

**GOVERNMENT EXPENDITURE GROWTH IN SOUTH AFRICA,
1960 - 1993**

BY

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**A DISSERTATION SUBMITTED TO THE DEPARTMENT OF
ECONOMICS, UNIVERSITY OF NATAL,
PIETERMARITABURG, IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE MASTER OF
SOCIAL SCIENCE DEGREE.**

**UNIVERSITY OF NATAL
DEPARTMENT OF ECONOMICS
PIETERMARITZBURG**

JANUARY 1998

DEDICATION

To

Mom, Dad, Bongani, Siwe, Sabelo, Mbali, Ayanda, Mduduzi

Acknowledgements

A word of thanks to all the people who made it possible for me to write this document. I thank Professor Newman Kusi, my supervisor, for guidance, patience, and the interest with which he helped me throughout. Thank you for helping me build my future, for giving me the necessary skills to carry on in this field. I also extend my appreciation to Dr Richard Simson who helped me through difficult times. All the people who provided me with support and encouragement, my colleagues Mike Kafe, Lungisa Fuzile, Jessica Schroenn, Betty Kaseke and my friend Boni Khuzwayo. Siphon Mthethwa, thank you for your support and brotherhood. To Sibusiso Shezi, thank you for believing in me.

I will not have done justice if I do not thank my family for the love, support and understanding they gave me. I thank God for loving me so much to give me the family that I have.

Dear God, you never fail those who trust in You. I praise You.

DECLARATION

With the exception of quotations specifically acknowledged in the text, this dissertation is entirely my own work, and has not been submitted in any other University.



N.R. MTHETHWA

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Abstract

This study is about government expenditure in South Africa for the 1960 - 1993 period. It seeks to investigate (i) the sources of growth of government expenditure, (ii) the relative contribution of the major functional categories (i.e. general administration, economic services, social services, and defence expenditure) to the aggregate government expenditure, and (iii) to estimate the future growth in government expenditure given the rate of growth of the economy.

The analytical approach adopted in the study is based on the framework developed by Abedian and Standish (1984). In this framework, the contribution of each expenditure category to total expenditure is obtained as the ratio of the product of the percentage change in an expenditure category and the share of that expenditure category in the total to the percentage change in total expenditure. To investigate the sources of the expenditure growth, a model relating expenditure to its determinants is specified and estimated to obtain the expenditure elasticities, which are then used to determine the impact of the changes in each determinant on the expenditure in question. Finally, using the rate of growth of domestic income (GDP), and the long-run income elasticity of demand for government services, the

maximum permissible growth of expenditure is determined. With these estimates, the expected shortfall between the desired and actual expenditure is then determined.

Our results show that the income elasticities of all the functional expenditures and the total non-defence expenditure were found to be greater than unity, suggesting the presence of the Wagner's law in South Africa during the 1960 - 1993 period. This implies that government expenditure increased more than the proportionate increase in income.

Expenditure on administration was the largest contributor to the level of government spending. However, in 1990, social services became the largest contributor and remained at that high level until 1993.

The higher the growth in the economy, the larger will be growth in government expenditure. A significantly high growth in the economy was accompanied by a significantly high growth in government expenditure. When the growth in the economy turned to negative, the growth in government expenditure also became negative.

Chapter One

Introduction

1.1 Motivation

Since 1960, there has been a continuous increase in the role of the South African government in economic activity, leading to a sharp increase in the share of domestic resources used up by the public sector. Whether one looks at government expenditure in levels or as a share of gross domestic expenditure the picture is the same, that is, government spending has been increasing. In 1960, government expenditure amounted to R0.6 billion. By 1993, the figure had increased to R133.2 billion. As a percentage of GDP, government expenditure increased from 12% in 1960 to 35% in 1993, indicating that over a third of all domestic expenditure was undertaken by the government in 1993 compared to just over one-tenth in 1960 (Central Statistical Services of South Africa, 1960; 1994).

A major factor behind the growth of government spending during the 1960-1993 period has been the increased sophistication of the economy. According to Meyer (1985), the more sophisticated an economy becomes, the greater the demand for public sector goods and services. As governments respond to the increased demand for public goods and services, their expenditures increase correspondingly.

The increased demand for public goods and services arises for several reasons. First, once the basic necessities of life have been met, the community may show an increasing preference for more state protection, health services, education, pensions, cultural facilities, etc. as wealth increases. Second, technological advancement that accompanies economic development leads to a more rapid growth in efficiency and productivity in the private sector (particularly in primary and secondary production) than in the public sector, leading to a relatively greater increase in expenditure by the public sector than by the private sector (Browne, 1975).

Until 1975, the fiscal budget of South Africa had consisted of two separate accounts, the Revenue Account and the Loan Account. The idea behind separating these two accounts was that, current expenditures were to be financed from current revenue and capital expenditure from borrowing. Although this distinction was abolished in 1976 and a single State Revenue account was established, there was still a strong feeling in the public sector that current expenditure should be financed from current revenue and capital expenditure from borrowing. This principle was strictly adhered to until 1981 when the government started financing some current expenditure from borrowing (Black and Dollery, 1989).

Government expenditure policy from the late 1960s to the mid-1970s was influenced largely by the publications of two official reports. First, was the 1964 Schumann Commission of Enquiry Report on the "Financial Relations between the Central Government and the Provinces". Although the recommendations contained in the Report were not implemented fully by the government it set the basis upon which

a government white paper setting out the needs of the provinces was written. This government white paper set out the: (a) various services or functions that the provinces had to provide; (b) the extent of the central government's funding of the provinces, given the different sources from which the provinces' incomes are derived; and (c) the provincial deficit, which forms the basis of the subsidy from the central government. Second, was the Franzsen Commission Reports on the "Fiscal and Monetary Policy in South Africa". Three reports were submitted by the Commission and published in 1969 and 1970. Many of the recommendations contained in the Franzsen Reports were accepted and implemented by the government. Four main recommendations were made on the expenditure side of the government finances. These include: (i) the institution of Cabinet Finance Committee to control public spending; (ii) planning of public expenditures five years in advance; (iii) introduction of a system of programme budgeting; and (iv) abolition of the distinction between the Revenue and Loan Accounts.

The most significant aspect of public expenditure in the 1980s was the tendency on the part of fiscal authorities to exceed budget estimates. Actual expenditures consistently exceeded budgeted amounts in each fiscal year of 1981/82 to 1986/87, and in some years by as much as 5.6 % (Calitz, 1988). Although fiscal discipline was preached in all the budgets, it was never practised. There was also a tendency to finance current expenditure out of loans (a practise unknown in the 1960s and 1970s) because the government current revenues had begun to fall short of current expenditures.

Another interesting aspect of the government spending during the 1980s was that more money was spent on consumption than on investment, with a significant portion of the increases in consumption spending consisting of increases in the wages and salaries of public sector employees and increased interest payments on public debt (Black and Dollery 1989).

Increases in government spending are not a new phenomenon in South Africa. However, the size and the rate of growth of the government spending in recent years and the accompanied fiscal deficits have raised serious concern to many in the country. An analysis of these expenditures, detailing out the sources of growth and the speed with which the government adjusts its expenditure patterns in response to the increases in demand for public goods and services will provide an invaluable support to the policy makers in their attempt to restructure the expenditures of the public sector.

1.2 Objectives

This study is about government expenditure in South Africa during the 1960-1993 period. The specific objectives are to:

- (i) evaluate the relative contribution of each of the functional expenditures to the total government expenditure;
- (ii) to investigate the sources of growth of the government expenditure; and
- (iii) to estimate the future growth in the government expenditure, given some idea of the rate of growth of gross domestic product (GDP).

1.3 Methodology

The analytical approach adopted in this study is based on the framework developed by Abedian and Standish (1984). In this framework, total government expenditure is divided into four main functional categories, namely, general administration, economic services, social services, and defence. The contribution of each expenditure category to total expenditure is obtained by the use of an equation that relates the product of the percentage change in an expenditure category and the share of that expenditure category in total expenditure over a given period to the percentage change in total expenditure in the same period. To investigate the sources of the expenditure growth, a model relating expenditure to its determinants is specified and estimated to obtain the expenditure elasticities. The elasticities are then used to determine the impact and significance of the changes in the determinants on the changes in expenditure. Finally, using the rate of growth of the expenditure, rate of growth of domestic income, and the long-run income elasticity of demand for government services, the maximum permissible growth of each expenditure category is determined. With these estimates the expected shortfall between the desired and actual expenditure is then analysed.

1.4 Organisation of the Thesis

The study is organised into six chapters. Following the introduction in chapter

one, chapter two examines the theoretical aspects of government expenditure growth. Chapter three investigates the historical trends in government expenditure in South Africa, while chapter four discusses the specification of the government expenditure model for the empirical analysis. Chapter five presents the results of the estimated expenditure equations, their interpretations, and discussions on them. Chapter six finally concludes the study with some policy recommendations.

Chapter Two

Theoretical Aspects of Public Expenditure Growth

2.1 The Nature of Public Expenditure

Public expenditure reflects the policy choices of governments. Governments decide which goods and services to provide and the quantity and quality in which they will be produced. Public expenditure then represents the costs of carrying out these policies. This definition allows one to make two distinctions. First, there are the costs of supplying goods and services through the public sector budget. This is the direct spending by the government. Second, there are the private sector costs that come about as a result of some government rules and regulations. For example, the passing of a law requiring mining companies to install certain minimum safety measures will result in the mining companies incurring some expenditure to comply with the law. This is the indirect spending by the government (Brown and Jackson, 1990).

Public expenditure can also be classified into two broad categories. The first category consists of purchases of current goods, services, and capital goods. This is often referred to as exhaustive public expenditures. Exhaustive public expenditures are, thus, purchases of inputs by the public sector. They are the claims by the public sector on the resources of the economy. The second category of public expenditure consists of transfers. Transfers include expenditures on pensions, subsidies, interest costs on public debt, and unemployment benefits. Transfer payments do not represent

claims on the society's resources by the public sector. Instead, transfers are a form of redistribution of resources between individuals in society, with the resources flowing through the public sector as an intermediary (Brown and Jackson, 1990).

2.2 Models of Public Expenditure Growth

Various theories have been put forward to explain the growth in public expenditure over time. These theories can broadly be grouped into three. These are the development theories, demand-side theories, and the supply-side theories. In what follows, we review each one of these theories.

(a) Development models

The development models of public expenditure growth are based on the works of Musgrave (1969; 1974) and Rostow (1971). According to these models, in the early stages of economic growth and development, public sector investment as a proportion of total domestic investment is found to be high. The public sector is seen to provide the social and economic infrastructures, such as roads, transportation systems, power installations, sanitation systems, law and order, health and education, and investment in human capital. These infrastructural overheads are necessary to propel the economy for take-off into the maturity stage of development. Since many of the items of the infrastructural overheads have large external benefits, or require large capital outlays, with the returns spread over a longer period of time, they do not lend themselves readily to private provision. Hence, in the early stages of economic

development the public sector's share in the provision of capital goods are relatively large. In the maturity stage, the public sector continues to supply investment goods, which, at this stage, are complementary to private investment. But once the economy reaches the maturity stage, the mix of public expenditures will shift from expenditures on infrastructure to increasing expenditure on education, health and welfare services. In the stage of high mass consumption, spending on income maintenance programmes and programmes designed to redistribute welfare will grow significantly relative to other items of public expenditure and also relative to GNP. The increase in transfer expenditure at this stage, however, depends on whether the income inequality decreases or increases as per capita income rises.

Two additional factors that Musgrave (1984) argues could lead to public expenditure growth are technological and demographic changes. According to him, technological change may increase or decrease the relative importance of goods whose benefits are largely external, and which must therefore be provided by the government. For example, changes in weapons technology that lead to an equipment-intensive military may increase public expenditure. Demographic changes, such as changes in the rate of population growth, or age distribution, may be reflected in the changes in expenditures on education, health, and welfare services. In addition, high population mobility would lead to the growth of new cities and urbanisation, resulting in increased demands for municipal facilities and other public services.

The development models of public expenditure growth have been subjected to a number of criticisms. The critics, generally, see these models as nothing more than

sweeping approaches to the development process. According to them, the development models are generalizations gleaned from the examination of a large number of different case histories of developing countries (see Browne and Jackson, 1990).

(b) Demand-side models

The most frequently cited of the demand side models of public expenditure growth is the “Wagner's law”. The Wagner's law states that: "as per capita income of a country rises, the public sector will grow in relative importance" (Wagner, 1877). That is, as income rises, the demand for goods and services supplied by the government increases more than in proportion, mainly because of the technological requirements of industrialization and urbanization that accompany the income growth (Tridimas, 1985; Lindauer and Velenchik, 1992). This argument is more appealing for merit goods than for transfers, therefore the law is interpreted in terms of the size of the income elasticity for public goods.

Wagner offers three justifications for the growth of the public sector as income increases. First, there are certain needs, such as administration, protection, law and order, education, redistribution of income, and capital expenditure that accompany the process of industrialization and which must be provided for by the government. Second, a considerable expansion of cultural and welfare expenditures, especially with respect to education and the redistribution of income, takes place as income expands. Education and culture are areas where public production are more efficient than

private ones. Hence, the public sector would grow as these basic needs are satisfied and the consumption pattern shifts in this direction (Tarschys, 1975). Wagner argues that these (cultural and welfare) expenditures are expenditures on superior goods or luxuries. As such, the income elasticity of demand for them will be greater than unity. Thus, more of them will be demanded as incomes rise. Finally, Wagner argues that the inevitable changes in technology and the increasing scale of investment required in many activities in an industrializing country would create an increasing number of private monopolies. The effect of the actions of these monopolies will eventually have to be offset, or the monopolies themselves taken over by the state in the interest of economic efficiency. In addition, some projects, such as railroad network, are so large in scale that only the state can afford to provide them. Increases in expenditure on such overhead capital and on public services required to meet the personnel needs of such investments may exceed the growth of income, making the income elasticity of public spending to exceed unity.

Even though Wagner's law may help illuminate some aspects of past reality, the law cannot predict what will happen in the future because it lacks in predictive powers. Furthermore, Wagner's law sees increases in expenditure as a function of certain needs or requirements such as technological changes and monopolization. Such a theory however, is not capable of explaining marked temporal and spatial differences in the character of expenditure development that do not fit the preconceived scheme.

Bird (1971), identifies three conditions under which one may expect the Wagner's law to operate. First, is a situation where per capita income is rising. Second, where there are technological and institutional changes of a particular sort. Third, where there is democratization of the polity, in the sense of wider political participation. These three conditions suggest that Wagner's law is explicitly framed to refer only to countries in which income rises as a result of industrialization.

According to Peacock and Wiseman (1961), the neglect of the effect of social upheavals in the Wagner's law is a serious shortcoming. To them war, for example, is one of the greatest facts of life in the twentieth century, so any theory of public sector growth that ignores wars and their associated expenditures leaves out a very important factor.

According to Seeber and Dockel (1978), the law is based on Wagner's normative assumptions about the nature of the state and its behaviour. The hypothesis, therefore, represents an opinion on what ought to happen as an economy becomes industrialized. Further, the empirical content of the law is also doubtful since it is not clear that the role of the state should necessarily increase through its takeover of private monopolies if they exist, nor is it clear that certain goods and services provided by the government are luxuries.

(c) Supply-side models

Among the supply-side theories of public expenditure growth are the Niskanen's bureaucratic hypotheses, Baumols' differential productivity model, and

Peacock and Wiseman's hypothesis.

(i) The bureaucratic hypothesis

The bureaucratic hypothesis of public expenditure growth is based on the writings of Niskanen (1968; 1971). Niskanen postulates that bureaucrats seek to maximize the size of their bureaux, i.e. they act as utility maximizers. Employing a managerial utility function approach, Niskanen explains that the factors in a bureaucrat's utility function include his salary, the size of the staff working under him and their salaries, his public reputation, his customary extra privileges, power, and status. Since many of these factors are directly related to the size of the budget, it follows that bureaucrats who are utility maximizers are also budget maximizers.

Bohm (1987) has criticised Niskanen's approach on the ground that not all areas of economic policy are readily adaptable to the self interested behaviour of bureaucrats. Furthermore, it is not all the bureaucrats that behave in the manner that Niskanen postulates in his hypothesis. According to Cullis and Jones (1992), the bureaucratic hypothesis is rather long on theory than on empirical evidence, although they agree that empirical evidence is not easy to discern. They argue that there are as many good and bad bureaucrats as there are doctors, scientists, etc. Also that there is the question of the media, which in democracies, have more powers and therefore may act as strong watchdogs on bureaux that are blatantly inefficient.

