decline was posted in 1999 (-9.3%). Defence spending as a share of the GDP (DEF/GDP) averaged 4.5% and grew by 58.3% during this period. Although defence spending as a share of the total budget declined only marginally during this period, it is an indication of a fiscal discipline that recognised that defence spending was not productive and therefore that resources should be channelled away to sectors of the economy that spurred economic growth. The declining trend of defence spending in the public budgets may have been as a result of the Breton Woods institutions' prescriptions or as a result of relative peace in the respective countries that may then have occasioned a shift in the budget towards growth enhancing sectors.

The share of education spending (EDUC/Gov) in the total public budget enjoyed sustained growth during the period 1995-2004. In 1995, it accounted for 14.9%; however, by 2004 the share had increased to 17.0% of the total public budget. On average, education spending accounted for 16.3% and 5.3% of the total public budget and the GDP, respectively. The average growth rate of education spending as a part of the total budget stood at 1.5% during the entire period, with the highest expansion recorded in 1997 (8.7%) and the lowest in 1998 (-2.9%). The sustained growth of the budget share of education spending may have been occasioned by the realisation that the sector plays a very important role in human capital accumulation and any cuts from other sectors such as defence may have been channelled to this sector to stimulate human capital accumulation.

The portion of health spending as a part of the total public budget (Helt/Gov) remained less than 10% but recorded sustained growth over the entire period. The share of health spending was highest in 2002 at 6.9% but it declined marginally to 6.7% in 2004. The lowest share of health spending was posted in 1995 (5.7%). In terms of growth, the sector grew by 2.1% during this period, with the lowest expansion recorded in 2003 (-3.4%) while the highest expansion was in 1996 (5.3%). Health spending as a share of the GDP (Helt/GDP) averaged 2.1%. During this period, the health spending budget share benefited at the expense of other sectors.

Social welfare spending as a share of the total public budget (SW/Gov) was on a declining trend during the entire period, except in 2001, when it increased by 10.5%. It may be noted that after 2001, although the share of social welfare in the public budget was declining, it showed signs of stabilising up to 2004. During the entire period, the share of social welfare spending averaged 6.5% and declined by -1.1%. On the other hand, social welfare as a share of the GDP (SW/GDP) averaged 2.7% and nearly doubled during this period. The declining share of social welfare spending in the budget is an area of concern as it is an

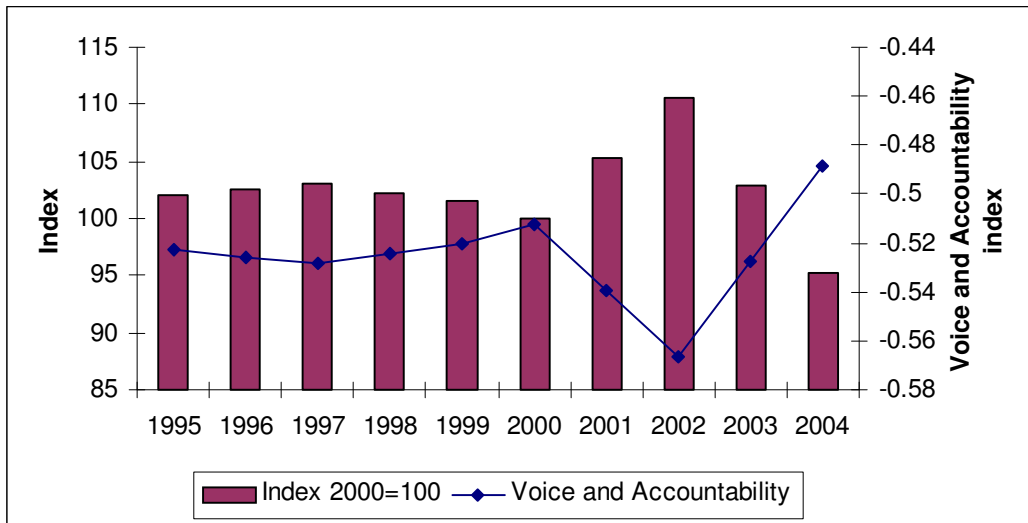
indication of the relatively low priority that governments give to social welfare programmes.

