The determinants of the structure of government expenditure in Africa

by

Nyamongo Esman Morekwa

Submitted in partial fulfilment of the requirements for
PhD (Economics)
in the
Faculty of Economic and Management Sciences
at the
University of Pretoria

Pretoria

July 2007
Acknowledgements

This study has been accomplished on account of the contributions of several people and institutions that I hereby wish to thank. Firstly, I would like to thank Almighty God for countless blessings. Secondly, I would like to acknowledge in a special way the contribution of my study leader, Professor Niek J. Schoeman, for his invaluable guidance throughout this study. Thirdly, I am grateful to all academic staff and students of the Department of Economics whom I consulted in one way or another during my academic tour at the University of Pretoria. Fourthly, my special thanks go to Eui-Gak Hwang, Professor Emeritus of Economics, University of Korea, for his helpful comments on an earlier version of this dissertation.

I would also like to thank my parents, Mr Nyamongo Mokua and Mrs Agnes Nyamongo for their contribution both materially and otherwise during my entire academic life. My special thanks also go to my brothers and sisters whose words of encouragement and support have seen me through all the echelons of the education system. My wife, Alice Mokeira, and my three boys, Magati, Bironga and Nyamongo Junior cannot go without mention for their understanding and endurance in dealing with a husband and father, respectively who has been absent from home for a long time in pursuit of education.

Lastly, I would like to thank the following institutions for their financial assistance: first, the Ministry of Finance/Treasury, Republic of Kenya, for the initial financial support that enabled me to proceed to the University of Pretoria for doctoral studies; second, the Department of Economics of the University of Pretoria for the financial assistance offered to me at various stages of my studies at the University; and last but not least, JC Poynton Trust and more specifically, Professor J. Titlestad and Dr R. Poynton, for providing me with a bursary that contributed in a special way towards the completion of this study.

Nyamongo Esman Morekwa
SUMMARY

The determinants of the structure of government expenditure in Africa

by

Nyamongo Esman Morekwa

Supervisor      Prof. Niek J. Schoeman
Department      Economics
Degree      PhD (In Economics)

This study investigates the determinants of the structure of public budgets in Africa using a panel econometrics approach. Data for 28 countries was collected covering the period 1995-2004. The determinants of the spending behaviour of these governments are analysed with the specific objectives to: identify the factors that determine the structure of government spending; identify a framework that explains the structure of government spending; specify and estimate a model that explains the allocation of the public budget and finally, to make policy recommendations on the basis of the findings.

A number of hypotheses are tested, namely: an increase in the level of corruption would tilt the budget allocation towards sectors such as defence and general public services; an increase in the level of political instability would cause a shift in the budget allocation to sectors that seek to secure government’s political power; an increase in political liberty results in a shift in the budget towards those sectors favouring citizens’ preferences, such as education, health and social security and services; an increase in the public debt leads to a shift in the budget towards expenditure on economic services; and the mere presence of
International Monetary Fund (IMF)-supported programmes in a country plays an instrumental role in the distribution of the budget.

The main findings are the following:

The proportions of the public budget devoted to education, health and public services had been on an upward trend during the period 1995-2004 while that of defence and ‘other’ remained high but declined. The share of the public budget allocated to economic services remained large but showed substantial volatility. On average, general public service expenditures account for the largest share of the public budget, while health and social welfare services account for the lowest share.

The results show that corruption is associated with high levels of general public services and ‘other spending while it is negatively correlated to education, health and social welfare spending. Evidence to support the notion that high levels of corruption are associated with large budget allocations to the economic services category seems to be ambiguous. Also, the findings on the role of corruption in twisting the budget towards higher levels of expenditure on defence are not conclusive which contradicts the findings of similar studies.

Furthermore, countries that suffer from political instability tend to allocate a larger slice of their budgets to the general public services and defence spending categories while countries that are politically stable tend to allocate more of their budgets to the education and social welfare sectors. However, there is no strong evidence to support the role of political instability in health spending. It is found that in those countries where human rights are acknowledged and the political process is more transparent, a larger share of the budget is allocated to social welfare spending.
The role of IMF programmes in budget allocation reveals that countries that have implemented IMF programmes tend to allocate less of their budgets to defence and ‘other’ spending while increasing the budget allocation to education, health, social welfare and economic services. Furthermore, the budget allocation to general public services is shown to be affected by changes in the IMF programmes. Also, irrespective of the corruption status of a country, the IMF programmes tend to cause spending to move away from defence. In the case of education spending, it is found that countries that are exposed to IMF programmes tend to allocate a larger share of their budgets to education than those countries without such programmes.