(ii) Baumol's differential productivity model

In his model, Baumol (1967) divides the economy into two sectors, which he labels as progressive and non-progressive sectors. The progressive sector is characterized by cumulative increases in productivity per man-hour, arising from economies of scale and technological change. In the non-progressive sector, labour productivity advances at a slower rate than that experienced in the progressive sector. In the progressive sector labour is primarily an instrument, an incidental requisite for the attainment of final product, whereas in the non-progressive sector labour is an end product itself. This means that in the progressive sector, capital can be substituted for labour without affecting the nature of the product. In the non-progressive sector, however, since labour services are themselves part of the product that is being consumed, a reduction of the labour content will change the product that is being produced. If improvements in labour productivity are matched by equal increases in the hourly wage rates, then unit costs in the progressive sector will remain constant overtime. To prevent labour moving from the non-progressive to the progressive sector in search of higher hourly wage rates, the non-progressive sector would have to match the hourly wage rate increases obtained in the progressive sector. Since productivity increases in the non-progressive sector is less than that in the progressive sector, unit costs in the non-progressive sector will rise. This means that in the next period the opportunity cost of the non-progressive sector's output relative to that in the progressive sector will increase.

Baumol's model provides a possible explanation of public expenditure growth.

If the public sector is one in which productivity increases are less than those in other sectors of the economy, and if wages of public sector employees move in line with wages in other sectors of the economy, then *ceteris paribus*, public expenditure will rise. In other words, it will cost the public sector more just to stand still.

A number of observations follow from Baumol's model. First, if the ratio of public sector output to private sector output is to remain constant then labour resources must be transferred from the private to the public sector. Second, it follows that public sector exhaustive expenditure of which a large portion is spent on wages and salaries will rise faster than private sector expenditure (Brown and Jackson 1990).

(iii) Peacock and Wiseman's displacement hypothesis

Another supply-oriented approach to government expenditure growth is provided by the Peacock and Wiseman hypothesis.

Peacock and Wiseman examine the possibility that there are permanent influences affecting government expenditure at all times and in all societies. These permanent influences, they argue, may generate public expenditure growth in developing societies irrespective of their political and social characteristics.

To provide an explanation of the time pattern of growth in government expenditure, Peacock and Wiseman begin with the concept of the nature and behaviour of governments. They see taxation as setting a constraint on government expenditures. As the economy and thus incomes grow tax revenue (at constant tax

rates) rises, thereby enabling public expenditure to grow in line with gross national product (GNP). In normal times public expenditure shows a gradual upward trend. During periods of social upheaval, this gradual upward trend in public expenditure is disturbed. The periods of social upheaval coincide with war, famine, or some large-scale social disaster, which requires a rapid increase in public expenditure. In order to finance the increase in public expenditures the government would be forced to raise taxation levels. The rise in taxation levels will be acceptable to the electorate during periods of crisis, thereby permitting public expenditure to be displaced upwards. This is what Peacock and Wiseman refer to as the “displacement effect”, a process reflecting an upward shift in the trend line of public expenditure. Following the period of the crisis, however, public expenditure does not fall back to its original level. In particular, the social disturbances might have imposed new and continuing obligations upon the government. Thus the government may be obliged by the effects of the disturbance to assume new functions, making it difficult to concentrate on the previous functions only. Changes in social and political ideas and institutions as such may condition the evolution of the functions of government, and may also affect the nature and significance of public expenditure on such social upheavals.

Another effect that Peacock and Wiseman thought may affect the level of government spending is the “inspection effect”. This arises from the voters’ keener awareness of social problems during periods of upheaval. The government, therefore, expands its scope of services to address these social problems, and because the electorates’ perception of tolerable levels of taxation does not return to its former level

the government is able to finance these higher levels of expenditure originating in the expanded scope of government and debt charges.

Cullis and Jones (1992) have questioned Peacock and Wiseman's argument that after social upheavals government expenditures will remain at higher levels than the pre-upheaval levels. Brown and Jackson (1990), show that there are at least three possibilities. To them, public expenditures in the post war period can return to their original growth path, or there can be an increase in post war public spending, or the trend experienced during the war can continue into the post war period. According to Tarschys (1975), Peacock and Wiseman's hypothesis belongs to the ideological cognitive level of explanation of public expenditure growth¹. Peltzman (1980) sees Peacock and Wiseman's explanation as nothing more than a historical mode of analysis, i.e. specific historical events are seen as the primary causes of the growth of government.

2.3 Evaluation of Expenditure Growth Models

The discussion above has shown that different models exist, each tending to emphasise different factors as causing growth in public spending. Factors such as the specific needs of the citizens of a country as determined by cultural, ethnic, religious, and socio-economic behaviours; the stage of the country's development; the political process as well as budgetary procedures; and the efficiency of the public sector in

¹ The ideological-cognitive level focus on changes in knowledge, beliefs, and desires shifts in the consumer

providing services, are emphasised. In reality, however, the observed pattern of government expenditure behaviour is a result of a systematic interaction of mutually interdependent economic, social, cultural and political factors.

An early attempt at providing an integrated approach to the understanding of the relationship between the different influences was provided by Breton (1974), who put forward a highly generalised single equation model of public expenditure growth. In this model, Breton argues that the factors that influence public expenditure growth include aggregate income; tax prices of alternative government policies; relative bargaining power of politicians and bureaucrats; costs of political participation relative to the disutility of imposed government policies; degree to which individuals remember when the government ignored their preferences; and the opposition to government policies.

Breton's model encompasses many of the elements of the public choice theory. Unfortunately, however, most of his variables cannot be measured quantitatively. Even if they could be measured, a number of complex interactions between them would require the model to be modified extensively to enhance its empirical application.

Jackson (1973), set out an integrative micro-economic model of public expenditure growth, which was later expanded upon by Brown and Jackson (1990). First, the model sets out the forces that generate demand for publicly provided goods and services. Second, the model examines the influences on the supply of public

demand is a case in point

services. The interaction of the demand for and supply of public services determines the levels of publicly provided services, via the public budget.

In the model, the growth of public expenditure can be explained in terms of a number of factors. These include:

- (i) changes in the demand for public goods and services, which itself is influenced amongst others by relative prices of private sector goods, incomes, tax rates, and population changes;
- (ii) changes in the set of production activities and/or mix of inputs used in the production process. These inputs may include the nature of the service environment and population changes;
- (iii) changes in the quality of public sector output; and
- (iv) changes in input prices.

A major drawback of Brown and Jackson's model is that, while it illustrates the complexities of the public expenditure process, it is predominantly demand-driven. Brown and Jackson, however, explain that it is possible to widen the scope of the model to incorporate some of the supply-side determinants.

2.4 Empirical Evidence

(a) Developed Countries

According to Bird (1971), the experiences of countries such as Canada (1933-1965), Germany (1872-1958), Sweden (1913-1958), Japan (1890-1960), Norway and the United States of America, show that the Wagner's law holds in aggregate terms.

Further, he observed that the most rapid expenditure increases have generally been in the social services. On the other hand, studies by Musgrave (1969), Wagner and Weber (1977), Mann (1980), and Ram (1987), do not confirm the Wagner's law. Gandhi (1971) postulates that, it is the imprecision of the law that renders its empirical applications difficult. He points out that the imprecision of the law has led to the arrival of five different conclusions, using the hypothesis in cross-sectional studies. First, that the elasticity of public expenditure with respect to GNP is greater than unity. Second, that the elasticity of government consumption expenditure with respect to national income is greater than unity. Third, the elasticity of public expenditures with respect to GNP per capita is greater than unity. Fourth, the elasticity of public expenditure as a share of GNP with respect to GNP per capita is more than unity. Finally, the elasticity of public expenditure per capita is greater than unity.

Goode (1984) reviews the results of studies conducted on thirteen industrial countries over the period 1950-1977. He found that the income elasticities of government expenditures (measured as the percent increase in government expenditures divided by the percent increase in GDP, both in constant prices) range between 1.4 and 2.7.

Ram (1986) examines the relationship between growth in per capita income and growth in government spending. He used real government consumption as a measure of government size. He finds that there is a positive relationship between growth in government and overall economic growth. He concludes that both the externality (i.e. direct government spending such as expenditure on education and

infrastructure, and private sector expenditure that come about as a result of meeting government regulations) and differential productivity effects (i.e. the relative productivity of factors employed in the public as opposed to the private sector) are positive, so productivity in the government sector appears to be higher than in the private sector, at least in his 1960s sub-sample.

In his work on American government activity in the first half of the twentieth century, Fabricant (1952), mapped interstate differences in public expenditures. He found that the government's expansion was a concomitant of economic growth, and that most variance between states could be explained by variations in income, urbanisation, and population density. Income was by far the most important variable in his study, although urbanisation gave a better explanation of expenditure surge in such areas as fire protection, sanitation, and social welfare. Brazer (1959) made a similar comparison of United States city expenditures and found density, median family income, and intergovernmental revenue to be the most important explanatory variables.

(b) Developing Countries

The causal relationship between income level and government expenditure is not so clear in developing countries. A study by Lall (1969) covering forty six developing nations found no significant relationship between GNP per capita and total government expenditures on several functional sub-categories of government expenditures. Enweze (1973) found that thirteen out of fifteen developing countries in

his research had positive income elasticities for most of the principal functional categories and for total expenditure.

Goffman and Mahar (1971) examine the public expenditure behaviour of several smaller Caribbean nations: Haiti, the Dominican Republic, Costa Rica, Panama, Honduras, and Guyana. The primary purpose of the study was to identify and isolate the basic factors that have influenced the level of aggregate public spending in these nations. The study also sought to measure the effects upon absolute expenditure growth of factors such as income, prices, and population. Their results show that over-time, the data supports the Wagner's law. That is, as per capita income in a country increases, government spending as a proportion of aggregate output also increases, i.e., the income elasticity of public spending tended to exceed unity. Findings for the Dominican Republic indicate that, on average, a 1% increase in income was accompanied by a 4% increase in government expenditure. On the other hand, a 1% increase in income in Panama showed a less than 1% expenditure increase, and in the former British Guiana expenditures, on average, declined as income rose. Based on these findings Goffman and Mahar concluded that since the variations in income within and among the nations are so great, it is doubtful whether the data support an oversimplified Wagner-type income-expenditure relationship.

Frederick Pryor conducted a study in 1968 that compared the development of public expenditure in a sample of market economies in centralised economies. The economic system variable was found to have played a significant role in accounting for variations in expenditures on education, research, non-military external security, and

possibly internal security, but not for defence, health, and welfare. Spending on internal security, foreign aid, and research and development appeared to be related to per capita income, but not spending on military purposes, education, and health (Pryor 1968).

A study by Tait and Heller (1982) covering central government expenditure of ninety countries, including nearly all the industrial countries and a large number of less developed countries, related expenditure in functional and economic categories to variables thought likely to influence them. Their study was successful in explaining the expenditure ratio for social security and welfare. Their results show that per capita income, percentage of the population over the age of 65, and the share of the labour force employed in industry, were all positive and statistically significant. Their health expenditure ratio was related positively to the percentage of the population over the age of 65 and negatively to the population per hospital bed, suggesting that countries with few hospital beds in relation to their population avoid spending for hospitals and do not substitute other health expenditures. The ratio of educational expenditure to GDP was less well-planned. For low income countries, this variable was associated strongly and positively with per capita income and also with the enrolment ratio in secondary schools. The percentage of population under the age of 15 had no significant influence on the ratio. Expenditure on roads and other forms of transportation and on communications were found to be positively related to the rate of growth of the urban population and negatively related to both the share of manufacturing and the share of agriculture in GDP. The expenditure ratio for housing

and community amenities was positively related to per capita income in low-income countries but not in high-income countries. The ratio of government wage and salary payments to GDP was positively related to the educational expenditure ratio, reflecting the importance of teachers' salaries. Spending on economic services in the fields of mining and manufacturing was also associated with relatively high expenditure for wages and salaries.

Landau's (1986) study on sixty five countries relates growth in per capita income to several sets of independent variables. These include measures of international economic conditions, human and physical capital, structure of production, historical and political factors, resources, population, geoclimatic factors, and three-year lagged averages of the share of government spending in GDP, (disaggregated into education, defence and transfer payments, other government consumption, and government investment). He also includes measures of government revenue and proxies for the level of regulation. He finds that general government consumption has a negative and significant influence on growth, whereas the influence of spending on education is positive but insignificant. He also finds that the influence of military expenditure (net of the effect of taxation to finance it), is essentially zero, as is the effect of transfers.

(c) South Africa

The sources of growth in government expenditure have also been investigated for South Africa. Seeber and Dockel (1978) did a study of the functional classification

of government expenditure in South Africa for the 1948 - 1975 period. They estimated the relationship between government expenditure and several explanatory variables in a single equation model. Their results showed that the income and past expenditure variables, were the major determinants of the functional expenditure categories. The displacement effect variable was used in the model to test the degree of substitution that occurred between the different expenditure categories. No significant displacement effect was observed as was indicated by the positive coefficients attached to the displacement variable. All the government expenditure categories increased about simultaneously. The Wagner law was partially confirmed by the results, which showed income elasticities of greater than unity. High income elasticities were found, the most important being for central government (excluding defence and local authorities). On the basis of their results, it could be said that government expenditure can be expected to increase at a rate greater than the growth in income in South Africa.

Abedian and Standish (1984), examined the supply-side of government output as viewed through total government expenditure in South Africa for the period covering 1920 to 1982. They divided government expenditure into their functional categories. For the entire 1920-1982 period, their estimated income elasticities were significantly different from unity, supporting the Wagner's law. However, their estimates for the 1948-1982 sub-period were not significantly different from the critical value of unity, suggesting a rejection of Wagner's law during this period. Also, during the 1948-1982 period, the speed of adjustment was unusually low, which

seems to explain the low income elasticity of government expenditure they obtained. The low speed of adjustment also implied a growing gap between actual and desired level of government spending. The income elasticity for public goods was also found to be inelastic in the short-run but elastic in the long-run.

2.5 Summary

The causes of the growth in government spending have been attributed to several factors, ranging from the development process to demand and supply influences. Development theorists see the growth in government spending as an inevitable consequence of economic growth. They argue that as the economy goes through its development stages, the government would be required to provide the supporting infrastructural facilities which tend to expand its size. The demand-side advocates base their argument on the relationship between incomes and the level of government spending. To them, as incomes increase, so will government expenditure, causing the income elasticity of government expenditure to be above unity. The supply-side supporters see growth in government spending in terms of the government's response to the increases in demand for its goods and services.

Empirical studies on the growth in government expenditure have not produced conclusive results. The result depends on the degree of sophistication of the economy, including the degree of urbanisation, demographic changes, economic growth and micro-economic factors, such as the relative prices of private sector goods and

services, the quality of the public goods and services, and mix of production inputs.

Chapter Three

Trends in General Government Expenditure

3.1 Aggregate Government Expenditure

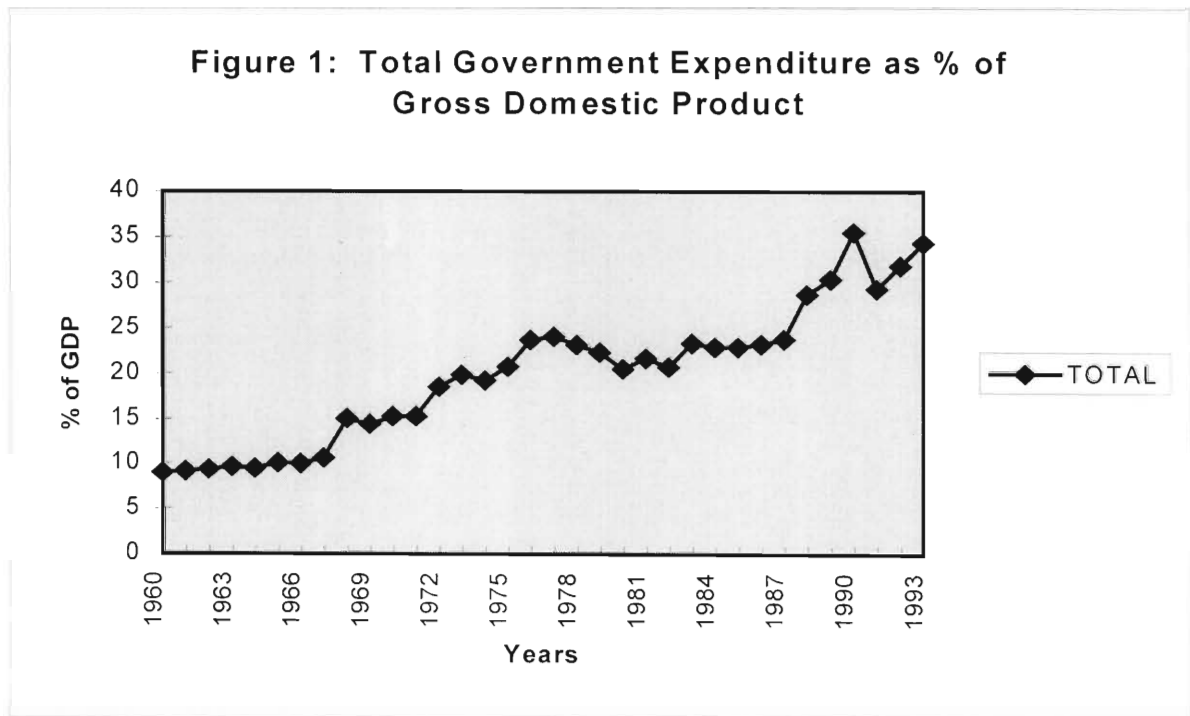
In nominal terms, general government expenditure has been increasing since 1960. Table 1 shows that, government expenditure averaged some R727.1 million in the 1960-64 period. The expenditure increased to an annual average of R1443.44 million in 1965-69, representing an increase of some 98.5%. The upward surge in the expenditure continued throughout the rest of the review period. As the entries in Table 1 indicate, in each period after 1965-69, the increases in the expenditure was over 100%, with increases of over 150% recorded in the 1975-79 and 1985-89 periods. Generally, the expenditure increases was higher in the 1985-89 period, during which time some R46625 million was spend in each year of the period.