The proportion of economic services spending related to the total public budget (Econ/Gov) remained relatively stable during this period. It was highest in 1997 at 16.0% of the public budget. It followed a declining trend up to 1999, before rising to 15.6% in 2001. The lowest share was reported in 2003 (14.4%). It grew modestly by 1.1% with the highest growth posted in 2003 (9.3%). Economic services spending as a share of the GDP (Econ/GDP) averaged 4.9%.

The 'other' spending category remained very high. Over the entire period, it declined as a percentage of the public budget (OTX/Gov), but increased as a share of the GDP (OTX/GDP). The share of the total public debt as a part of the GDP (debt/GDP) averaged 70.9% and declined by 4.5% during this period. As a share of the total public spending (debt/Gov), the total public debt stood at an average of 236.8% and declined by 7.6%.

1.3.3 Review of governance indicators

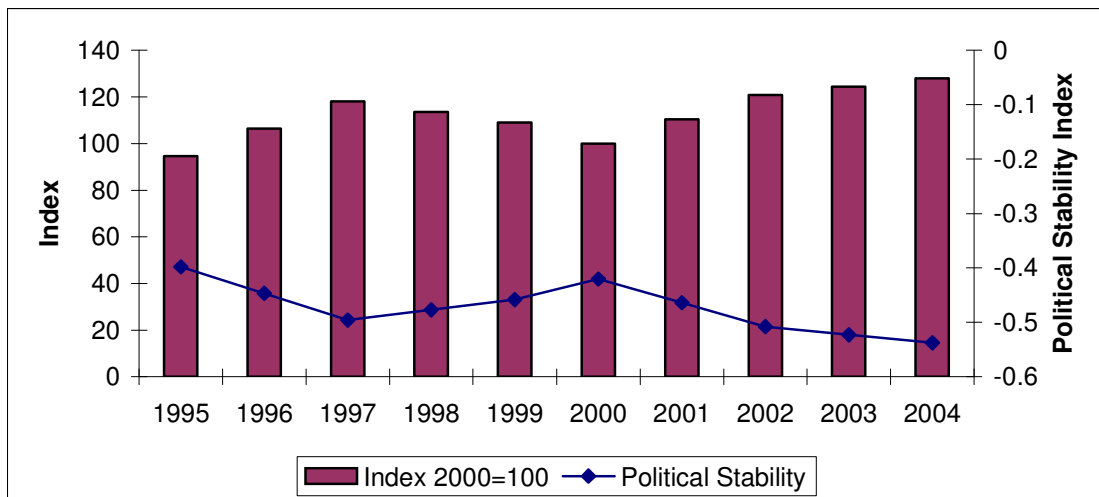
This sub-section seeks to present an analysis of the various measures of governance because, as argued in the literature reviewed, they play a very important role in determining the internal structure of public budgets. The measures used in this study are from the World Bank and are explained below.



Source: www.worldbank.org/wbi/governance/puts/govmatters+html

Figure 5: Trends in the voice and accountability index in Africa: 1995-2004

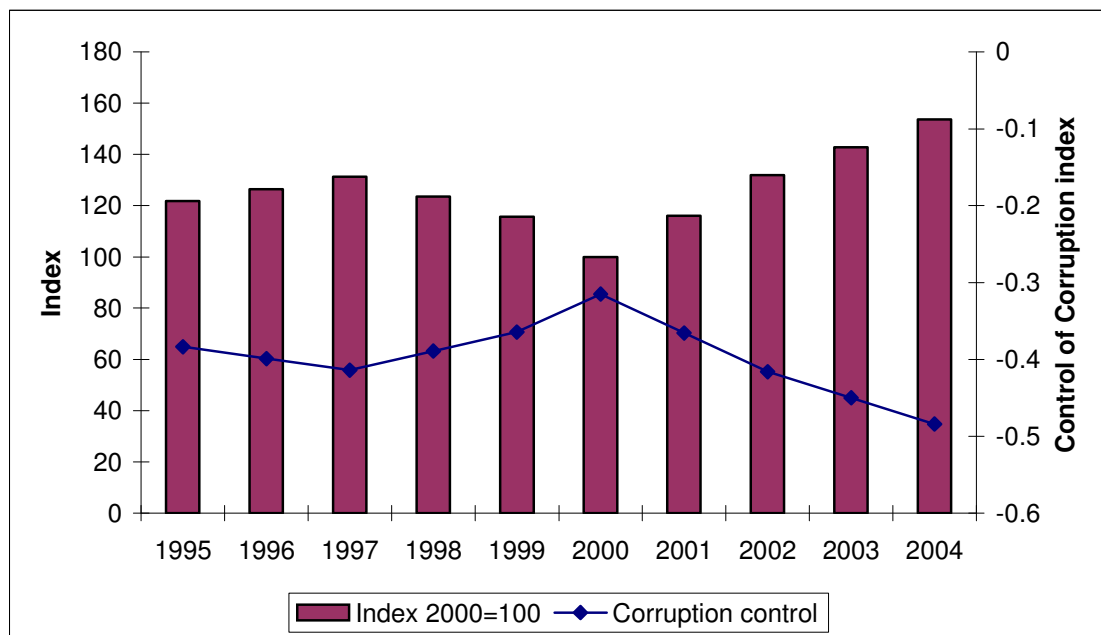
On average the voice and accountability index remained negative for the entire period 1995-2004, which suggests that countries on the continent were largely insensitive to calls for greater accountability from their citizens. From the figure it is evident that the voice and accountability index improved gradually from 1995 to 2000, it nose-dived to an all-time low in 2002 increasing again.