Budget priorities of neighbouring countries with regard to defence expenditure positively affect a home country’s defence budget allocation. This is also true with regard to the number of military personnel per capita of the population which is found to correlate positively with the share of defence expenditure in the budget. Lastly, the coefficient of public debt is unambiguously positive in the economic services and health expenditure categories which may suggest that countries that have high levels of public debt tend to allocate more resources to these sectors.

Based on these findings an ‘ideal’ distribution of a budget based on the economically most successful countries in Africa is proposed. According to this framework it is ideal, in the African context, to allocate not more than 21 per cent of the public budget to general public services; 8 per cent to defence and 18 per cent to ‘other’ spending. A minimum of 18 per cent should be allocated to education; 10 per cent to health; 11 per cent to social welfare and 18 per cent to economic services.

For policy purposes the following are noted: Firstly, for an ‘ideal’ budget allocation to be achieved in the African context, measures must be put in place to control the level of corruption. These may include the following:
i. Anti-corruption legislation: Countries that have legislated anti-corruption laws should ensure that they enforce these laws.

ii. Public officers’ ethics law: Countries that have not legislated laws relating to a code of ethics for public officials are recommended to do so. Such laws would include requiring public officers to declare their wealth and to disclose any interests that they may have in private investments.

iii. Anti-corruption institutions: Existing institutions such as parliamentary committees on public finance and investment should be strengthened and if non-existent should be established and entrenched in the constitutions of the respective countries.

Secondly, to ensure optimal public choice that reflects the preferences of the citizens, the government should ensure that political stability is a high priority on its development agenda. Governments should establish early warning systems to enable them to address instability before it degenerates into civil unrest and war. Measures to deal with any instability should be put into place, for example the parties involved in a conflict should be brought together in order that they may enter into a dialogue. At the continental level, peace efforts under the African Union (AU) should be encouraged to ensure that problems on the continent can be resolved by its leaders without recourse to outside support.

Thirdly, accountability is also important in the internal allocation of the budget. Governments must be informed about collective and individual needs, listen to the voice of the public and embrace transparency and true accountability to its citizens. This can be achieved through:

i. Government openness with regard to its fiscal policies.

ii. The establishment of information and communication offices where anyone seeking information regarding public matters can get assistance.
iii. The retraining of the police and other security personnel on matters related to public relations since, in Africa, many of the human rights abuses are committed by the police.
**TABLE OF CONTENTS**

Acknowledgements ........................................................................................................ ii

SUMMARY ................................................................................................................ iii

1.1 Introduction ........................................................................................................... 1

1.2 Background .......................................................................................................... 1

1.3 Review of public spending and public debt performance in Africa ....... 2

1.3.1 Distribution of public budgets ........................................................................ 3

1.3.2 Trends in the public budget and public debt .................................................. 5

1.3.3 Review of governance indicators ...................................................................... 8

1.4 Objectives of the study ........................................................................................ 10

1.5 Research statement ............................................................................................. 11

1.6 Hypotheses of the study ...................................................................................... 12

1.7 Scope of the study ................................................................................................ 13

1.8 Conclusion ............................................................................................................ 13

1.9 Outline of the dissertation .................................................................................... 14

CHAPTER TWO: LITERATURE REVIEW ................................................................. 15

2.1 Introduction .......................................................................................................... 15

2.2 Theoretical literature review ............................................................................... 15

2.2.1 Public choice under different political systems ............................................. 15

2.2.2 Public choice and strategic debt accumulation ............................................. 18

2.3 Empirical literature ............................................................................................. 19

2.3.1 Literature on governance and public budget allocation ............................. 19

2.3.2 Literature on public debt accumulation and public budget allocation ........ 23

2.3.3 Literature on other determinants of public budget allocation ............ 25

2.4 Summary and conclusions ................................................................................... 27

CHAPTER THREE: METHODOLOGY ................................................................. 29

3.1 Introduction ........................................................................................................... 29