Table 1 and Figure 1 show that as percentage of GDP, total general government expenditure showed a general trend increase during the review period. The entries in Table 1 indicate that general government expenditure averaged some 12.7% in each year of the 1960-64 period. The share increased to 15.4% in the 1965-69 period and then to 20.4% in the 1970-74 period. The expenditure-GDP ratio increased by some 4.6 percentage points to 25% in the 1975-79 period, but fell by some 3.5 percentage points to 21.5% in the 1980-84 period. Thereafter, the share of the expenditure in GDP increased sharply, reaching some 32% in the 1990-93 period.

Table 1. General Government Expenditure, 1960 - 1993
(period average)

Year	in million rands	as % GDP	% changes
1960-64	727.1	12.72	-
1965-69	1443.44	115.40	98.5
1970-74	3408.54	20.38	136.1
1975-79	8531.58	25.00	150.3
1980-84	17482.52	21.50	104.9
1985-89	46625.98	25.86	166.7
1990-93	104169.73	31.95	123.4

SOURCE: APPENDIX 1



SOURCE: Appendix 1

The increase in government spending to GDP ratio was a result of a combination of factors. Partly, for political reasons the government found it difficult to resist demands for increases in public expenditure. Most components of public spending have increased their share in GDP. The rising government spending to GDP ratio also reflected the lack of significant economic growth.

3.2 Functional Composition

The distribution of the total government spending into the major functional categories of general administration, economic services, social services, and defence is presented in Table 2.

(a) General Administration

Table 2 shows that, the largest portion of the general government expenditure was attributed to spending on general administration, which experienced a trend increase throughout the period under review. Government expenditure on general administration amounted to R335.9 million on average in each year of the 1960-64 period. The figure increased to R727.44 million in 1965-69, representing an increase of some 116.6%. The expenditure nearly tripled to an annual average of R2120.78 million during 1970-74. The trend increase in the spending on general administration continued until the 1990-93 period. The expenditure amounted to an annual average of R4925.9 million in 1975-79 and R10240.4 million in 1980-84, indicating an increase

of 107.9%. The annual average expenditure levels in the 1985-89 and 1990-93 periods were R26811.3 million and R36716.4 million, respectively. The 1990-93 figure represents an increase of some 36.9%, compared with the 107.9% increase recorded in the 1980-84 period.

Table 2. Functional Composition of Government Expenditure, (average for period)

Function / Period	1960-64	1965-69	1970-74	1975-79	1980-84	1985-89	1990-93
in million rands							
General Administration	335.86	727.44	2120.78	4925.86	10240.42	26811.32	36716.45
Economic Services	91.90	211.90	580.24	1469.92	2407.54	4597.14	14660.25
Social Services	220.08	292.22	386.10	847.06	2014.58	8292.46	41988.93
Defence	79.26	211.88	321.42	1288.74	2819.98	6925.06	10804.10
Total	727.1	1443.44	3408.54	8531.58	17482.52	46625.98	104169.73
As % of total government expenditure							
General Administration	46.42	48.84	61.38	57.72	56.50	57.90	34.53
Economic Services	12.82	14.10	17.1	17.34	13.64	9.24	13.50
Social Services	30.76	21.86	11.64	10.12	11.10	16.52	37.95
Defence	10.46	15.62	9.56	14.88	15.94	14.40	10.15
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00
As % of gross domestic product							
General Administration	5.78	7.64	12.52	14.26	12.36	15.24	11.15
Economic Services	1.70	2.34	3.54	4.42	3.04	2.66	4.60
Social Services	3.80	3.14	2.28	2.44	2.56	4.02	12.80
Defence	1.44	2.28	2.04	3.88	3.54	3.94	3.40
Total	12.72	15.40	20.38	25.00	21.50	25.86	31.95

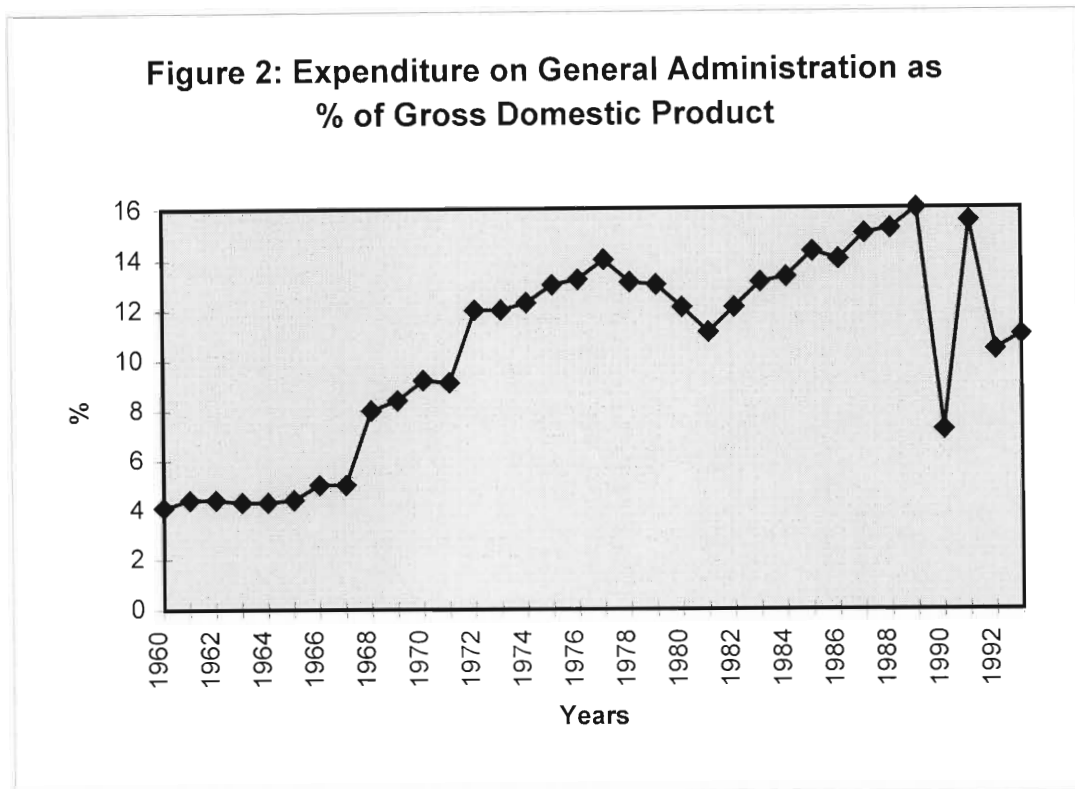
SOURCE: Appendices 1 to 5

The significant increase in government spending in general administration in the mid- to the late 1970s and early 1980s coincided with the creation of the homeland system and self-governing territories. The number of government employees increased and the cost of administrating the country increased. In the early 1990s, there was a reprioritisation in government spending shifting resources towards social services. This resulted in a decline in expenditure on administration.

Table 2 shows that the share of spending on general administration in total general government expenditure averaged 46.4% in 1960-64 and 48.8% in 1965-69, indicating an increase of some 2.4 percentage points. The share, however, jumped to an average of 61.4% in the 1970-74 period, representing an increase of some 12.6 percentage points, compared with the 2.4 percentage points increase recorded in the 1965-69 period. The share of expenditure on general administration, however, fell to 57.7% in the 1975-79, and stabilised around this figure for the rest of the period under review.

As a percentage of GDP, Table 2 and Figure 2 show that expenditure on general administration showed a general trend increase during the period under review, except for the sharp drop in 1990. The expenditure averaged 5.8% in each year of the 1960-64 period and 7.6% in the 1965-69 period, indicating an increase of some 1.9 percentage point between the two periods. The share of the expenditure in GDP, however, jumped by nearly five percentage points to 12.5% in 1970-74 and increased again by 1.8 percentage points to 14.3% in 1975-79. Thereafter, the share

dropped to 12.4% in 1985-89 period but increased sharply to 15.2% in 1985-89 before falling again to 11.2% in the 1990-93 period.



Source: Appendix 2

(b) Economic Services

The entries in Table 2 shows that expenditure on economic services was the third largest expenditure category in the 1960s, following general administration and social services. Expenditure on economic services moved to the second position in the 1970s, after overtaking social services, but moved back to the third position in the early 1980s, following the surge in defence spending. In the early 1990s, expenditure on economic services slipped further to the fourth position. The expenditure increased

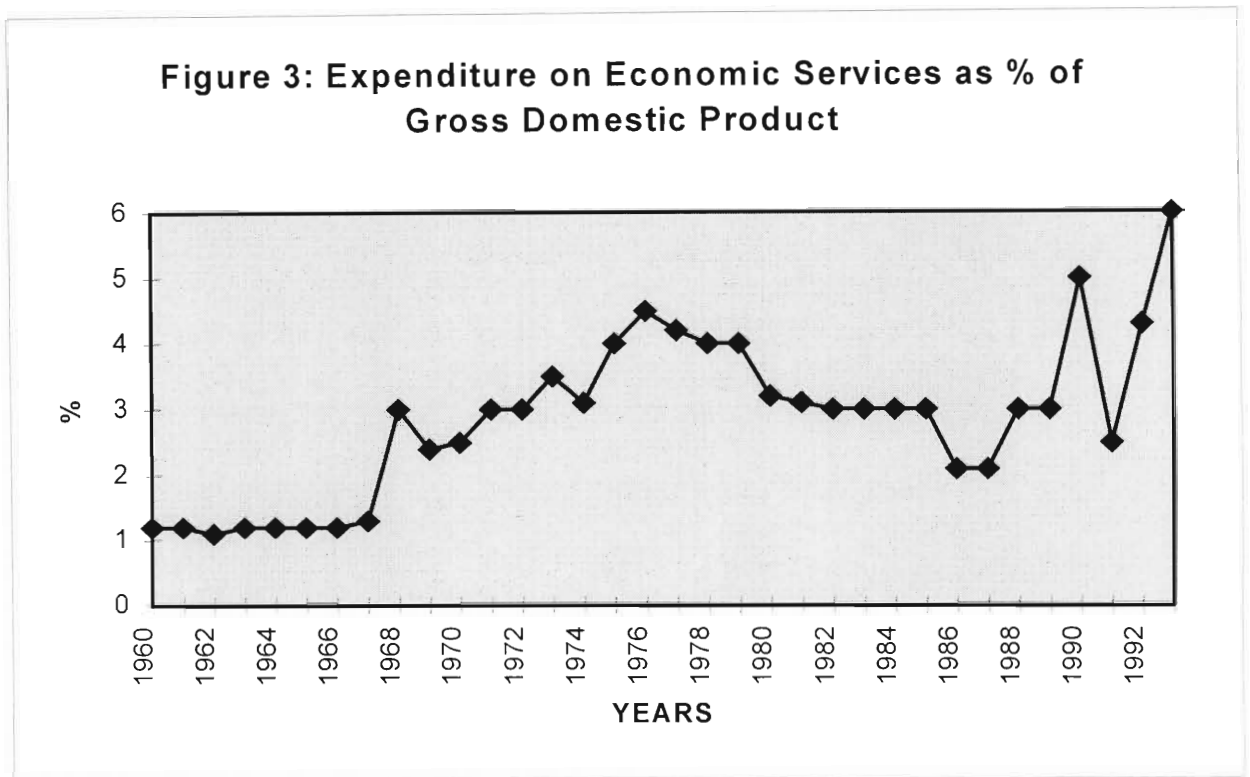
by 130.6% from an annual average of R91.90 million in the 1960-64 period to R211.9 million in the 1965-69 period. Thereafter, the expenditure experienced a sharp trend increase, reaching an annual average of R1469.9 million in the 1975-79 period. The expenditure increased by 63.8% to R2407.5 million in 1980-85, followed by a further increase of 90.9% to an annual average of R4597.1 million in the 1985-89 period. Expenditure on economic services amounted to R14660.25 million in each year of 1990-1993, representing a huge increase of 218.9% over the 1985-89 figure.

The investments in the economic sector by the government in the 1970s and throughout the 1980s. Investments in industries such as ESKOM, SASOL, ARMSCOR, ISCOR, the Railways and Harbours and other infrastructure were seen as important due to the increasing isolation of South Africa by outside countries.

As a percentage of total government spending, Table 2 shows that expenditure on economic services experienced a trend increase throughout the 1960s and 1970s and a trend decrease in the 1980s and early 1990s. The share increased steadily from an annual average of 12.8% in the 1960-64 to 17.3% in the 1975-79 period. Thereafter, the share declined steadily to 13.5% in 1990-93, except for the steep drop to 9.2% in the 1985-89 period.

As percentage of GDP, Table 2 and Figure 3 show that spending on economic services, like the share of economic services in total government expenditure, showed a general trend increase in the 1960s and 1970s, a trend decrease in the 1980s, and an increase in the early 1990s. The share increased steadily from an annual average of 1.7% in 1960-64 to 4.4% in 1975-79. Thereafter, the share declined sharply by some

1.7 percentage points to an average of 2.7% in 1985-89 before increasing by 1.9 percentage points to an average of 4.6% in the each year of the 1990-93.



Source: Appendix 3.

(c) Social Services

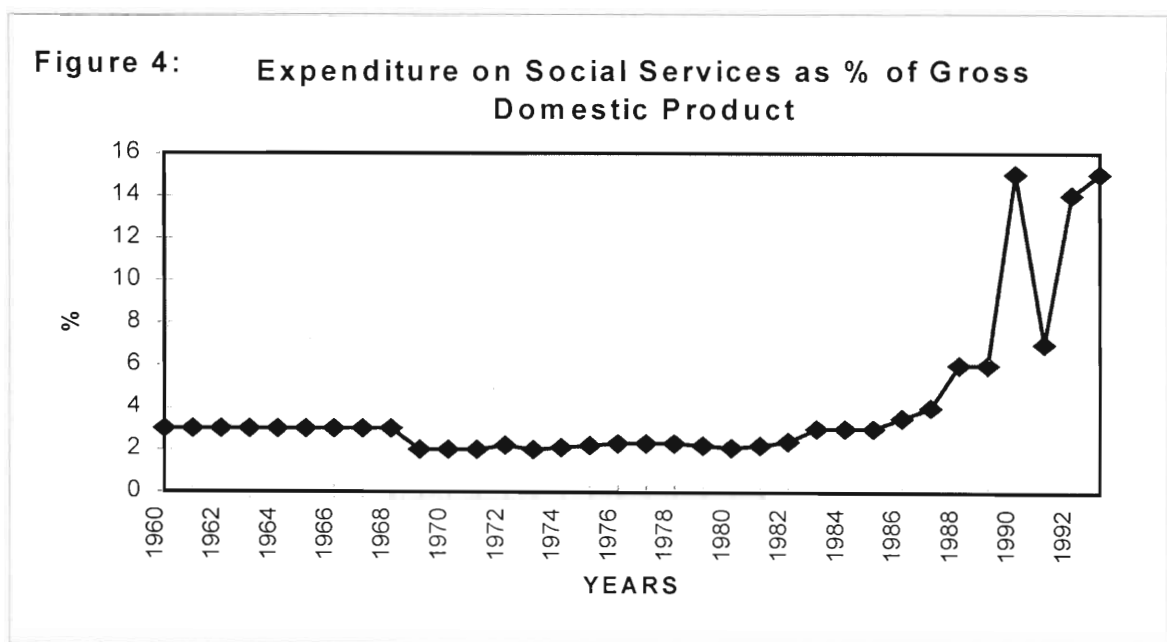
From the functional perspective, expenditure on social services by the general government was the second largest expenditure item in the 1960s, third in the early 1970s, and fourth in the late 1970s and early 1980s. Expenditure on social services moved to the second position as the largest expenditure item, following

spending on general administration, in the late 1980s and early 1990s as the government began to address the issue of backlogs in social services and facilities (Table 2). Table 2 shows that in nominal terms, government spending on social services averaged R220.1 million per annum in the 1960-1964 period, R292.2 million in 1965-69, and R386.11 million in 1970-74. In the 1975-79 period, social services expenditure jumped to an annual average of R847.06 million, representing an increase of 119.4% over the previous period's figure. Thereafter, spending on social services increased sharply, reaching R41988.9 million in each year of the 1990-93 period.