Source: www.worldbank.org/wbi/governance/puts/govmatters+html

Figure 6: Trend of political stability index in Africa: 1995- 2004

Political stability in Africa has traditionally been an area of concern and remained as such during the period 1995-2004. From Figure 6 it can be seen that, on average, political stability worsened among the countries in our sample. The index stood at -0.40 in 1995, it deteriorated, and by 2004 it had reached a low point of -0.50 . During this period the political stability index averaged -0.47 .



Source: www.worldbank.org/wbi/governance/puts/govmatters+html

Figure 7: Trends of the corruption control index in Africa: 1995- 2004

It is evident that, on average, the continent performed very poorly as the index remained negative during this period. The corruption control index showed a downward trend during the entire period except during 1997-2000, when it improved before plunging even further.

1.4 Objectives of the study

The broad objective of this study is to investigate the determinants of the spending behaviour of African governments. The specific objectives include:

1. To identify the factors that determine the structure of government spending.
2. To identify a framework that explains the structure of government spending.
3. To specify and estimate a model that explains the allocation of public budget.
4. To make policy recommendations on the basis of this model.

1.5 Research statement

The processes for determining how to raise, allocate and spend public resources constitute one of the foundations of government in the sense that the way public resources are used is a major determinant of the achievement of public policy objectives. In this regard a pool of literature exists that tries to link government spending priorities with growth (Barro 1990; Devarajan *et al.* 1996), including the determinants of the structure at national and local government levels (Mahdavi, 2004; Mendes & Sousa 2004; Takero 1999; Mauro 1998; Gramlich & Rubinifeld 1982; Bergstrom & Goodman 1973; Bocherding & Deacon, 1972). However, the role of governance, particularly that of corruption and political instability, in the internal allocation of the budget has not been extensively investigated in Africa where matters regarding corruption and political liberties are so critical, that in the worst cases donors have withdrawn their funding from various programmes.

Most of the available studies on government spending fall into three categories. Firstly, those studies that focus on the determinants of aggregate government spending and one component of that spending (Davoodi, *et al.* 2001). Secondly, those that study the various spending components in isolation, for example, the determinants of military spending, health spending and education spending. Although these studies use either time series analysis or panel analysis, they have, however, failed to address the fact that these components of the public budget cannot be analysed separately. And thirdly, a few studies have used

purely cross-section methods to address this problem (Mauro 1998; Nader 1994; Kwame & Gerdtham 1992). However, most of the studies, particularly the panel studies, are not focused exclusively on the African continent. Instead, they pick a few countries from Africa as a sub-sample, leading one to suggest that the findings and conclusions arrived at in these studies do not necessarily accurately reflect African circumstances.