3.2 Analytical Framework ......................................................................................... 29

3.3 The Model ............................................................................................................ 35
Chapter Thirteen: Conclusion and Policy Recommendations

13.1 Introduction
13.2 Conclusions
13.3 Policy recommendations
13.3 Limitations of the study
13.4 Suggestions for future studies

References
Appendices
**LIST OF TABLES**

Table 1: Descriptive statistics of the ratio of dependent variables as ratios of the total public budget ................................................................. 49

Table 2: Description statistics of dependent variables as ratios of GDP ........ 50

Table 3: Estimation results of general public services spending: Full sample. 59

Table 4: Estimation results of general public services spending as a ratio of total spending ................................................................................. 60

Table 5: Estimation results of general public services spending as a ratio of GDP .................................................................................................. 61

Table 6: Estimation results of defence spending ........................................ 74

Table 7: Estimation results of defence spending as a ratio of the total public budget ....................................................................................... 75

Table 8: Estimation results of defence spending as a ratio of GDP .......... 76

Table 9: Estimation results of education spending: full sample ............... 89

Table 10: Estimation results of education spending as a ratio of the total public budget ................................................................. 90

Table 11: Estimation results of education spending as a ratio of the GDP .... 91

Table 12: Estimation results of health spending: full sample ..................... 104

Table 13: Estimation results of health spending as a ratio of the total public budget ......................................................................................... 105

Table 14: Estimation results of health spending as share of the GDP ....... 106

Table 15: Estimation results of social welfare spending: full sample ............ 117

Table 16: Estimation results of social welfare spending as a ratio of the total public budget ................................................................................. 118

Table 17: Estimation results of social welfare spending as a ratio of the GDP .. ................................................................. 119

Table 18: Estimation results of economic services spending: full sample ... 129

Table 19: Estimation results of economic services spending as a proportion of the total public budget ................................................................. 130
Table 20: Estimation results of economic services spending as a proportion of the GDP...............................................................................................131
Table 21: Estimation results of ‘other’ spending: full sample.......................142
Table 22: Estimation results of ‘other’ spending as share of the total public budget ........................................................................................................143
Table 23: Estimation results of ‘other’ spending as share of the GDP........144
Table 24: Panel system estimation results................................................147
Table 25: Panel system estimation results................................................149
Table 26: Panel system estimation results................................................151
LIST OF FIGURES