Expenditure on social services increased as a result of increases in the allocations for education, health and non-contributory cash payments to the target population. These include the old age pensions, the disability grants, war veterans grants, child and parent grants, foster care grants, and care dependency grants. Most of these grants were only accessible to certain population groups. In the late 1980s and early 1990s, there was an increased access to the grants and the government was closing the gap in the amounts of the grants received by the different race groups.

As a percentage of total government spending, Table 2 shows that social expenditure declined sharply by 8.9 percentage points from an annual average of 30.8% in 1960-64 to 21.9% in 1965-69, and by a further sharp decline of 10.2 percentage points to 11.6% in 1970-74 period. Between the 1970-74 and 1980-84, the share of social spending in total government expenditure stabilised around an average of 11%. Thereafter, the share increased sharply, reaching just under 38% of total government expenditure in the 1990-93 period.

In relation to GDP, Table 2 and Figure 4 show that expenditure on social services increased stabilised around an annual average of 3.3% in the 1960s and 2.4% in the 1970s. Thereafter, the share in GDP increased sharply to around an average of 4.0% in the mid-1980s and then jumped to an annual average of over 12% in the early 1990s.



Source: Appendix 4

Although expenditures on social services relative to total government expenditure were generally high, especially in the 1960s and early 1990s, the benefits were not equally distributed across the racial groups. The white minority received the bulk of the benefits compared to the other race groups. The white population had more access to good schools, health facilities, and welfare support systems compared to the other racial groups.

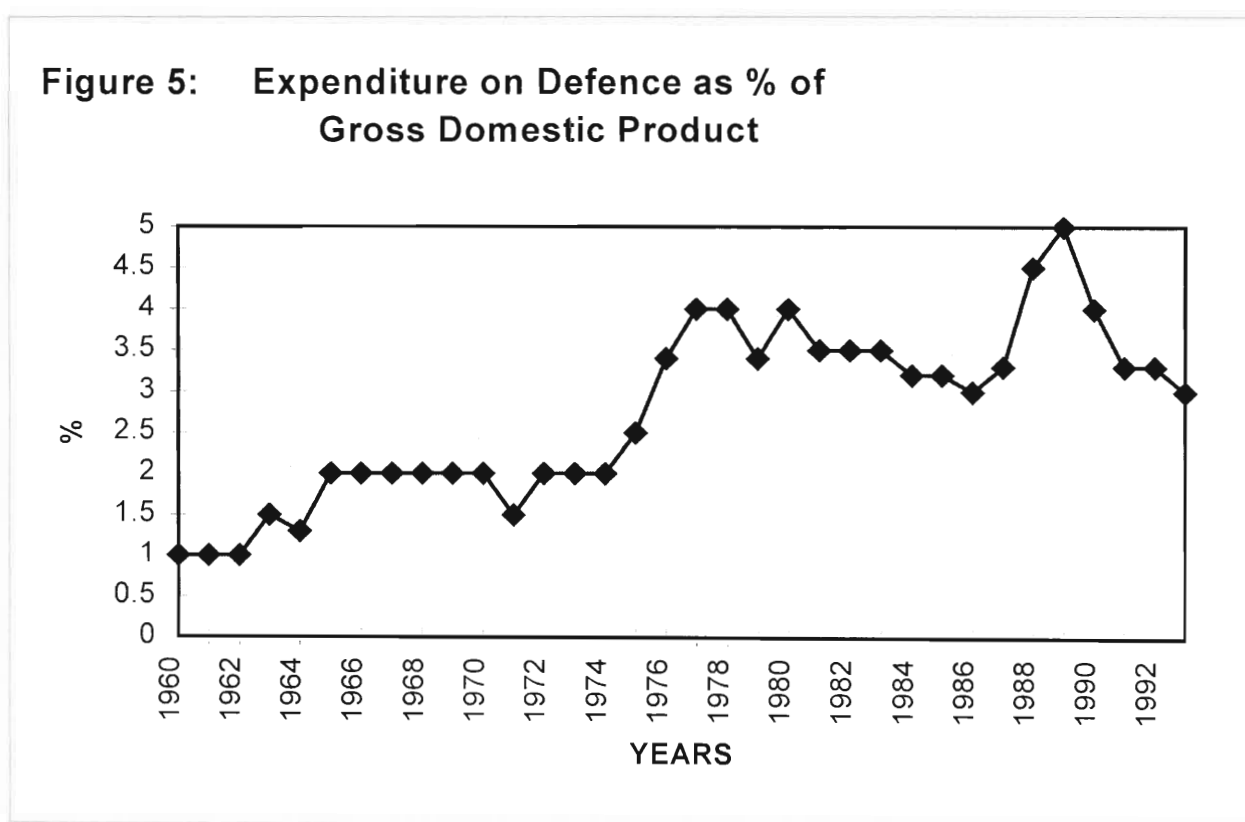
(d) Defence Spending

Table 2 shows that general government expenditure on defence amounted to an annual average of R79.3 million during the 1960-64 period. Thereafter, defence spending increased sharply to R211.9 million in each year of 1965-69 period, representing an increase of 167%. This sharp increase was to continue with stabilising the country following the massacre in Sharpeville in 1961. The surge in defence spending continued in the 1970s, where the expenditure averaged some R321.4 million in each year of 1970-74, and R1288.7 million in each year of 1975-79. The average defence spending in the 1975-79 period represented an increase of over 300% over the 1970-74 period. The government continued with its fight against the liberation movements by allocating more resources to defence after the Soweto uprising in 1976. Defence spending increased by 118.8% to an annual average of R2820.0 million in 1980-84, by 145.6% to an annual average of R6925.1 million in 1985-89, and by 56% to an annual average of R10804.1 million in 1990-93 period. As the country became more isolated, it was believed that there as a continued threat against the republic which necessitated increased spending on defence. In the early 1990s, due to the uncertainty as to the outcome of the first democratic elections, defence spending was increased.

As a percentage of total government spending, defence spending fluctuated between 10% and 16% during the review period. The share increased to an annual average of 15.6% in 1965-69, from an average of 10.5 % in 1960-64. The share, however, declined to an average of 9.6% in 1970-74 but resumed growth, reaching

an average of 15% in the 1980s before declining sharply to an average of 10.2% in the early 1990s (Table 2).

As a percentage of GDP, defence spending increased steadily from 1.4% in each year of 1960-64 to an annual average of 3.9% in 1985-90, before declining to an average of 3.4% in the 1990-93 period (Table 2 and Figure 5)



Source: Appendix 5

The increases in defence spending during the period under review were due to a number of events that took place within the country and outside its border. In addition to the Sharpeville riots in 1960, the Soweto uprising in 1976 and the countless strikes that took place in the 1980s, were also significant factors behind the

surge in the defence spending. The five year defence expansion programme drawn in 1974 was also a contributory factor. In 1974, the perceived Soviet threat, resulting from the collapse of the Portuguese colonies in Mozambique and Angola prompted the defence expansion programme. The programme called for an increased expansion of the country's military capability and the provision of military assistance to Ovambo, Kavango, and Caprivi in the former South West Africa. This was to help combat the activities of the South West Africa Peoples' Organisation (SWAPO). This accounts for the doubling of the defence expenditures between 1974 and 1978 (Budget Review, 1995).

In his analysis, Calitz (1986) shows that the major changes in expenditure priorities since 1970/71, in respect of defence, economic services and transfers and education (other than white education) during the first half of the 1980s were on balance effected in a more or less incremental manner. The increased share of these functions in budgeted expenditure was also accompanied by the allocation of an increased percentage of GDP to these functions, but without a compensating decline in the proportion of national resources mobilised for the remaining functions, causing the expenditure on each function to increase without necessarily decreasing expenditure on other functions (Calitz 1988).

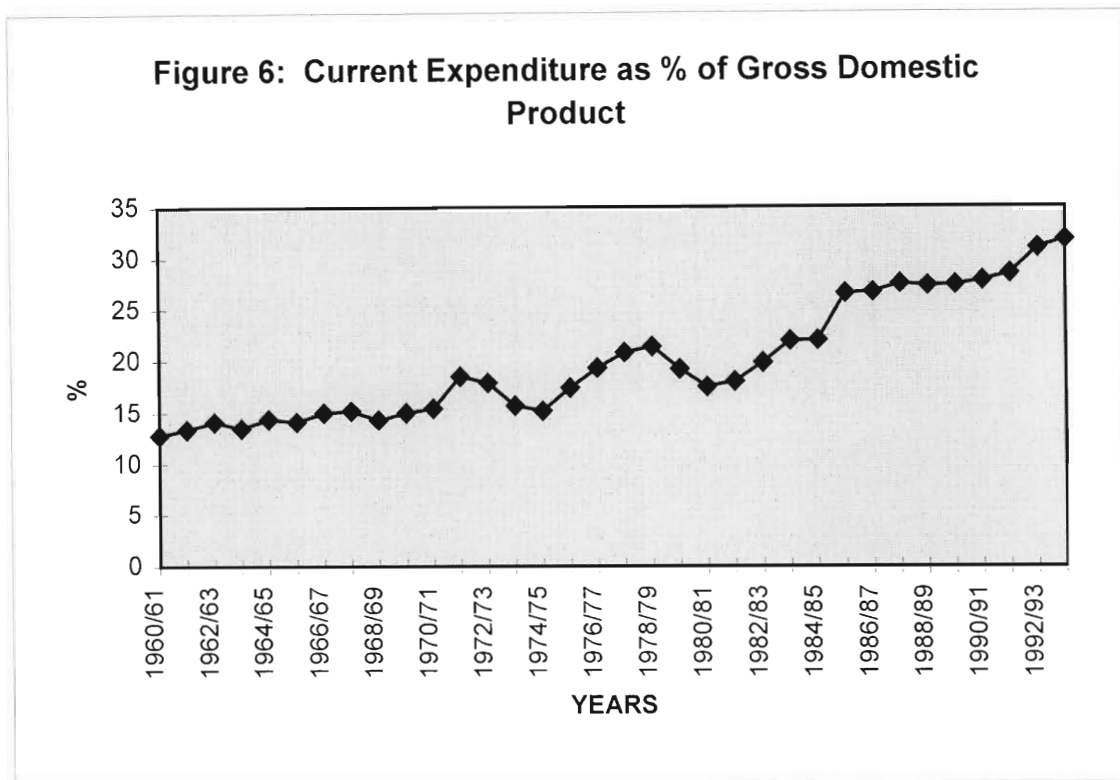
3.3 Economic Classification

The central government budget is conceptually related to the state Revenue Fund. The State Revenue Fund was established in April 1976 and was preceded by

the Consolidated Revenue Fund. The latter fund was divided into several sub-sections over its long history. The most important ones were the Revenue Account and the Loan Account, which had existed ever since the formation of the Union in 1910. Up to 1976, current expenditure were financed from the Revenue Account and capital expenditures (including loans) from the Loan Account. This dual budgetary system was widely believed to be a sound principle of public finance, in the sense that, at least, current expenditure should be financed from current revenue. Until the 1970s, the government followed this practice of not financing any portion of the current expenditure from loans (Heyns, 1982). In 1970, the Franzsen Commission recommended that the distinction between the revenue account and the loan account be abolished. This recommendation was accepted by the government and the two accounts were merged in 1976 to become the State Revenue Fund.

Current Expenditure

Figure 6 shows that current expenditure as a percentage of GDP was 12.8% in the 1960/61 fiscal year. The share, however, increased steadily until 1971/72, when a significant jump to 18.5% occurred. Thereafter, the share declined to 17.4% in 1975/76, and remained below 20% until 1982/83. In 1985/86 the share increased to 26.6% and continued to increase until it reached 31.8% in the 1993/94 fiscal year.



Source: Appendix 6

Expenditure on goods and services was the largest contributor to the surge in the current expenditure. During the 1960/61 - 1972/73 period, the share of expenditure on goods and services was above 50% of the total current expenditure. The share dropped to 47% in 1973/74 but increased again to between 50% - 60% through to 1993/94 (Appendix 6). Ever increasing expenditure on the remuneration of employees by the general government and additional expenditure, brought about by the security situation in the country were predominantly responsible for the growth in general government spending on goods and services. The share of expenditure on remuneration of employees increased from 35.1% in 1988/89 to 40.5% in 1991/92

(Budget Review 1995). This trend continued in the 1992/93 .

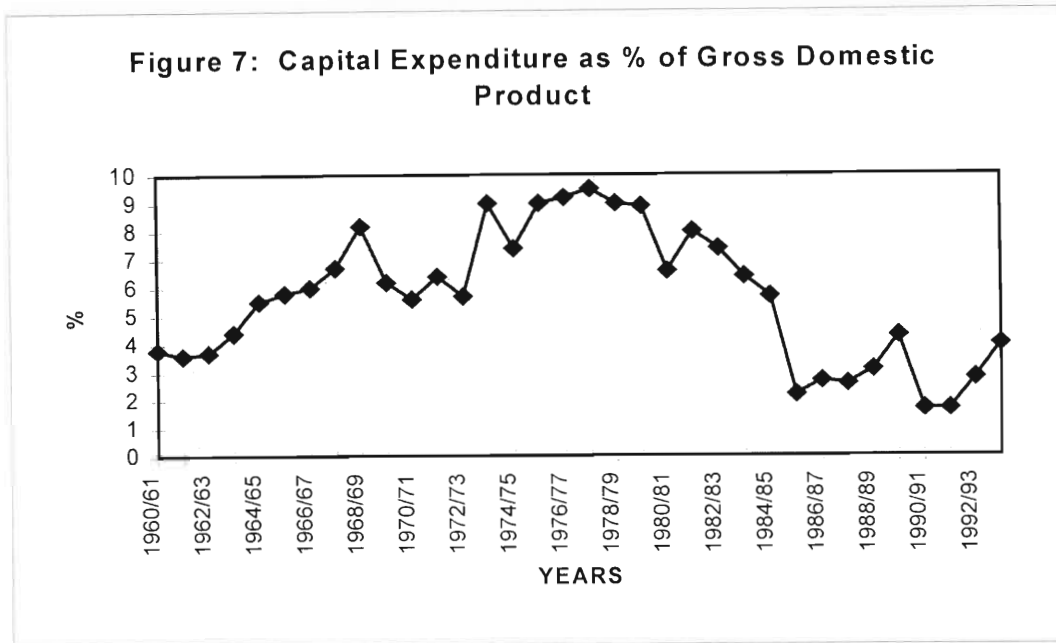
The large increase in current spending observed in the 1985/86 fiscal year was also attributed to the large increases in expenditure on subsidies and transfers. The increases in subsidies and transfers to household and economic institutions contributed to the growth in government current spending. The elimination of racial disparities in pensions and other social grants in the 1990s also contributed to the increase in the share of current expenditure in total government expenditure. The restructuring of business subsidies, however, led to declines in subsidies to sectors, such as agriculture and commuter transport, and increases to the export oriented activities. Eventually, agricultural subsidies which amounted to R160 million in 1990/91 were terminated in 1991/92. Expenditure on export promotion schemes, on other hand increased from R850 million in 1990/91 to R2.7 billion in 1992/93 (Budget Review 1995), due largely to the introduction of the revised General Export Incentive Scheme (GEIS) in 1992.

Up to the beginning of the 1980s, the share of interest payments in total current expenditure was below 10%. The share increased from 6.8% in 1978/79 to 11.8% in 1979/80. Thereafter, the share decreased slightly to 10.7% and 9.7% in 1980/81 and 1981/82, respectively. The share increased steadily to 15.4% in 1985/86 but declined to 12.8% in 1987/88, and then increased to 15.1% in 1989/90. In 1990/91 the share decreased to 13.9% but increased steadily thereafter, reaching 16.2% in 1993/94.

Capital Expenditure

Capital expenditure as a percentage share of total government ranged between 20% and 30% in the period leading to 1968. A huge increase to 36.3% occurred in 1968/69, after which the share fell steadily to 24.2% in 1972/73. For most part of the remaining period of the 1970s capital expenditure as percentage of total government expenditure expanded, and by 1979/80 the share had increased to 30%. A sharp of 7.6% occurred in 1985/86 as a result of the significant increase in the current expenditure during that period. The decline in capital expenditure continued in the 1990s when the share reached 5.6% in 1990/91 fiscal year before increasing to 11.1% in 1993/94.