In view of the above gaps in the existing literature, this study is unique in several respects. Firstly, it seeks to analyse the determinants of government spending in Africa in general and proceeds to categorise the countries into specific groups. This will ultimately assist in establishing whether or not the structure of expenditure in Africa is driven by those specific groupings. Secondly, the dependent variables in the functional classification² of government spending used in this study are the shares of total public budget and of the GDP. Many of the studies that have analysed government spending do so by using the spending category as a share of the GDP, however, as noted by Nader (1994), using the ratio of spending category to total spending is also important because fiscal policy makers are rarely concerned with the ratio of a specific spending category to the GDP when making fiscal decisions. Instead, they are sensitive to the relative share of each expenditure category to the total budget. By using this approach, the study's model is closer to the real policy making process.

1.6 Hypotheses of the study

In this study a number of hypotheses will be tested, however, emphasis will be placed on those that relate to corruption, political instability, civil liberties, public debt and the impact of IMF-supported adjustment programmes in the allocation of the public budget. The hypotheses to be tested are the following:

² A number of studies have given different definitions to functional classifications, for a summary of this see appendix A1.3.

1. An increase in the level of corruption would tilt the budget allocation towards sectors such as defence and general public services.
2. An increase in the level of political instability would occasion a shift in the budget allocation towards sectors that help to secure the government's political power.
3. An increase in political liberty leads to a shift in the budget towards those sectors favouring citizens' preferences, such as education, health and social security and services.
4. An increase in the public debt leads to a shift in the budget towards economic services.
5. The mere presence of IMF-supported programmes in a country plays an instrumental role in the distribution of the budget.

1.7 Scope of the study

This study seeks to analyse the factors that determine the allocation of the public budget in Africa over the period 1995-2004 for 28 countries in Africa for which data is available.

1.8 Conclusion

The review, in Section 1.2.3, of the budget allocations over the period 1995-2004, shows that the shares of public spending devoted to education, health and public services were on an upward trend during this time. Defence spending and 'other' spending remained high but declined during this period. The share of the public budget allocated to economic services remained significant but fluctuated from year to year. On average, general public services spending accounted for the highest share of the budget, while health and social welfare spending accounted for the lowest share. Governance indicators, namely the political stability, corruption control, and voice and accountability indices worsened during the period under investigation.

1.9 Outline of the dissertation

The rest of the dissertation is structured as follows: Chapter 2 discusses the theoretical and empirical literature that focuses on the determinants of the structure of the budget; Chapter 3 discusses the methodology, which encompasses the theoretical framework and the model to be estimated; Chapter 4 reports on the empirical results of the general public services spending category; Chapter 5 discusses the estimation results on defence spending; Chapter 6 reports on the empirical results of education spending. Chapter 7 discusses the empirical results of health spending; Chapter 8 discusses the empirical results of social welfare spending; Chapter 9 discusses the estimation results of economic services spending; Chapter 10 reports on the results for 'other' spending; Chapter 11 contains further econometric estimations performed within the systems panel econometrics framework; Chapter 12 discusses a proposed 'ideal budget' allocation in Africa; and Chapter 13 concludes with some policy recommendations.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter seeks to review both the theoretical and empirical literature with a view to revealing the theoretical underpinning of the public budget allocation and the empirical work that has been conducted in this part of public economics. The chapter has three sections. Section 2.2 discusses the theoretical literature that explains the allocation of the public budget. Section 2.3 discusses the empirical literature available on governance, strategic debt accumulation and the other determinants of the public budget. Finally, Section 2.4 offers an overview of the theoretical and empirical literature with a view to identifying the factors prominent in the literature that seek to explain the allocation of the public budget. These factors or variables are then discussed in subsequent chapters.

2.2 Theoretical literature review

This section discusses the theoretical literature that seeks to explain the allocation of the public budget. It addresses the theories that have been advanced, including those related to the allocation of the budget under direct and representative democracies and under benevolent dictatorships.

2.2.1 Public choice under different political systems

In democratic societies the choices of public spending allocation rests with the citizens. In exercising their franchise the citizens can act via direct democracy or representative democracy. Under direct democracy it is assumed those without representation vote directly on public choices. In this regard any choice of allocation of public spending rests with the citizens directly. In exercising their franchise under direct democracy, a number of methods are suggested, among others:

The Unanimity Approach: Formalisation of this method is due to Lindahl (1919-1958). Since then a number of economists have expanded on the concept, in most cases linking it to pareto optimality. Arrow (1951) describes pareto optimality as unanimity of individual preferences while Buchanan (1967) shows that unanimity is the counterpart of pareto optimality and goes on to treat pareto optimality and unanimity as one in his later work (Buchanan 2004). According to this method a decision on whether or not to provide a public good requires a unanimous vote, that is, for a public choice to be made there must be 100% support for the decision. The main strength of this approach is the fact that it takes community minorities into account and it leads to pareto optimal outcomes. The major limitation of this model is the lack of feasibility of the unanimity rules. The rules state that the level of public service provision should be agreed upon unanimously, this is not the case in practice. The other drawback is that it assumes that individuals vote sincerely, which is also not necessarily the case in real life situations. It may also take a long time to agree on the contribution of each member of the community and therefore this method can lead to delays in decisions regarding public goods provision. In view of these limitations, the majority voting approach should be considered.

The Majority Voting Approach: This method is fundamental in public choice literature. It proposes a voting arrangement for the provision of any public goods and that the provision of such public goods should be undertaken if one more than half of the citizens vote for it. However, the majority decision approach does not always yield clear-cut results and it is affected by the voting paradox, that is, multi-peaked preferences. In order to address the problem of multi-peaked preferences, the median voter theorem is used, which guarantees single peaked preferences. In this case, the outcome of majority voting reflects the preferences of a median voter.

The Logrolling Approach: This system allows people to trade votes and therefore to indicate how strongly they feel about various issues. It has the potential to reveal the intensity of preferences and to establish a stable equilibrium. The compromises that are embedded in this system are necessary for a democratic system to function. Although logrolling has been used for a long time in public choice, its earliest formalisation was by Tullock (1959), who argued that it leads to socially inefficient policies, especially when a smaller majority is required to pass a public policy. However, Buchanan and Tullock (1962), show that logrolling is socially efficient because it allows legislators to express their individual intensity of preferences over a public choice.

In reality, however, public choice decisions are exercised through representative democracy. Direct democracy suffers from the fact that it is a simplified version of government. Realistically, government elicits the citizens' preferences from them and uses these preferences in making decisions. In this case it is important to note that the governing is done by the people – politicians, bureaucrats, and others. This, therefore, requires that the behaviour of those people who govern must be examined. In a representative democracy, the main assumption is that the individuals who act as the representatives of the people seek not only to work for the advantage of the people who elected them, but also to optimise their own self-interests.

Bureaucrats play a very prominent role in a representative democracy. Although they are not elected, they provide valuable technical expertise and are responsible for the administration of government. In this regard, they may exercise their self-interests by tilting the budget in a manner that suits these interests, that is, towards those sectors of the economy where it is easy to obtain bribes. The self-interests of politicians and bureaucrats both, therefore, influence public budget outcomes.

The other form of government discussed in this study is that of a benevolent dictatorship. Under a dictatorship, individual preferences are not given consideration. The dictator makes the public expenditure decisions that he/she feels are best for the citizens.

2.2.2 Public choice and strategic debt accumulation

It is assumed that in all three political systems described above, the government finances its budget through taxation. However, in an event where the government seeks to finance the budget through other sources of revenue, the situation changes to that of borrowing to finance its expenditures and budget allocations. The models of strategic debt accumulation are credited to Tabellini and Alesina (1990) whose paper considers an economy in which policymakers with different preferences alternate in office as a result of elections. In these circumstances government debt is used strategically by each policymaker to influence the choices of his/her successors. If different policymakers disagree about the desired composition of government spending between two public goods, the economy exhibits a deficits bias, that is, the debt accumulation is higher than it would have been had a social planner made the spending decisions. The larger the degree of polarisation between alternative governments, the larger the equilibrium level of debt and the less likely that the current government will be re-elected.

Beetsma and Bovenberg (2002) sought to investigate the extent to which the European Monetary Union's (EMU) monetary policy impacts on national fiscal policies. This was done by investigating the interaction between centralised monetary policy and decentralised fiscal policy in a monetary union which has heterogeneous countries. They found that discretionary monetary policy suffers from failure to commit. Moreover, heterogeneous decentralised fiscal policy makers impose externalities on each other through the influence of their debt policies on common monetary policy. These imperfections, they found, could be

alleviated by adopting shock-contingent inflation targets and shock-contingent debt targets.