Figure 1: Average distribution of public budget/GDP ratios in Africa: 1995-2004 .3
Figure 2: Average distribution of public budget in Africa: 1995-2004 ..................4
Figure 3: Trends in the ratio of specific budget votes and debt (% of public budget): 1995-2004 .................................................................................................................5
Figure 4: Trends in ratio of specific budget votes and debt (as % of GDP): 1995-2004 ........................................................................................................................................5
Figure 5: Trends in the voice and accountability index in Africa: 1995-2004 ........9
Figure 6: Trend of political stability index in Africa: 1995-2004 .........................9
Figure 7: Trends of the corruption control index in Africa: 1995-2004 ..............10
Figure 8: Corruption control index and general public services spending ..........52
Figure 9: Political stability index and general public services spending ..............53
Figure 10: Voice and accountability index and general public services spending ........................................................................................................................................................................54
Figure 11: Corruption control index and general public services spending as a ratio of the total budget: 'most corrupt' sub-sample ......................................................55
Figure 12: Corruption and general public services spending as a ratio of GDP: 'most corrupt' sub-sample ......................................................................................................................56
Figure 13: Corruption control index and general public services spending as a ratio of the total budget: 'less corrupt' sub-sample ..............................................................57
Figure 14: Corruption control index and general public services spending as a ratio of the GDP: 'less corrupt' sub-sample ..............................................................57
Figure 15: Corruption control index and defence spending ..................................67
Figure 16: Political stability index and defence spending .....................................68
Figure 17: Voice and accountability index and defence spending ......................69
Figure 18: Corruption control index and defence spending as a ratio of the total budget: 'most corrupt' sub-sample ..............................................................70
Figure 19: Corruption control index and defence spending as a ratio of the GDP: 'most corrupt' sub-sample ..............................................................70
Figure 20: Corruption control index and defence spending as a ratio of the total budget: 'less corrupt' sub-sample ..............................................................71
Figure 21: Corruption control index and defence spending as a ratio of the GDP: 'less corrupt' sub-sample ...............................................................71
Figure 22: Corruption control index and education spending as a ratio of the total budget .........................................................................................83
Figure 23: Political stability index and education spending as a ratio of the total budget .........................................................................................84
Figure 24: Voice and accountability index and education spending as a ratio of the total budget .................................................................85
Figure 25: Corruption control index and education spending as a ratio of the total budget: 'most corrupt' sub-sample ............................................86
Figure 26: Corruption control index and education spending as a ratio of the total budget: 'most corrupt' sub-sample ............................................86
Figure 27: Corruption control index and education spending as a ratio of the total budget: 'less corrupt' sub-sample .............................................87
Figure 28: Corruption control index and education spending as a ratio of the GDP: 'less corrupt' sub-sample .........................................................87
Figure 29: Corruption control index and health spending as a ratio of the total budget ........................................................................97
Figure 30: Political stability index and health spending as a ratio of the total budget ........................................................................98
Figure 31: Voice and accountability index and health spending as a ratio of the total budget .................................................................99
Figure 32: Corruption control index and health spending as a ratio of the total budget: 'most corrupt' sub-sample .............................................100
Figure 33: Corruption control index and health spending as a ratio of the GDP: 'most corrupt' sub-sample .........................................................100
Figure 34: Corruption control index and health spending as a ratio of the total budget: 'less corrupt' sub-sample .............................................101
Figure 35: Corruption control index and health spending as a ratio of the GDP: 'less corrupt' sub-sample .........................................................101
Figure 36: Corruption control index and social welfare spending as a ratio of the total budget .......................................................................................................111
Figure 37: Political stability index and social welfare spending as a ratio of the total budget .......................................................................................................112
Figure 38: Voice and accountability index and social welfare spending as a ratio of the total budget .......................................................................................................113
Figure 39: Corruption control index and social welfare spending as a ratio of the total budget: 'most corrupt' sub-sample ............................................................113
Figure 40: Corruption control index and social welfare spending as a ratio of the GDP: 'most corrupt' sub-sample ........................................................................114
Figure 41: Corruption control index and social welfare spending as a ratio of the total budget: 'less corrupt' sub-sample ..............................................................114
Figure 42: Corruption control index and social welfare spending as a ratio of the GDP: 'less corrupt' sub-sample ........................................................................115
Figure 43: Corruption control index and economic services spending as a ratio of the total budget .............................................................................................123
Figure 44: Political stability index and economic services spending as a ratio of the total budget .............................................................................................124
Figure 45: Voice and accountability index and economic services spending as a ratio of the total budget .............................................................................................125
Figure 46: Corruption control index and economic services spending as a ratio of the total budget: 'most corrupt' sub-sample ..........................................................125
Figure 47: Corruption control index and economic services spending as a ratio of the GDP: 'most corrupt' sub-sample ..............................................................126
Figure 48: Corruption control index and economic services spending as a ratio of the total budget: 'less corrupt' sub-sample ........................................................................126
Figure 49: Corruption control index and economic services spending as a ratio of the GDP: 'less corrupt' sub-sample ........................................................................127
Figure 50: Corruption control index and 'other' spending as a ratio of the total budget....................................................................................................................136
Figure 51: Political stability index and 'other' spending as a share of the total budget...............................................................................................................137
Figure 52: Voice and accountability index and 'other' spending as a share of the total budget .......................................................................................................138
Figure 53: Corruption control index and 'other' spending as a share of the total budget: 'most corrupt' sub-sample ...............................................................138
Figure 54: Corruption control index and 'other' spending as a share of the GDP: 'most corrupt' sub-sample .................................................................................139
Figure 55: Corruption control index and 'other' spending as a ratio of the total budget: 'less corrupt' sub-sample ...........................................................................140
Figure 56: Corruption control index and 'other' spending as a ratio of the GDP: 'less corrupt' sub-sample ..................................................................................140
Figure 57: Ideal public budget structure in Africa based on the corruption control criteria ..................................................................................................................155
Figure 58: Ideal public budget allocation in Africa based on political stability criteria ...............................................................................................................156
Figure 59: Ideal public budget allocation in Africa based on the voice and accountability criteria .................................................................157
Figure 60: Ideal public budget allocation in Africa based on the comprehensive criteria..............................................................................................158