Figure 7 shows the trend in the share of capital expenditure in GDP. As a percentage of GDP, capital expenditure did not exceed 10% during the period 1960/61 - 1993/94. The share was 3.8% in 1960/61, but increased steadily thereafter, reaching 9.5% in 1977/78. The share decreased to 6.6% in 1980/81 but increased to 8% in 1981/82. Thereafter the share decreased reaching 2.2% in 1985/86. There was a slight increase to 2.7% in 1986/87 and also to 4.3% in 1989/90. During 1990/91 and 1991/92 the share was 1.7% and it increased to 2.8% in 1992/93, and went up to 4% in 1993/94.



Source: Appendix 6

During the 1968/69 - 1975/76 period, expenditure on the loan account on railways and harbours, and housing increased by more than 100%, while expenditure on water affairs increased by 81%. In addition, some R274 million was made available to the Department of Industries for the expansion of the iron and steel works.

An important aspect of the South Africa's expenditure is that there has been since the 1980s an increasing tendency for actual expenditure to exceed the budgeted expenditures. Calitz (1988) offers three possible explanations for the government's inability to control expenditures. First, he explains the trend in terms of increased instability in economic variables such as the exchange rate, interest rates and prices in general, which tend to undermine the accuracy of the budget estimates. Second, he attributed the trend increase partly to short-term stabilisation considerations, such as drought relief measures or employment creation project. Third, the trend increase

was attributed to the existence of policy and programme goals that were formulated without taking into consideration what could be afforded. To the extent that these possible explanations are true, the budgeted figures would continue to be exceeded unless policy objectives are appropriately adjusted, and the adjustments effected through definite trade-offs.

Chapter Four

Framework of Analysis

4.1 Introduction

The approach we use for our analysis is based on the studies by Abedian and Standish (1984). This approach examines the supply side of public output as viewed through the total and major functional components of government expenditure. In this framework, first, government expenditure is disaggregated by function in order to determine the relative significance of each function and their contribution to the growth in total expenditure. Second, the income elasticity of private demand for public goods is estimated. The estimate is then used to determine the speed of the government's response to increased demand for its services. Finally, the future growth of each expenditure component is estimated, given some knowledge of the GDP growth.

4.2 Contribution of Expenditure Categories

In identifying the sources of growth of government expenditure, Abedian and Standish (1984) divide government expenditure, excluding expenditures by local government², into nine categories reflecting the functions provided by the state. These include general administration, black administration, public order, community

² Expenditure by local authorities were excluded from the analysis due to the lack of disaggregated data.

services, public debt, defence, health, education, and economic services. Then, they postulated that three variables are very important in determining the growth in expenditure categories. These variables are:

- (i) the relative size of each expenditure category in the short-run,
- (ii) the rate of growth of each expenditure category, and
- (iii) the rate of growth of total expenditure.

The relative contribution of each expenditure category to changes in total government expenditure in any particular period is calculated as:

$$\{X_i/G\}_{t-1} \{\delta X_i/(X_i)_{t-1}\} / \{\delta G/G_{t-1}\} = \alpha_i \quad (4.1)$$

so that

$$\Sigma \alpha_i = 1$$

where

G = total expenditure (both current and capital)

X_i = category i of total expenditure

Each of the components in equation (4.1) has its own budgetary and fiscal significance. First, $(X_i/G)_{t-1}$ represents the short-run share of category i of expenditure in the total expenditure. Its relative size underlines the fiscal significance that the state attaches to it. Second, $\delta X_i/(X_i)_{t-1}$ represents the percentage change of the expenditure of category i (X_i) over any particular period. This ratio is significant in two ways: (i) it shows the dynamics of the components of the government expenditure; and (ii) an

analysis of $\delta X_i / (X_i)_{t-1}$ for various periods illustrates the acceleration or otherwise in the expansion of the various expenditure categories.

Third, compared with $\delta G / G_{t-1}$, the size of the $\delta X_i / (X_i)_{t-1}$ indicates whether or not an expenditure category is to increase, decrease or maintain its relative significance within the budget. Generally, three possibilities exist. If:

$\delta X_i / (X_i)_{t-1} > \delta G / G_{t-1}$, the share of X_i in total expenditure will rise;

$\delta X_i / (X_i)_{t-1} < \delta G / G_{t-1}$, the share of X_i in total expenditure will decline;

$\delta X_i / (X_i)_{t-1} = \delta G / G_{t-1}$, the share of X_i in total expenditure will not change.

In this study, government expenditure is divided into four major functional categories. These include general administration, economic services, social services, and defence. The relative contribution of each of the major categories to the changes in total government expenditure during the 1960-1993 period, is calculated using equation (4.1).

4.3 Income Elasticity of Expenditure

The income elasticity of government expenditure is defined as the ratio of the percentage change in government expenditure to a percentage change in income (Henning and Tussing, 1974). The elasticity coefficient shows how much government expenditure will grow with respect to income growth. It must be emphasised that the interpretation of the elasticity of income does not necessarily imply a causal relationship between income and government expenditure. It is the ratio of the

percentage change in government expenditure to the associated percentage change in income that is of importance.

The estimation of the income elasticity of public expenditure in the literature has largely involved a regression of government expenditure (G) or the ratio of government expenditure to national income, (G/Y), against national income (Y). That is:

$$G = \alpha_0 + \alpha_1 Y + \dots + U_t \quad (4.2)$$

where U_t is a random error term.

This procedure for estimating public expenditure elasticity has been criticised on several grounds. According to Abedian and Standish (1984), equation (4.2) has two implications: First, it is necessary to interpret the income elasticity of G, i.e. the value of coefficient α_1 , in the logarithmic form as merely the ratio $\delta G\%/\delta Y\%$. Any other interpretation leads to the intractable argument over the direction of causality between G and Y. Second, G is by definition a component of Y and so a least squares regression of G on Y involves regressing government expenditure partly on itself. So if one were to use ordinary least squares in fitting the relation between government expenditure and GNP, the basic properties of the ordinary least squares will be violated.

Another criticism levelled against using equation (4.2) to estimate government expenditure elasticity is that, most studies of state expenditure presuppose that the

supply of public goods always keep up with demand. This assumption is implied when G is regressed against Y and an income elasticity is derived. In reality, however, whether the supply and demand for public goods are equal depends primarily on the speed with which the state adjusts its provision of goods and services. Should the coefficient of state responsiveness be less than one, there would emerge a wedge between the actual and the desired levels of public goods. This distinction needs to be incorporated in any model analysing state expenditure (Abedian and Standish, 1984).

To overcome the problems outlined above, Abedian and Standish (1984) developed a model involving the use of indirect least squares³. In this model, instead of regressing G against Y, G is rather fitted to private expenditures (P), (where $P = Y - G$). The private expenditure elasticity of government expenditure (N_p) is then estimated directly and from this the income elasticity of government expenditure (N_y) is derived. The relationship between the two elasticities is derived as follows:

The general income-expenditure identity $Y = C + I + G + X - M$ could be rewritten as:

$$Y = P + G \tag{4.3}$$

where

³ This model was originally presented by Henning and Tussing, (1974).

$$P = C + I + X - M$$

Assuming that 'G' is some linear function of 'P', we can write:

$$G = f(P) = \alpha_0 + \alpha_1 P \quad (4.4)$$

The elasticity of 'G' with respect to 'P' would be

$$N_{G/P} = N_p = (\delta G / \delta P) (P/G) = \alpha_1 (P/G) \quad (4.5)$$

From equation (4.4) we have

$$P = (G - \alpha_0) / \alpha_1 = (G / \alpha_1) - (\alpha_0 / \alpha_1) \quad (4.6)$$

Substituting equation (4.6) into equation (4.3) we get

$$\begin{aligned} Y &= (G / \alpha_1) - (\alpha_0 / \alpha_1) + G \\ &= [(1 + \alpha_1) G / \alpha_1] - [\alpha_0 / \alpha_1] \end{aligned} \quad (4.7)$$

Rewriting equation (4.7) for G we have

$$G = [\alpha_1 / (1 + \alpha_1)] Y + [\alpha_0 / (1 + \alpha_1)] \quad (4.8)$$

The elasticity of 'G' with respect to 'Y' would be

$$N_{G/Y} = N_y = (\delta G / \delta Y) (Y/G) = [\alpha_1 / (1 + \alpha_1)] [Y/G] \quad (4.9)$$

Replacing Y by its equivalent (P + G) from equation (4.3), equation (4.9) becomes

$$N_y = [\alpha_1 / (1 + \alpha_1)] [(G + P)/G] \quad (4.10)$$

$$= [\alpha_1 / (1 + \alpha_1)] [(1 + P/G)]$$

$$= [\alpha_1 + \alpha_1 (P/G)] / [1 + \alpha_1]$$

$$= [1 + \alpha_1 + \alpha_1 (P/G) - 1] / [1 + \alpha_1]$$

$$= 1 + [\alpha_1 (P/G) - 1] / [1 + \alpha_1]$$

From equation (4.5), $\alpha_1 = N_p(G/P)$. Substituting this in equation (4.10) we get

$$N_y = 1 + [(N_p - 1) / (G/P)N_p + 1] \quad (4.11)$$

Equation (4.11) establishes a relationship between government expenditure, (N_y) and private expenditure elasticity (N_p). Although many studies tend to focus on the government expenditure elasticity, private expenditure elasticity is an important and useful concept in its own right; being definitionally related to the government expenditure elasticity, it tells us exactly the same things (i.e. the causal relationship between income and government expenditure) about the relation between G and Y , and yields exactly the same forecasts. Moreover, the two elasticities, N_y and N_p , will always be both less than or both more than the critical value of unity (Henning and Tussing, 1974).

To estimate N_p and N_y the following model is defined:

$$G_t^e = aP_t^b U_t \quad (4.12)$$

Equation (4.12) states that G^e , the desired (or equilibrium) level of government expenditure is dependent on private expenditure (P). The annual increase or decrease of government expenditure is, on the other hand, determined as:

$$G_t/G_{t-1} = \{G_t^e/G_{t-1}\}^k \{X_t/X_{t-1}\}^c \{Z_t/Z_{t-1}\}^d \quad (4.13)$$

Equation (4.13) implies that the actual change in government expenditure between period t and period t-1 depends on:

- (i) G_t^e/G_{t-1} , the wedge between the current desired level of government expenditure and the immediate past level of the actual government expenditure;
- (ii) X_t/X_{t-1} , the level of military expenditure, which is a pure public good;
- (iii) Z_t/Z_{t-1} , a population variable (i.e. changes in the size of total population or urbanization).

Taking the log-linear forms of equations (4.12) and (4.13), we derive equations (4.12*) and (4.13*):

$$g_t^e = a + bp_t + u_t \quad (4.12^*)$$

$$g_t - g_{t-1} = k(g_t^e - g_{t-1}^e) + c(x_t - x_{t-1}) + d(z_t - z_{t-1}) \quad (4.13^*)$$

where:

g_t = real non-defence government expenditure in period t (g_t is the logarithm of G_t , and the same is true of all abbreviations)

g_t^e = desired level of government expenditure in period t

p_t = real private expenditure in period t;

x_t = real defence expenditure in period t;

z_t = a population variable

u_t = random error term

a, b, c, d, and k are parameters to be estimated.

Substituting equation (4.12*) in equation (4.13*) we obtain the testable version of the model as:

$$\begin{aligned}g_t - g_{t-1} &= k(a + by_t + u_t - g_{t-1}) + c(x_t - x_{t-1}) + d(z_t - z_{t-1}) \\&= ak + bky_t + ku_t - kg_{t-1} + c(x_t - x_{t-1}) + d(z_t - z_{t-1}) \\g_t &= ak + bky_t + g_{t-1} - kg_{t-1} + c(x_t - x_{t-1}) + d(z_t - z_{t-1}) + ku_t \\&= ak + bky_t + (1-k)g_{t-1} + c(x_t - x_{t-1}) + d(z_t - z_{t-1}) + ku_t \\&= ak + bkp_t + (1-k)g_{t-1} + c\delta x_t + d\delta z_t + v_t\end{aligned}\tag{4.14}$$

where

$$\delta x_t = x_t - x_{t-1}$$

$$\delta z_t = z_t - z_{t-1}$$

$$v_t = ku_t$$

To test the model, equation (4.14) requires a transformation of the Hildreth-Lu type, to take account of the probable autocorrelation in the error term, v_t . To measure the coefficient of autocorrelation, equation (4.15) can be used:

$$v_t = \alpha v_{t-1} + e_t \quad (4.15)$$

where α is the autocorrelation coefficient and e_t is the random error term with all the standard characteristics. After a transformation of equation (4.15), the following equation lends itself to empirical testing with no a priori expected autocorrelation in the residual:

$$g_t - \alpha g_{t-1} = ak(1 - \alpha) + bk(p_t - \alpha p_{t-1}) + c(\delta N_t - \delta N_{t-1}) + d(\delta z_t - \delta z_{t-1}) + (1 - k)(g_{t-1} - \alpha g_{t-2}) + e_t \quad (4.16)$$

where:

g_{it} = real government expenditure in the i^{th} category in period t .

p_t = real private expenditure ($C + I + \text{net exports}$) in period t .

N_t = real government expenditure on all other categories where [$i \neq j$ ($\Sigma_i \neq j$

g_{it})]

e_t = stochastic error term ($v_t = \alpha v_t + e_t$)

z_t = population variable

a, α, δ, d, k are parameters.

The lower case letters in the equation represent the logarithms of these variables.

In the model, bk is the short-run private expenditure elasticity of government expenditure while b is its counterpart in the long-run.

The model incorporates lagged government expenditure as one of the explanatory variables to test the significance of the budgetary process in South Africa. In view of the incremental method of budget preparation in the country, a positive relationship is expected to exist between the level of government expenditure in the current year with their past years' levels. The private expenditure coefficient, bk , is expected to be positive. If the coefficient is positive and significantly different from unity then the Wagner's law would have been proved for South Africa for the period 1960 - 1993. That is, government expenditure rises with a rise in the income level. A negative relationship between the expenditure categories is expected. This is in line with the assumption that an increase in government expenditure on one function reduces the resources available to be spent on the others. However, there can also be a positive relationship between any two functions or services if those functions or services are complementary. The population variable is particularly important in the South African context. Rapid population growth or increases in urbanization creates huge demands for public goods and services, such as sanitation, health, education, cultural and sports facilities, and so on.

4.4 Future Trends in Government Expenditure

The speed with which governments respond to the demand for their goods and services, i.e., k in equation (4.16), is critical for any analysis of the growth of the size of government. Given the expected growth of national income and the long-run income elasticity of demand it is possible to forecast the limiting rate of change in the state expenditure. To determine the limiting or maximum rate of growth of government expenditure g_t , as income y_t grows, we use the expression:

$$r_g = (1 + r_y)^b - 1 \quad (4.17)$$

where:

r_g is the rate of growth of government expenditure

r_y is the rate of growth of income

b is the long run income elasticity of demand

Equation (4.17) shows that as income grows, the actual level of expenditure will always fall short of the specified fraction of the desired level of expenditure even in the limit. Moreover, the more rapidly income grows, the greater would this shortfall be. The shortfall is due to the delayed response of actual expenditure to changes in income. If income were not to grow at all, actual expenditure would approach more and more closely to the desired or equilibrium value. But if income grows, then the desired value of expenditure grows as well and becomes a moving target towards which the actual expenditure is constantly adjusting. In the limit, the G_t / G_{it}^e ratio will be measured as:

$$\lim_{t \rightarrow \infty} (G_t/G_t^e) = (1 + r_y)^{b[1-(1/k)]} \quad (4.18)$$

From these limiting cases it is clear that if $r_y = 0$, or $k = 1$, the ratio G_t/G_t^e approaches unity, i.e. the case of no lags in the response of g_t to y_t , regardless of the value of r_y . This ratio is calculable given the estimates of b and k .

Chapter Five

Results and Discussion

5.1 Introduction

The results of the estimated expenditure functions are presented in this chapter.

The functions were estimated using time series data for the period 1960-1993. The computer package used in estimating the models is *Shazam* version 7.0, developed by White (1992). The equations are estimated in their logarithm forms using the ordinary least squares technique. The test of significance of the estimated coefficients was undertaken at the 10% level using the two tail test procedure.

5.2 Data Sources and Reliability

Data for the empirical analysis were obtained from two main sources:

- (i) The Central Statistical Service of South Africa (CSSSA).

Among others, the CSSSA publishes annually the *South African Statistics*.

This publication contains time series data on government expenditure under functional and economic classifications. All data related to government expenditure were obtained from the various issues of this publication.

- (ii) The South African Reserve Bank (SARB).

Like the CSSSA, the SARB publishes occasionally the *National Income Accounts of South Africa* and the *Public Finance Statistics of South Africa*. Data on gross domestic product, private expenditure (private consumption, private investment

and net exports) were extracted from the June 1994 issue of the *National Income Accounts 1946 -1993*.