Beetsma and Bovenberg (1999), sought to analyse debt accumulation in a monetary union. They found that if discretionary monetary policy gives rise to an inflation bias, monetary unification boosts the accumulation of public debt. The additional debt accumulation, they found, harms welfare if governments are sufficiently myopic. In the case of myopic governments, debt ceilings play a useful role in avoiding excessive debt accumulation in a monetary union and allowing a conservative, independent central bank to focus on price stability. With supply shocks, monetary unification results in excessive variability of public debt. A debt target that constrains stabilisation policy helps to prevent this.

2.3 Empirical literature

This section reports on empirical literature that seeks to explain the determinants of the public budget. It is divided into two parts. The first part addresses literature that explains the allocation of the public budget as determined by governance. The second part discusses alternative literature on the determinants of the allocation of public budget.

2.3.1 Literature on governance and public budget allocation

Recently, Delavallade (2006) studied the effects of corruption on the distribution of public spending in 64 developing countries. Using the three-stage least squares method and found that public corruption distorts the structure of public spending by reducing the portion of social expenditures (education, health and social protection) and increasing the funds dedicated to public services and order, fuel and energy, culture, and defence. It was also found that compared to corruption, civil and political rights play a stronger role in affecting defence spending.

Aidt, Jayasri and Loukoianova (2006) sought to investigate the relationship between public spending and the spread of democracy in Western Europe during the period 1830-1938. They used a data set of 12 countries. Their main findings were firstly, that a gradual lifting of socio-economic restrictions on the voting franchise contributed to the growth of government spending mainly by increasing spending on infrastructure and internal security; secondly, that female suffrage had a weak positive effect on government spending through spending on health, education and welfare; and thirdly, that the change in the voting system from majority to proportional rule which occurred in 10 of the countries in the sample did not contribute to growth in government spending and curtailed spending on health, education and welfare.

In order to test whether or not corruption is related to military expenditure, Sanjeev, De Mello and Sharan (2001) used data from four different sources for up to 120 countries covering the period 1985-98. This was done using panel regression techniques. The results from this study suggest that corruption is indeed associated with higher military expenditure as a share of both the GDP and total government expenditure, as well as with arms procurement in relation to the GDP and government spending. This led them to conclude that defence spending can be considered when determining governance indicators. There is strong evidence that cuts in military spending can enhance growth, which therefore suggests that higher corruption can reduce growth through higher military spending.

Kimenyi and Mbaku (1995) studied the relationship between rents, military elites and political democracy using a panel approach. Their main finding was that in autocratic regimes the military elite is in a position to extract rents, because without the support of the military, governments are in general not able to survive. They confirmed that, for developing countries, a negative relationship exists between monetary transfers to the military and the degree of democracy.

Kwame and Gerdtham (1992) sought to investigate the determinants of health care expenditure in Africa using a cross section approach. The paper investigated the relationship between certain socio-economic and demographic factors and per capita health care expenditure in Africa. Their main findings were that the GNP per capita, the percentage of births attended by health staff and the foreign aid received per capita together accounted for 78.3% of the variance in health care expenditure. In addition, per capita GNP was the most significant factor explaining differences in health care expenditure. Contrary to the findings of studies based on data from the Organisation for Economic Co-operation and Development (OECD), this study found that income elasticity is close to unity, while aid was consistently significant and positive in all the models that they estimated. Other variables, including the crude birth rate and the percentage of the population less than 15 years of age were not, however, significant.

Among less developed countries where the level of transparency and accountability is low, the structure of public spending has been guided by rent seeking behaviour. Mauro (1998) found that the predatory behaviour of corrupt politicians and other senior public servants distorts the composition of government expenditure in such a manner that those sectors where they are more likely to obtain rent with less risk of being noticed are heavily financed at the expense of other sectors. For example, he found that corrupt governments tend to support expenditure on the procurement of defence equipment and up-to-date technology where the probability of negative political consequences is low. Health, education and welfare grants expenditure is neglected as the public can detect malpractice more easily in these sectors.