All the expenditure data in nominal terms that had to be converted into real values were done using the consumer price index with 1990 as the base year. The gross domestic product was converted into real terms using the gross domestic product deflator. The variables used in this analysis are defined as follows:

ADMIN	=	Government expenditure on general administration
ECON	=	Government expenditure on economic services
SOC	=	Government expenditure on social services
DEF	=	Government expenditure on defence
TOT	=	Government expenditure
PVT	=	Private expenditure
WPOP	=	White population
BPOP	=	Black population (Africans + Coloureds + Indians)
TAD	=	Total government expenditure less administration
TED	=	Total government expenditure less economic services
TSD	=	Total government expenditure less social services
TDEF	=	Total government expenditure less defence

5.3 Results

(a) Relative Contribution of Expenditure Categories

Table 3 presents the relative contribution of the expenditure categories to changes in total government expenditure for the 1960-1993 period, using equation (4.1). The table shows that expenditure on general administration contributed the most to the growth in total government expenditure, contributing some 66% in 1961-70, and 58% in 1971-80. In 1981-88, the relative contribution to total government spending by general administration expenditure was 66%. During the 1989-1991 period, the contribution of general administration to total government spending was actually negative. The relative contribution was 28% and 32% in 1992 and 1993, respectively.

The contribution of expenditure on economic services fluctuated significantly but remained positive throughout the 1961-1993 period except in 1985. In 1961 the relative contribution to total government expenditure by economic services expenditure was 4%. The relative contribution increased to 25% in 1963 and then declined reaching 7% in 1964 and 1965. The relative contribution increased to 26% in 1967 before decreasing to 5% in 1968. In 1969-1975 it fluctuated between 10%-25%, except for 1973 when it was 5%. From the late 1970s until the mid-1980s, the relative contribution was below 10%, except in 1978 when it was 20% and 1985 when it was negative. In 1990, the relative contribution increased to 99%.

TABLE 3: RELATIVE CONTRIBUTION OF EACH EXPENDITURE CATEGORY TO GROWTH IN
TOTAL GOVERNMENT EXPENDITURE, 1960 - 1993

YEARS	ADMINISTRATION	ECONOMIC SERVICES	SOCIAL SERVICES	DEFENCE	TOTAL
1961	0.43	0.04	0.14	0.39	1
1962	0.22	0.13	0.03	0.61	1
1963	0.52	0.25	0.40	-0.16	1
1964	0.32	0.07	0.10	0.51	1
1965	0.82	0.07	0.27	-0.15	1
1966	0.42	0.15	0.23	0.20	1
1967	0.65	0.26	0.05	0.05	1
1968	2.01	0.05	-1.10	-0.06	1
1969	0.71	0.16	0.09	0.06	1
1970	0.53	0.28	0.16	0.00	1
1971	0.74	0.11	0.08	0.08	1
1972	0.48	0.25	0.02	0.03	1
1973	0.90	0.05	0.17	0.15	1
1974	0.56	0.21	0.10	0.23	1
1975	0.34	0.24	0.06	0.22	1
1976	0.60	0.08	0.10	0.27	1
1977	0.57	0.03	0.12	0.25	1
1978	0.69	0.20	0.09	0.05	1
1979	0.66	0.08	0.15	0.34	1
1980	0.22	0.08	0.10	0.12	1
1981	1.23	0.07	0.25	0.21	2
1982	0.46	0.08	0.11	0.08	1
1983	0.69	0.11	0.11	0.05	1
1984	0.86	0.06	0.15	0.15	1
1985	0.51	-0.04	0.31	0.08	1
1986	0.73	0.07	0.15	0.18	1
1987	0.31	0.15	0.33	0.20	1
1988	0.49	0.05	0.14	0.13	1
1989	-0.79	0.28	1.09	-0.01	1
1990	-5.11	0.99	3.41	0.11	-1
1991	-0.68	0.38	1.48	0.06	1
1992	0.28	0.33	0.43	-0.03	1
1993	0.32	0.17	0.44	0.08	1

Source: Computed using equation (4.1)

The contribution of social services fluctuated significantly during the period.

The share ranged between 3% and 341%. In 1968, however, social services contribution was negative. Social services was the largest contributor in 1987 and also during the 1989 - 1993 period. In 1990, the social services contribution was 341%, the largest contribution by any expenditure item in the review period. The large contribution of social services to the growth of government expenditure in this period may be due to the fact that during the early 1990s the government attempted to close the gap in social benefits payments received by the different race groups.

(b) Expenditure Elasticities

(i) General Administration

The estimated elasticities of administration expenditure are presented in Table 5.1. In equation (a), the adjusted R^2 is 0.94, indicating that the explanatory variables together explain at least 94% of the variations in government expenditure on general administration. The Durbin-h statistic of 1.2, falls within the zone of indecision, indicating no evidence of serial correlation. The standard error of the estimates (SEE) is 0.08. The coefficient of the private expenditure variable has the expected positive sign and is statistically significant. The size of the coefficient indicates that a 1% proportionate increase in private expenditure will lead to a 1.9% proportionate increase in expenditure on general administration. The coefficient of the total non-administrative expenditure has the expected negative sign but not significant. The coefficients of both the white and black population variables have the expected signs, and are statistically significant, while the coefficient of the lagged administration

expenditure has the expected positive sign but is statistically insignificant.

In an attempt to improve upon the results, the model was re-estimated leaving out the white population variable because it was found to be highly correlated with the black population variable. The results of the re-estimated model is presented in equation (b) in Table 5.1. The adjusted R^2 in equation (b) decreased slightly to 92%, while the h- statistic remained the same. The SEE increased slightly but it is still reasonably low. The results in equation (b) show that the coefficients of all the variables have the expected signs, but the coefficients of non-administrative expenditure, black population, and lagged administration expenditure were not significant.

The equation was also re-estimated, first leaving out the black population variable because it was highly correlated with the white population variable. The results shown in equation (c) gave an h- statistic of 2.8, implying the presence of first order positive serial correlation, while the adjusted R^2 increased by one percentage point to 0.93%. The size of the constant term increased significantly in this estimation. The size of the private expenditure coefficient decreased but had the correct sign and significant. The coefficient of non-administrative expenditure also had the correct sign and significant this time. The white population variable had a positive sign but was not significant. The sign of the coefficient of the lagged administration expenditure remained positive but was not significant.

Table 5.1 Estimated Elasticities of Government Expenditure on General Administration, 1960 - 1993.

Eqtn	Dependent Variable	Constant	Pvt	Tad	Wpop	Bpop	Admin _t	Adjusted R ²	h	SEE
(a)	General Administration	-2.5	1.9	-0.2	6.01	-3.3	0.03	0.94	1.2	0.08
		(-2.5)	(3.2)	(-0.9)	(2.7)	(-3)	(0.6)			
(b)	General Administration	-0.9	2.8	-0.2		-1.3	0.07	0.92	1.2	0.09
		(0.4)	(5.4)	(-0.8)		(-1.4)	(1.09)			
(c)	General Administration	-3.5	1.8	-0.5	1.4		0.09	0.93	2.8	1.0
		(-3.2)	(2.7)	(-2.3)	(0.8)		(1.6)			
(d)	General Administration	-4.1	2.3	-0.4			1.0	0.92	2.5	0.1
		(-5.8)	(6.4)	(-2.2)			(1.6)			

Finally, the two population variables that were highly correlated with each other were dropped and the model re-estimated. The results presented as equation (d) appears to be relatively better in the sense that all the explanatory variables had the correct signs and are significant. The h-statistic shows that there is autocorrelation while the adjusted R^2 remained unchanged. According to the results a 1% proportionate increase in private spending will cause an increase in government spending on general administration by 2.3%, proportionally. Also a 1% proportionate increase in non-administrative expenditure will lead to a 0.4% proportionate decrease in government spending on general administration. Finally, holding everything else constant, past level of government spending on general administration have positive influence on the current year's administration spending.

(ii) Economic services

The results of the estimated elasticities for government expenditure on economic services are presented in Table 5.2. The t-statistics are presented in the brackets below.

Equation (a) shows that the explanatory variables together explain 96% of the variation in government expenditure on economic services. The h-statistic of 0.6 implies that there is no evidence of serial correlation, while the SEE value of 0.07 is reasonably low.

The coefficient of private expenditure variable has the expected positive sign, but not significant. The coefficient of the non-economic expenditure variable has an

unexpected positive sign significant. The size of the coefficient shows that a 1% proportionate increase in government spending on economic services will lead to a 2.2% proportionate increase in government spending on non-economic services. The coefficient of the white population variable has a negative sign and is statistically not significant. On the other hand, the coefficient of the black population variable has the expected negative sign and is significant. The size of the coefficient shows that a 1% proportionate increase in black population will lead to a 3.7% proportionate decrease in government expenditure on economic services. The coefficient of the lagged economic services expenditure variable has an unexpected negative sign and is not significant.

Given the high correlation between the black and the white population variables, we re-estimated the model without the white population variable since it was found to be a non-significant factor. The results are presented as equation (b) of Table 5.2. In equation (b) the coefficient for the private expenditure variable has the expected positive sign but still not significant. The coefficient for the non-economic services had an unexpected positive sign and significant, although its the size remained the same. The coefficient for the black population variable has the expected negative sign and is strongly significant, while the lagged dependent variable came out with a wrong sign and also insignificant.

Table 5.2 Estimated Elasticities of Government Expenditure on Economic Services, 1960 - 1993

Eqtn	Dependent Variable	Constant	Pvt	Ted	Wpop	Bpop	Econ ₋₁	Adjusted R ²	h	SEE
(a)	Economic Services	0.5	0.3	2.2	-0.2	-3.7	-0.004	0.96	0.6	0.07
		(0.6)	(0.5)	(7.7)	(-0.1)	(-4.6)	(-0.07)			
(b)	Economic Services	0.6	0.2	2.2		-3.8	-0.005	0.96	0.6	0.07
		(0.8)	(0.5)	(8.1)		(-6.4)	(-0.08)			
(c)	Economic Services	-2.2	1.1				0.3	0.87	2.4	0.1
		(-3.6)	(4.6)				(2.9)			

Equation (b) was re-estimated with only the private expenditure and lagged dependent variables as the arguments. The results presented in equation (c) shows that, the two explanatory variables have the right signs and were significant. A 1% increase in private expenditure will cause a 1.1% proportionate increase in economic expenditure, whereas 30% of the present level of economic spending is determined by the past level of economic spending.

(iii) Social services

The estimated expenditure elasticities on social services are presented in Table 5.3. The t-statistic for each coefficient is presented in the brackets below the coefficients. The adjusted R^2 value shows that about 90% of the variation in total government expenditure on social services are explained by the changes in the explanatory variables. The h-statistic shows that it is not possible to reject the presence of positive serial correlation.

The results as presented in equation (a) of Table 5.4 are very poor. All the estimated coefficients have the wrong signs, except that of the non-social services expenditure. In addition, three of the five coefficients are not significant.

Upon verification, the black population variable was found to be highly correlated with the private expenditure variable, which itself was found to be correlated with the non-social spending variable. Equation (a) was therefore re-estimated without the black population variable. The new results produced significant

coefficients for the non-social spending, white population, and lagged dependent variables. The coefficient for the white population variable came out with the expected sign. The income variable remained insignificant. The h-statistic, however, shows that there is positive first order serial correlation in this estimation.

Equation (c) in Table 5.3 shows the results without the white population variable. In this equation the income variable is negative but significant. The lagged expenditure variable is now not significant. The results did not improve much so the model was re-estimated again leaving out the two population variables. The results presented in equation (d) show that the coefficients of the remaining variables came out with the expected signs and were all significant. The h-statistic shows traces of serial correlation. The income elasticity of 3.2 implies that a unit percentage change in private incomes will cause government spending on social services to expand by 3.2%. Also a 1% proportionate increase in government spending on non-social services leads to a 1.2% proportionate decrease in government spending on social services.

Table 5.3 Estimated Elasticities of Government Expenditure on Social Services, 1960 - 1993

Eqtn	Dependent Variable	Constant	Pvt	Tsd	Wpop	Bpop	Soc _{t-1}	Adjusted R ²	h	SEE
(a)	Social Services	-1.4	-0.8	-0.8	-1.0	6.2	-0.01	0.90	-2.55	0.1
		(-1.0)	(-0.9)	(-2.3)	(-0.3)	(3.7)	-(0.2)			
(b)	Social Services	-0.2	-0.4	-1.1	9.1		0.2	0.79	3.4	0.1
		(-0.09)	(-0.3)	(-3.4)	(3.5)		(1.6)			
(c)	Social Services	1.1	-2.3	-0.4		6.3	0.06	0.90	1.4	0.1
		(0.9)	(-2.5)	(-1.8)		(7.1)	(0.9)			
(d)	Social Services	-5.6	3.2	-1.2			0.3	0.70	3.8	0.2
		(-3.6)	(3.9)	(-3.1)			(2.6)			

(iv) Defence

The results of the estimated elasticities of government expenditure on defence are reported in Table 5.4. Like the other tables the t-statistics are presented in the brackets below each coefficient. The results as presented in equation (a) show that all the coefficients, with the exception of that of the white population, came out with the wrong sign. Not only that but also all the coefficients were not significant, save for the coefficient of the lagged dependent variable.

Upon verification, the two population variables were found to be highly correlated with themselves. These variables were therefore dropped one after the other and the model re-estimated. The results of the re-estimated model with no black population variable is reported as equation (b), and the one with no white population as equation (c). Although the two results produced coefficients with the right signs, except that of the non-defence expenditure, they were all poor. Except for the lagged defence expenditure variable, none of the other variables was found to be a significant determinant of defence expenditure. The model was therefore re-estimated leaving out the two population variables and the results reported in equation (d).

Equation (d) shows that the lagged dependent variable and the private expenditure coefficients are significant, while non-defence spending variable remained insignificant. The private income elasticity of defence shows that a 1% increase in private spending will cause defence spending to increase by a proportional 0.8%. Also, holding everything constant, past level of defence spending was found to have positively affected defence spending. For this variable, a 1% change in it caused

Table 5.4 Estimated Elasticities of Government Expenditure on Defence, 1960 - 1993

Eqtn	Dependent Variable	Constant	Pvt	Totldef	Wpop	Bpop	Def-1	Adjusted R ²	h	SEE
(a)	Defense	-1.6	0.6	0.5	0.06	0.24	0.5	0.95	1.05	0.08
		(-1.4)	(1.03)	(0.2)	(0.03)	(0.3)	(5.5)			
(b)	Defense	-1.5	0.7	0.4	0.5		0.4	0.95	1.05	0.08
		(-1.4)	(1.1)	(0.2)	(0.4)		(5.7)			
(c)	Defense	-1.6	0.7	0.05		0.3	0.5	0.95	1.4	0.08
		(-1.7)	(1.2)	(0.2)		(0.4)	(5.8)			
(d)	Defense	-1.7	0.8	0.07			0.4	0.95	1.05	0.08
		(-2.0)	(1.8)	(0.3)			(5.8)			

0.4% change in current defence expenditures.

(v) Total non-defence government expenditure

Table 5.5 presents the results of estimated elasticities of the total non-defence government spending. The t-statistics are in the brackets below each coefficient. The coefficient of the private expenditure in equation (a) has the expected positive sign but not significant. The defence spending coefficient has an both a wrong sign and not significant. The coefficients of the two population variables came out with wrong signs, although the coefficient for the black population variable was significant. The lagged non-defence spending variable also has a negative sign and insignificant.

The two population variables found to be highly correlated with themselves were dropped and the model re-estimated. The results presented in equation (b) show that the coefficients of the private expenditure and defence variables were significant while the lagged total non-defence expenditure coefficient was not. The private expenditure coefficient has a correct sign. The other explanatory variables have unexpected signs. The private income elasticity of non-defence spending was estimated at 1.3, indicating that a 1% proportionate change in private incomes will lead to a 1.3% proportionate change in non-defence spending. The positive sign for the defence spending coefficient was not expected.

Table 5.5 Estimated Elasticities of Total Non-Defence Government Expenditure, 1960 - 1993

Eqtn	Dependent Variable	Constant	Pvt	Def	Wpop	Bpop	Tot _{t-1}	Adjusted R ²	h	SEE
(a)	Totldef	-1.32	0.4	0.1	-0.02	1.9	-0.002	0.98	0.03	0.04
		(-1.96)	(1.02)	(0.92)	(-0.02)	(2.2)	(-0.07)			
(b)	Totldef	-1.8	1.3	0.2			0.002	0.98	0.2	0.05
		(-2.6)	(5.0)	(1.8)			(0.1)			

(c) Future Trends in Government Expenditure

Table 5.6 shows the limiting percentage growth in expenditure on general administration, economic services, social services, defence spending, and total non-defence spending. Average growth rates of income have been chosen for each decade. The average growth rate of income was 6.4% in 1960- 1969; 4.6% in 1970-1979, 3.2% in 1980-1989; and in 1990 - 1993 it was -0.8%. The speed of response (k), and the long-run income elasticity of government expenditure (b) are presented for each function in table 5.6:

Table 5.6: Limiting Percentage Growth in Government Expenditure

Years	Rate of growth of income, r_y	Administration $r_g(b=2.5)$	Economic services $r_g(b=1.6)$	Social services $r_g(b=4.6)$	Defence $r_g(b=1.3)$	Total expenditure $r_g(b=1.3)$
1960 - 69	6.4	148	24	9964	13	13
1970 - 79	4.6	73	15	2764	8	8
1980 - 89	3.2	35	9	735	5	5
1990 - 93	-0.8	-0.9	-0.9	-0.9	-0.9	-0.9

In the model used for our empirical analysis, it was found that actual government spending is always a fraction of the desired level of government spending.