Tanzi and Davoodi (2000) investigated the channels through which corruption affects growth such as the impact of corruption on enterprises, on the allocation of talent, and on investment and the allocation of public finance. Their main findings were as follows: firstly, and in contrast with Mauro's findings, higher levels of corruption tend to be associated with higher levels of public investment

when the government revenue-GDP ratio is included as an explanatory variable; secondly, more corruption tends to reduce government revenue, and, thus also reduces the resources available to finance spending, including public investment; thirdly, high levels of corruption tend to reduce expenditure for operation and maintenance; and finally, higher levels of corruption tend to be associated with poor quality of infrastructure, thus reducing the economic value of the existing infrastructure and its contribution to output. The study shows that corruption can indeed have powerful effects on both the quantity and the quality of public investment. The paper discusses in detail the factors that make public investment a particularly vulnerable area to corruption and especially to political corruption.

Nader (1994) sought to investigate the effect of political liberty on budgetary policy using a cross-section approach in a sample of 67 countries. His major findings were that among the functional categories of expenditures, the budget shares of health and social security are positively related to the level of political liberty while the opposite is true for the defence budget. Furthermore, he used an economic classification of public expenditures and found that capital expenditure and current expenditure on goods and services are negatively associated with political liberty. He also found that the relative size of government expenditure to GDP varies systematically with the index of political liberty but in a non-linear manner.

Tait and Heller (1982) identified six categories of factors that might influence the allocation of government expenditures. While pointing to technological, sociological and environmental factors in explaining cross-country differences, they, however, ignored political institutions. In another study Heller and Diamond (1990) acknowledged the central role of political institutions but failed to use them in their analysis.

2.3.2 Literature on public debt accumulation and public budget allocation

In a bid to investigate the shifts in the composition of government spending in response to external debt, Mahdavi (2004) examined the effects of external public debt on the composition of public spending in a sample of 47 developing countries for the period 1972-2001. The study specified a system of equations that described government expenditure by economic function. The relative spending shares of six economic categories in several different samples were processed using several estimation methods. The study found support for the adverse effect of the debt burden on African sub-samples where the debt burden was relatively high. It was further found that among the components of current expenditure, the increased debt burden shifted the odds against non-wage goods, services, subsidies and transfers, while leaving the share of the politically sensitive category 'wages and salaries', unscathed in most cases.

As external debt servicing increases, developing countries are forced to re-evaluate programmes in an effort to curtail government spending. Lonney (1986) attempted to examine this issue by looking at the character of the sector adjustments that took place in the main functional areas of the Argentinean government expenditure from 1961-1982. He found that, in general, social services, particularly education and health along with public administration, bore the brunt of the government's rising debt service problem. The social sectors suffered further due to regime changes, with military regimes tending to cut back allocations to the social sectors even more severely than normal debt service constraints would have warranted.

Axel (2006) investigated the role of globalisation on taxes and social spending among OECD countries during the period 1970-2000. This study used an unbalanced panel because some countries did not have data for the entire period. The study used panel estimation techniques and found that there were significant fixed country and period effects in all his model specifications. The

main findings of the study were that globalisation was found to be negative but insignificant in the estimations involving total government expenditure and social spending. It was also found that a high social dependence ratio could be associated with low levels of government expenditure (both total and social expenditure), the relationship was not, however, significant. Finally it was found that the unemployment rate and the size of government employment were positive and significant in explaining both total government spending and social spending.

The role of foreign aid on fiscal behaviour in development was investigated by Ouattara (2006) using a panel approach over the period 1980-2000. The study used a fixed effects model and found that public investment was positively related to aid flows. In addition, aid flows were found to exert a positive impact on government developmental expenditures and a negative impact on non-developmental expenditures. It was further found that aid flows did not discourage revenue collection and that borrowing was complimentary to aid flows.

Countries that are involved in excessive fiscal expansion tend to find it increasingly difficult to finance their budgets using only the available tax revenues. They therefore resort to borrowing either from the domestic and/or foreign market. This suggests that as public debt increases, a steady shift will be observed away from expenditures on economic and social sectors towards interest payments. As suggested by Krugman (1988), in his debt-overhang hypothesis, an increase in the debt burden beyond a certain limit may generate a disincentive for governments to carry out macroeconomic reforms and increase public investment.

2.3.3 Literature on other determinants of public budget allocation

Jonakin and Stephens (1999) investigated the impact of adjustment and stabilisation policies on infrastructure spending in Central America during the 1980s and 1990s. They noted that the countries in Central America during this period experienced protracted fiscal crises and debt repayment problems which resulted in the implementation of structural adjustment agreements. In their study they compared the periods before and during the crises in the region. They found that the shares of government spending on human and capital formation, particularly infrastructure, dropped precipitously during the adjustment period. At the same time, the shares devoted to defence and subsidy categories as well as those for interest payments on external debt generally registered notable gains.

Davoodi *et al.* (2001) sought to investigate the relationship that exists between military spending, the peace dividend, and fiscal stabilisation for 130 countries for the 1972-1994. This was conducted using a panel estimation procedure. The study adopted a public choice approach for analysing the relationship between military spending and overall government spending. The main focus of the paper was to dissect the causes of the peace dividend, which they found could be divided into global, regional and national factors. The study found that the easing of international and regional tensions and the existence of IMF-supported adjustment programmes were systematically related to lower military spending and a higher non-military spending in total government outlays. It was also found that the easing of international and regional tensions since the end of the Cold war and the existence of IMF-supported adjustments programmes accounted for 66%, 26%, and 11% of the decline in military spending, respectively. It was further found that fiscal adjustment related to IMF-supported programmes led to a larger cut in military spending.

Much of the empirical literature involving the majority voting system stems from the work of Bocherding and Deacon (1972) who sought to estimate the demand

for services of non-federal governments. This study was based on cross-sectional data for the year 1962 for 44 states in the United States of America. Their study involved estimating eight specific services: local education, higher education, highways, health and hospitals, police, fire, sewers and sanitation, and parks and recreation. Each of these services was estimated separately as a function of the average personal income of the state residents, the state population, the degree of urbanisation and the state land areas. They found that the estimated income elasticity was in accord with that reported in other studies. They also found price elasticity to be significantly negative; this was not in support of the literature of that time that had frequently found the price elasticity for higher education and highways to be positive but uniformly insignificant.

Bergstrom and Goodman (1973) utilised a framework similar to that of Bocherding and Deacon (1972) to analyse the private demand for public goods. They used a cross-section approach, obtaining demographic data from the 1960 population census and expenditure data from the 1962 census of governments. Their estimated income elasticity was positive and significant, while the price elasticity was significant and negative.

To test the relevance of the Tiebout and median-voter hypothesis, Gramlich and Rubinifeld (1982) utilised a micro approach to estimate the demand for public services. They used cross-sectional data which included 2,001 households in the state of Michigan, randomly sampled immediately after Michigan's 1978 tax-limitation vote. It was found that while income and price elasticity were similar to those obtained from aggregate data, positive income elasticity appeared to arise because public services were distributed in a pro-rich manner. It was also found that a relatively small variance occurred in spending demands among urban and suburban communities in metropolitan areas with substantial public service variety. This suggested that the Tiebout mechanism worked.

Takero (1999) sought to investigate the relevance of the median voter to Japanese prefectural finance. He tested this hypothesis by estimating the demand functions of local public goods in each prefecture. His finding was that the median voter hypothesis was supported in prefectural finances, and that voter preferences affected the outcome of gubernatorial elections, that is, a governor's re-election probability. He concluded that when considering the centralised prefectural government system in Japan, these results indicated that central government management of prefectural expenditures via inter-regional grants ultimately reflected jurisdictional median voter preferences.

2.4 Summary and conclusions

The literature reviewed falls into two categories. The first category is that of literature that focuses on the role of governance indicators, such as corruption, rule of law, political stability and rights in the internal structure of the budget. Most of the available literature in this category tends to focus on individual components of the budget, particularly, defence, health, education and infrastructure spending. From these studies it is concluded that the various indicators of governance have a fundamental role to play in the internal structure of the budget. It was found that corruption tilts the budget in favour of defence and infrastructure and against all other spending categories and that political instability causes a budget shift in favour of defence spending.

The second category of literature focuses on those studies that analyse the allocation of the budget. These studies identify demographic factors such as population size, dependency ratio and density as fundamental in explaining the allocation of spending. Also identified are the size of government and the level of development of the country. Many of these studies also emphasise the role of IMF-supported programmes in the allocation of the budget and argue that in countries where the IMF lends support, budgets are structured in favour of the social sectors and against defence spending.

The literature review has identified the variables that are fundamental in the estimation of a model that can be used to explain the allocation of government spending across various functional components.