The higher the growth rate in income, the larger the gap between actual and desired

level of government spending will become. While the growth rate in actual government expenditure is assumed to increase, it could be constrained by the growth rate in income, whereas the desired level of government spending is not constrained by the rate of increase in income. Therefore, the growth rate of desired level of government spending exceeds the growth rate of actual government spending. When the average growth rate in income is negative, the rate of growth of government expenditure is also negative as shown in Table 5.6. The entries in the table show that if the income growth rate is 6.4%, the rate of growth of total non-defence government expenditure will be 13%. If income declines by 0.8% total non-defence government spending will also decline by a larger proportion, 0.9%.

The average rate of growth for the national income during the 1970-79 period was 4.6%. Table 5.6 show that the rate of growth of government expenditure on general administration was 73%, economic services was 15%, social services was 2764%, and defence was 8%. During this period, total expenditure grew by 8%. The results in Table 5.6 also show that, the more elastic the expenditure function, the higher will be the growth in government expenditure with a given percentage increase in income. Social services is more elastic compared to the other functions, as depicted by its long-run income elasticity coefficient of 4.6. The large long-run income elasticity coefficient is responsible for the extremely high increase in expenditure on social services. The increase in expenditure on social services during the 1960-69 period, when income grew by 6.4% was 9964%. Comparing this to defence which was less elastic, ($b = 1.3$), the growth in spending was 13%. The long-run income

elasticity of defence is the same as the long-run income elasticity of total non-defence spending. In each period, the growth in defence spending with a given increase in income is the same as the growth in total non-defence spending.

During the 1990-93 period, the rate of growth of income was negative. The growth rate in each expenditure category was also negative. It is therefore necessary for the government to ensure that the growth in income is positive before it can think of any increase in government spending. The long run income elasticity of is also important in determining whether government expenditure will increase or decrease and by how much. The growth of government spending on all the functions was positive whenever the growth in income was positive, and became negative as the growth in income became negative.

Table 5.7 shows the limiting ratio between actual and desired level of government spending. The table shows that with the growth rate of income of 6.4% the ratio of actual to desired total government spending was 93%. When income decreases by 0.8% the ratio increases to 125%. As income grows larger, the gap between the desired and actual level of government spending becomes wider. In Table 5.7, with the growth rate of income of 6.4%, actual government spending on general administration was 87% of the desired level of government spending, spending on economic services was 71% of the desired level, spending on social services was 37% of the desired level, and spending on defence was 64% of the desired level. When income decreases by 0.8%, i.e. period 1990-1993, the ratio of desired to actual government spending increases to 157% for administration, 304%

for economic services, 25% for social services, and 432% for defence spending.

Table 5.7: Limiting Ratio of Actual and desired Level of Government Spending

Years	Rate of growth of income r_y	Administration G_t/G_{it}^e $b = 2.5$ $k = 0.9$	Economic Services G_t/G_{it}^e $b = 1.6$ $k = 0.7$	Social Services G_t/G_{it}^e $b = 4.6$ $k = 0.7$	Defence G_t/G_{it}^e $b = 1.3$ $k = 0.6$	Total Expenditure G_t/G_{it}^e $b = 1.3$ $k = 0.9$
1960 - 69	6.4	0.87	0.71	0.37	0.64	0.93
1970 - 79	4.6	0.90	0.77	0.50	0.71	0.95
1980 - 89	3.2	0.93	0.83	0.57	0.78	0.96
1990 - 93	-0.8	1.57	3.04	25	4.32	1.25

Table 5.8 gives information on the speed of response of government spending, and the short- and long-run expenditure elasticities. The speed of response (k) is calculated using the coefficient of the lagged dependent variable in equation 4.16. For general administration, the speed of response between actual and desired level of government spending is 0.9. This means that the actual government spending catches up with only 90% of the desired level of government spending. The short-run expenditure elasticity is 2.3 and the long-run expenditure elasticity is 2.5. In the short run government expenditure responds to the desired levels by 2.3% and it responds by 2.5% in the long-run. The speed of response between the actual and the desired

government expenditure on economic services is 0.7, and the same is true for social services. Actual government spending on economic and social services responds to 0.7% of the desired level of spending in each of these categories. The short and long-run expenditure elasticities for economic services are 1.1 and 1.6 respectively. That is, in the short-run, actual government expenditure is about 1.1% of the desired level compared to 1.6% in the long-run. The short and long-run expenditure elasticities in social spending are 3.2 and 4.6 respectively. In the short-run actual government expenditure is 3.2% of the desired level and 4.6% in the long-run.

For defence spending, the speed of response between actual and desired level is 0.6. The short-run expenditure elasticity is 0.8. Its long-run counterpart is 1.3. In the short-run actual defence spending is about 0.8% of the desired level and it is 1.3% of the desired level in the long-run.

In the total non-defence spending category the speed of response between actual and desired level of spending is 0.9. The short-run expenditure elasticity is the same as the long-run income elasticity, 1.3.

Table 5.8: Speed of Response, Short- and Long-Run Elasticities of Government Expenditure

	Constant	Private Expenditure	Lagged Dependent Variable	Other	Speed Of Response (k)	Short-Run Expenditure Elasticity	Long-Run Expenditure Elasticity
Administration	-4.1	2.3	0.09	-0.4	0.9	2.3	2.5
Economic Services	-2.2	1.1	0.3		0.7	1.1	1.6
Social Services	-5.6	3.2	0.3	-1.2	0.7	3.2	4.6
Defence	-1.7	0.8	0.4	0.07	0.6	0.8	1.3
Total	-1.8	1.3	0.002	0.2	0.9	1.3	1.3

5.4 Discussion of the Results

Table 5.9 shows the estimated income elasticities of the non-defence total expenditure and the major components of the government expenditure.

Table 5.9: Income Elasticities of Government Expenditure, 1960 - 1993

Expenditure	Short-run income elasticity	Long-run income elasticity
Total non-defence expenditure	1.3	1.3
General administration	2.3	2.5
Economic services	1.1	1.6
Social services	3.2	4.6
Defence	0.8	1.3

Source: Computed from Tables 5.1 - 5.5, using equation (4.11)

The short and long-run income elasticities are positive and greater than unity for all the functional categories, providing support for the existence of the Wagner's Law. The short-run income elasticity for defence spending is slightly less than unity.

General Administration

The estimated income elasticity of expenditure on general administration in the short run was 2.3 and for the long run the elasticity was 2.5. This implies that expenditure on general administration increased more than the proportionate increase in income

An important factor that caused government expenditure on administration to grow during the 1960-1993 period was the administrative structures that came into being with the inception of the apartheid system. During the period under review, the country was divided into different provinces each with its own administrative. Politically, the country was divided into four provinces namely, Natal, Cape, Orange Free State, and the Transvaal. In addition there were the independent states of Transkei, Bophuthatswana, Venda, Ciskei, and the self-governing territories of KwaZulu, Lebowa, QwaQwa, KaNgwane, Gazankulu, and KwaNdebele. The creation of the homelands system coincided with the inception of a tricameral parliamentary system, where three houses, one each for the coloureds, indians, and whites, were established.

For administrative purposes, the country was divided into 275 districts in 1970, 266 of which were controlled by white magisterial districts and 9 were designated as black homelands largely controlled by Africans. At that time, only 21 of the 275 districts had productive capacities to contribute 1% or more to the total output of the country (Natrass, 1990).

The result of the intricately woven administrative set-up was that government expenditure on general administration exploded. In particular, expenditure on wages and salaries of government employees rose from 8.4% of GDP in 1980 to more than 35% in 1988, and to over 40% in the 1991/92 financial year (Lachman and Bercusson, 1992; South African Government

Budget Review, 1995). The increases in the wages bill in the early 1990s was attributed to the process of phasing out the disparities in wages and salaries across the different racial groups as well as improving the relative wage levels of the lowest paid civil servants.

The fragmentation of the country into smaller states and provinces also created more bureaucracies and duplication of government functions and services. For instance, agriculture, education, and health, each had 14 ministries and four provincial administrations. There were also 11 ministries of finance, 11 ministries of industrial development, and 12 development corporations, including the Industrial Development Corporation (IDC), and the Development Bank of South Africa (DBSA). The general government budget itself was also handled by different bodies. The budget of the four provinces was handled by the national Treasury, while that of the independent states was handled by the department of Foreign Affairs, and those for the self-governing territories by the Department of Constitutional Development.

As the scope of the administrative functions of the government increased overtime so also was the government's wages bill and expenditure on administration. The increases in the wage bill came about not only as a result of the expansion of the size of the civil service but also as a result of the increase in the remunerative demands. During the review period, the private sector wages increased significantly due wage demands, strikes, and inflation.

To avoid losing its skilled employees to the private sector, the public sector

had to match the private sector wages which contributed to the surge in government expenditure, particularly expenditure in administration.

During the period under review, the government was involved in various activities, aimed at restoring law and order, protection of property (especially properties belonging to the white population), and suppression of its political opponents. Consequently, expenditure on protection services increased significantly. In 1960, 18.2% of expenditure on general administration accounted for was by expenditure on protection services. By 1993, the figure had risen to 28%.

Economic Services

The positive and greater than unity government expenditure elasticity on economic services implies a much faster growth in expenditure in economic services than the growth in national income. This was due mainly to the extensive involvement of the public sector in the industrial activities during the review period. The government's involvement in economic activity, particularly after 1972, took the form of the establishment of several state-owned enterprises (SOEs), such as SASOL, ESKOM, ISCOR, and ARMSCOR, after 1972 (Nattrass, 1990). The predominance of the SOEs in the electricity, gas and water and transport and storage sub-sectors reflected the continued commitment of the successive governments as the major provider of infrastructural investment (Nattrass 1990). Government

expenditure on economic services also expanded due to the continuous increases in subsidies to the mining and agricultural sectors. Financial assistance, taking the form of drought relief and capital assistance, was granted to the mining and agricultural operations by the whites. In real terms, total expenditure on economic services in 1960 was R80.9 million. Of this, 8% went to the transport sector, 74% to agriculture, the industrial sector and the mining sector each received 9%. In 1993, the agriculture's share declined to 26% whereas transport and industry increased their share to 32% and 34% respectively. The mining sector share was 8%.

Government assistance to white farmers in 1965-1970 averaged 19.3% of the net farming income (Natrass, 1990). The state's aid to the agriculture sector came in different forms, with the largest being payments made to stabilise prices paid to the producers of the various products. In 1975, approximately 58% of government aid to agriculture went towards price stabilisation. Other government assistance to the sector went to subsidise the costs of fuel and fertiliser as well as soil conservation and the provision of water (Natrass, 1990).

Government expenditure on economic services in the mid-1960s increased also because of increased allocations to the railways and harbours, housing, and water affairs. During this period the Orange River Project got underway, causing expenditure on water affairs to increase significantly. During this period also, the IDC started developing industries along the

country's borders as well as investing in aircraft and synthetic rubber development. The border industries were established to attract cheap labour from the homelands and self-governing territories to the industrial sector and also to stop the inflow of black people into the big cities of the Republic. The Bantu Trust was also established to develop the Bantu areas (Browne 1983).

Social Services

Our investigation shows the income elasticity of social spending was positive and different from unity, indicating that there was a much faster growth in social spending with each growth in income.

During the period under review, there was a significant increase in government spending on education. This increase in expenditure was also due to the duplication of activities by the various education departments that were created under the apartheid era. It must, however, not be taken for granted that this increase in education spending affected all racial groups equally. Lachman and Bercusson (1992) mention that in 1990 per capita expenditure on white school children was more than four times higher than for blacks. Health spending was also highly skewed in South Africa. The health spending on blacks was one half that on the other population groups.

Another factor that contributed to the increase in social spending was the government's attempt to close the gap between social benefits, especially pensions received by the different racial groups in the 1990s. Spending on

social services increased also because with industrialization comes the demand for health, educational, sanitation, and sporting facilities. So as South Africa gets more industrialized and as more and more blacks move into the urban areas there is an increasing demand for these facilities.

In the early 1990s, expenditure on social services increased significantly as the government attempted to close the gap between welfare payments received by the different racial groups as well as extending the welfare benefits to people who were previously disadvantaged. The functions which benefited most from the surge in social services expenditure were education, social security, and welfare services.

A comparative study by Lachman and Bercusson (1992), reveals that expenditure on education as a percentage of GDP in South Africa substantially exceeded that of the middle-income and of the industrial nations in 1982 and 1987. Further, expenditure on health care as a percentage of GDP significantly exceeded that of the other upper-middle-income countries (SARB 1991). However, they (Lachman and Bercusson) found that expenditure on social security and welfare have lagged behind those of other countries.

The growth of unemployment compensation also contributed to the sharp increases in government expenditure on social security and welfare payments during the 1990s. The rising expenditure on social services was partly driven by demographic and social trends, which could not be adjusted downwards when the revenue performance weakened during the recession of

the early 1990s (Budget Review, 1994).

Defence

The short-run income elasticity of defence expenditure on defence was less than unity during the review period, implying that the growth in defence spending was less than the growth in income. In the long-run, however, the income elasticity of the defence expenditure was significantly different from unity. Therefore, in the long-run expenditure on defence increased faster than the increase in income.

South African defence expenditure has been increasing due mainly to the political instability in the country. In 1960 there was the Sharpeville incident which set a trend for continuous struggles against the apartheid system. The government perceived the opposition to the apartheid system as a threat to the Republic of South Africa and thereby responded by allocating more resources to the defence force and the other security agencies. The Sharpeville incident was followed by another major uprising in 1976 in Soweto. The continued resistance by the political movements to the apartheid system made the government to continue to increase its expenditure on national defence. Another factor to the increased defence spending came with the establishment of the Transkei, Bophuthatswana, Venda, and Ciskei (TBVC) and self-governing states. The Transkei, Ciskei, Venda, and Bophuthatswana governments, established their own defence and other security forces, which

depended on funding from the South African government. The South African defence force itself was also involved in the Angolan war which had serious budgetary implications for the government. All these factors led to the increase in the expenditure on defence in each fiscal year.

Total Non-Defence Government Expenditure

Both in the long-run and in the short-run, total non-defence government spending grew faster than the growth in income. The income elasticities were positive and greater than unity, both in the short run and long run.

Chapter Six

Conclusion and Policy Recommendations

This study set out to investigate the growth of government expenditure in South Africa during the 1960-1993 period. First, the study examines the relative contribution of each of the functional categories to the growth of total government expenditure. Second, it investigates the sources of growth of government expenditure.

Third, it estimates the future growth in government expenditure, given the rate of growth of gross domestic product.

Our findings show that expenditure on administration contributed the most to the growth of total government expenditure throughout the review period, although the contribution turned negative after 1989. The contribution averaged some 70% in 1961-1970, 60% in 1971-80, and negative 6% in 1981-1990. In 1991-1993, the contribution was negative. Following expenditure on administration, in terms of the magnitude of the contribution, was defence, which contributed 15% on average, during 1961-1970. During this period economic services also contributed 15%, and social services 4%. During 1971-80, defence spending contributed 17%, economic services 13%, and social services 9%. Economic services contributed more than defence in 1981-1990, 18% and defence 12%. Social services contribution declined to 6% during the same period. In 1990-93, social services contributed 80%, defence 40%, and economic services, 30%.

The estimated long-run income elasticities of government expenditure were all found to be greater than unity, indicating that government expenditure increases more than proportionally to economic growth. The income elasticity for social services was 4.6%, 2.5% for administration, 1.5% for economic services, and 1.3% to defence spending. The income elasticity for total non-defence spending was also 1.3%. These income elasticities seem to confirm the Wagner's law.

The study also found that private expenditure, expenditure on non-administration, and previous levels of expenditure were the most influential factors that affected government spending on general administration. For the economic services, private spending and past expenditure levels were the important factors. As with general administration, social services spending was influenced significantly by private spending, non-social spending and past levels of social spending.

Defence spending was found to have been influenced largely by previous expenditures on defence, increases in private expenditure, and non-defence spending. Total non-defence spending was influenced largely by private expenditure and defence spending. According to our results, defence spending increased about simultaneously with the other functions i.e. there was no substitution between defence spending and non-defence spending. This is shown by a positive and significant coefficient of defence spending in the results. The private expenditure coefficient show that as incomes increase so will the total non-defence spending.

The sizes of the estimated expenditure elasticities show that the increases in

government spending were higher than the rate of growth of the economy, implying that the government was borrowing to finance some of its expenditure. A significant portion of the increase in current expenditure was attributed to the increases in wages and salaries of public servants. The scope of the administrative functions of the government increased overtime because of the political as well as the administrative divisions that the country experienced during the period under review. The increases in the government's wage bill came about partly as a result of the increase in the size of the civil service, and partly as a result of the increase in the wage demands. There was also an increase in the cost of servicing the public debt. The increase the public debt was due to a combination of factors, including the large size of the debt stock, fluctuations in the exchange rate, and increases in the interest rates. Loan financing has been an important source of revenue to the government. The loans were used initially to fund large scale public sector investment projects as well as the expansion of the public corporations. But when the Revenue and Loan accounts were merged in 1981, borrowed funds were used to finance current expenditure, causing the debt stock to increase.

The size and growth of the government expenditure call for a serious attention to be paid to them. To decrease the expenditure, the government can start by freezing public sector employment and wages as a short-term measure. Second, there could be some auditing of all capital and current government expenditure, so that the expenditures that are found to be inefficient are cut or restructured.

Defence spending has been one of the major contributors to the increases in government expenditure. The government's increasing preoccupation to suppress resistance to the apartheid system and the involvement of the country in the Angolan war were the main reasons behind the increased expenditure. In the 1997/98 budget, cuts were announced for the defence spending. This will go a long way towards ensuring that spending by the defence force is contained.

On the economic services side, transfers to the state owned enterprises, granting of subsidies and other incentives to the mining, agricultural, and manufacturing sectors were largely to blame for the surge in economic expenditure.

The growth in government spending was positively related to the growth in income. During 1960-1969, when the growth in income was 6.4%, all the expenditure functions grew significantly. When the growth in income declined to 4.6% in 1970-1979, the growth in government spending was also positive but less than the increase in the previous period. The same happened during the 1980-1989 period. In 1990-1993, the growth in income was negative and so was the growth in government spending. This result supports the idea that increases in private income leads to people substituting public for private goods and services. The public sector, in satisfying the demand for public goods and services expands and so does its expenditure. The substitution of private by public goods increases the demand for public goods and services. The increased demand for public goods and services has implications for how much the government will spend. Whenever the government is

budgeting, it needs to take into cognisance the level of growth in incomes. The higher the private incomes, the higher the demand for public goods and services. The growth rate of 6% as envisaged in the government's Growth, Employment, and Redistribution strategy (GEAR), coupled with the restructuring of the government expenditures can lead to a better distribution of funds and a significant increase in the resources available for social and economic services.

The study show that generally, the budgetary process for all the expenditure functions was incremental during the review period. One disadvantage of the incremental budget process is that money can be spent for the sake of spending to justify a larger allocation the following financial year. The government therefore needs to put in place a system of checks and balances, if it wants to continue with the incremental budget system, to ensure that funds are not quickly and irresponsibly spent towards the end of the financial year so that functions can argue for more funds since they will have finished their previous allocation. In the white paper on financial management and expenditure budget reform, the department of finance proposes an accrual basis of accounting and budgeting. For this system to work properly, proper accounting procedures must be put in place. Furthermore, the government has to develop and finance the training of its personnel so that it has the necessary skills and capacity to carry out the tasks as efficiently as possible. The medium term expenditure framework will also ensure that provinces and national departments have an idea of what their allocations will be in the next three years. The medium term

expenditure framework will also help to eliminate the problem of budgeting for capital expenditure which in some instances ends up creating roll-overs.

It is imperative to restructure the public sector. The process of rationalising the government departments is already underway. What is required is for it to be more focused and for targets to be set. The rationalisation must be aimed at reducing the wages and salaries of the public servants. The important decision that the government will confront in this regard is where to cut the public service, i.e. should the cut affect the bottom or the top of the civil service. Either way there are trade-offs to be incurred. For instance, cutting the wage bill by removing the big bunch at the lower income level might not save the government much compared to what can be saved if a few servants at the top are retrenched. However, in deciding who to retrench, the skills of the workers and efficiency considerations need to be taken into account. The public service needs to be made much more efficient and avoid unnecessary bureaucracies. Efficiency can be ensured by having the right number of civil servants who have the right skills and paid the market rate salaries. Hopefully the duplication of activities will be eliminated with the merging of the various departments, of the former republic, TBVC states and the self-governing territories. Efficiency standards must also be set for the civil service and more of the ghosts employees be removed from the civil service records. The government of national unity appointed a Presidential Review Commission to look into how to restructure the public service and how to make it to be more efficient. This was positive step.

Unfortunately this commission experienced problems and was unable to operate.

There is a need to restructure the government spending priorities. Government expenditure on housing, health care, education, and other forms of investment spending is desirable than consumption spending. Government expenditure should aim at creating a demand for new goods and services than increases in the public sector pay. Spending on imported goods should be avoided whenever possible since it weakens the balance of payments without necessarily stimulating domestic economic activity. Expansion in government investment expenditure must not be done at the expense of private investment as this may hamper economic growth and cause greater unemployment. Excessive spending on security services must be guided against.

Overspending should be avoided as much as possible, and current spending should only be financed from current revenue and capital spending from savings and from borrowing. Private sources of funding must be mobilised. Duties that can be performed better or services that can be provided by the private sector efficiently but are currently being provided by the government should either be discontinued or be transferred to the private sector. Those functions that are properly the responsibility of the government must be carried out as efficiently and as cost-effectively as possible.

In the white paper on financial management and expenditure budget reform, the department of finance proposes a process whereby the planning and budgeting processes are linked. If this can be achieved, fiscal policy and budgeting will move in the same direction towards attaining a common goal. In the past the planning and

budgeting processes were not linked, as a result of that, the two were sometimes conflicting and that is one of the reasons why the economy could not be controlled.

**APPENDIX 1: COMPOSITION OF GOVERNMENT EXPENDITURE,
1960 - 1993**

Year	in million rands		As % of Gross Domestic Product	
	Nominal	Real	Nominal	Real
1960	598.9	85.6	12.0	9.0
1961	651.9	91.8	12.1	9.2
1962	718.2	98.4	12.4	9.4
1963	804.3	109.0	13.0	10.0
1964	862.0	114.9	12.3	9.5
1965	1008.2	129.3	13.1	10.1
1966	1074.9	132.7	13.0	10.0
1967	1242.3	150.0	13.3	11.0
1968	1907.4	224.4	19.0	15.1
1969	1993.4	229.1	17.5	14.5
1970	2348.8	255.3	19.0	15.4
1971	2621.7	267.5	19.0	15.4
1972	3414.9	328.4	22.0	19.0
1973	4147.8	363.8	22.0	20.0
1974	4685.5	369.0	20.0	19.3
1975	5877.1	408.1	22.1	21.0
1976	7659.6	478.7	25.5	24.0
1977	8768.3	492.6	26.4	24.1
1978	9663.7	488.1	25.3	23.2
1979	10979.0	490.1	24.0	22.4
1980	12334.4	483.7	20.1	21.0
1981	15509.6	527.5	22.0	22.0
1982	17205.2	510.5	21.4	21.0
1983	21041.3	557.0	23.0	23.4
1984	24526.1	581.2	23.0	23.0
1985	28633.7	581.1	23.3	23.0
1986	34332.9	590.0	24.0	23.3
1987	41341.4	612.0	25.0	24.0
1988	59200.2	777.0	29.5	29.0
1989	74275.8	850.0	31.0	30.4
1990	98095.0	981.0	35.5	35.5
1991	92421.6	802.0	30.0	29.4
1992	110905.0	844.0	32.4	32.0
1993	133167.0	924.1	35.0	34.4

SOURCE: CENTRAL STATISTICAL SERVICES (VARIOUS ISSUES)

**APPENDIX 2: EXPENDITURE ON GENERAL ADMINISTRATION,
1960 - 1993**

Year	in million rands		As % of Total Government Expenditure		As % of Gross Domestic Product	
	Nominal	Real	Nominal	Real	Nominal	Real
1960	278.2	39.7	46.5	46.4	5.4	4.1
1961	311.8	43.9	48.0	48.0	6.0	4.4
1962	340.3	46.6	47.4	47.4	6.0	4.4
1963	359.6	48.6	45.0	45.0	6.0	4.3
1964	389.4	51.9	45.2	45.2	5.5	4.3
1965	435.7	55.9	43.2	43.2	6.0	4.4
1966	490.4	60.5	45.6	45.6	6.0	5.0
1967	560.0	67.5	45.1	45.0	6.0	5.0
1968	989.2	116.4	52.0	52.0	10.0	8.0
1969	1161.9	133.6	58.3	58.3	10.2	8.4
1970	1414.7	153.8	60.2	60.2	11.3	9.2
1971	1559.6	159.1	59.5	60.0	11.3	9.1
1972	2147.0	206.4	63.0	63.0	14.0	12.0
1973	2498.8	219.2	60.2	60.3	13.0	12.0
1974	2983.8	234.9	64.0	64.0	13.0	12.3
1975	3649.0	253.4	62.1	62.1	14.0	13.0
1976	4259.6	266.2	56.0	56.0	14.1	13.2
1977	4929.7	276.9	56.2	56.2	15.0	14.0
1978	5444.2	275.0	56.3	56.3	14.2	13.1
1979	6346.8	283.3	58.0	58.0	14.0	13.0
1980	7244.4	284.1	59.0	59.0	12.0	12.1
1981	7944.5	270.2	51.2	51.2	11.2	11.1
1982	10024.8	297.5	58.3	58.3	12.4	12.1
1983	11783.8	311.7	56.0	56.0	13.0	13.1
1984	14204.6	336.6	58.0	58.0	13.2	13.3
1985	17724.3	361.0	62.0	62.1	14.4	14.3
1986	20645.7	354.7	60.1	60.1	14.4	14.0
1987	25780.7	381.4	62.4	62.3	15.4	15.0
1988	31260.9	410.2	53.0	53.0	16.0	15.2
1989	38645.0	442.2	52.0	52.0	16.0	16.0
1990	19726.4	197.3	20.1	20.1	7.1	7.2
1991	48731.4	422.6	53.0	53.0	16.0	15.5
1992	36139.0	275.0	33.0	33.0	10.5	10.4
1993	42269.0	293.3	32.0	32.0	11.0	11.0

SOURCE: CENTRAL STATISTICAL SERVICES (VARIOUS ISSUES)

**APPENDIX 3: GOVERNMENT EXPENDITURE ON ECONOMIC SERVICES,
1960 - 1993**

Year	in million rands		As % of General Government Expenditure		As % of Gross Domestic Product	
	Nominal	Real	Nominal	Real	Nominal	Real
1960	80.9	11.6	14.0	14.0	2.0	1.2
1961	83.7	11.8	13.0	13.0	1.5	1.2
1962	86.1	11.8	12.0	12.0	1.5	1.1
1963	97.1	13.1	12.1	12.0	1.5	1.2
1964	111.7	14.9	13.0	13.0	2.0	1.2
1965	122.4	16.0	12.1	12.4	2.0	1.2
1966	127.0	16.0	12.0	12.1	1.5	1.2
1967	152.6	18.4	12.3	12.3	2.0	1.3
1968	326.6	38.4	17.1	17.1	3.2	3.0
1969	330.9	38.0	17.0	17.0	3.0	2.4
1970	388.8	42.3	17.0	17.0	3.1	2.5
1971	464.9	47.4	18.0	18.0	3.4	3.0
1972	552.2	53.1	16.2	16.2	4.0	3.0
1973	733.6	64.4	18.0	18.0	4.0	3.5
1974	761.7	60.0	16.3	16.3	3.2	3.1
1975	1008.5	70.0	17.2	17.2	4.0	4.0
1976	1438.9	90.0	19.0	19.0	5.0	4.5
1977	1528.2	85.9	17.4	17.4	5.0	4.2
1978	1552.3	78.4	16.1	16.1	4.1	4.0
1979	1821.7	81.3	17.0	17.0	4.0	4.0
1980	1929.4	75.7	16.0	16.0	3.1	3.2
1981	2188.2	74.4	14.1	14.1	3.1	3.1
1982	2308.9	68.5	13.4	13.4	3.0	3.0
1983	2606.6	69.0	12.4	12.4	3.0	3.0
1984	3004.6	71.2	12.3	12.3	3.0	3.0
1985	3265.3	66.5	11.4	11.4	3.0	3.0
1986	3058.6	52.6	9.0	9.0	2.1	2.1
1987	3567.6	52.8	9.0	9.0	2.1	2.1
1988	6199.9	81.4	10.5	10.5	3.1	3.0
1989	6894.3	78.9	6.3	9.3	3.0	3.0
1990	13533.4	135.3	14.0	14.0	5.0	5.0
1991	7921.6	68.7	9.0	9.0	3.0	2.5
1992	14955.0	113.8	14.0	13.5	4.4	4.3
1993	22231.0	154.3	17.0	17.0	6.0	6.0

SOURCE: CENTRAL STATISTICAL SERVICES (VARIOUS ISSUES)

**APPENDIX 4: GOVERNMENT EXPENDITURE ON SOCIAL SERVICES,
1960 - 1993**

Year	in million rands		As % of General Government Expenditure		As % of Gross Domestic Product	
	Nominal	Real	Nominal	Real	Nominal	Real
1960	201.3	28.8	34.0	34.0	4.0	3.0
1961	210.6	30.0	32.3	33.0	4.0	3.0
1962	219.9	30.1	31.0	31.0	4.0	3.0
1963	222.9	30.1	28.0	28.0	3.5	3.0
1964	245.7	32.8	28.5	28.5	3.5	3.0
1965	260.8	33.4	26.0	26.0	3.4	3.0
1966	278.5	34.4	26.0	26.0	3.3	3.0
1967	317.5	38.2	26.0	25.5	3.4	3.0
1968	349.3	41.1	18.3	18.3	3.4	3.0
1969	255.0	29.3	13.0	13.0	2.2	2.0
1970	286.6	31.2	12.2	12.2	2.3	2.0
1971	331.6	33.8	13.0	13.0	2.4	2.0
1972	395.3	38.0	12.0	12.0	2.5	2.2
1973	413.1	36.2	10.0	10.0	2.1	2.0
1974	503.9	40.0	11.0	11.0	2.1	2.1
1975	621.0	43.1	10.6	11.0	2.3	2.2
1976	735.5	46.0	10.0	10.0	2.5	2.3
1977	847.4	47.6	10.0	10.0	2.5	2.3
1978	954.6	48.2	10.0	10.0	2.5	2.3
1979	1076.8	48.1	10.0	10.0	2.4	2.2
1980	1277.2	50.1	10.4	10.4	2.1	2.1
1981	1583.2	54	10.2	10.2	2.2	2.2
1982	2000.5	59.4	12.0	12.0	2.5	2.4
1983	2413.2	63.8	11.5	11.5	3.0	3.0
1984	2798.8	66.3	11.4	11.4	3.0	3.0
1985	3422.2	70.0	12.0	12.0	3.0	3.0
1986	5173.9	89.0	15.1	15.1	4.0	3.5
1987	6247.7	92.4	15.1	15.1	4.0	4.0
1988	12223.5	160.4	21.0	21.0	6.1	6.0
1989	14395.0	164.7	19.4	19.4	3.0	6.0
1990	40472.1	404.7	41.3	41.3	15.0	15.0
1991	21133.6	183.3	23.0	23.0	7.0	7.0
1992	48412.0	368.4	44.0	44.0	14.1	14.0
1993	57938.0	402.1	43.5	43.5	15.1	15.0

SOURCE: CENTRAL STATISTICAL SERVICES (VARIOUS ISSUES)

APPENDIX 5: GOVERNMENT EXPENDITURE ON DEFENCE, 1960 - 1993

Year	in million rands		As % of General Government Expenditure		As % of Gross Domestic Product	
	Nominal	Real	Nominal	Real	Nominal	Real
1960	38.6	5.5	6.4	6.4	1.0	1.0
1961	45.8	6.5	7.0	7.1	1.0	1.0
1962	71.9	9.8	10.0	10.0	1.2	1.0
1963	124.7	17.0	15.5	16.0	2.0	1.5
1964	115.3	15.4	13.4	13.4	2.0	1.3
1965	189.2	24.3	19.0	19.0	2.5	2.0
1966	179.0	22.1	17.0	17.0	2.1	2.0
1967	212.1	26.0	17.1	17.3	2.3	2.0
1968	242.2	28.5	13.0	13.0	2.4	2.0
1969	236.9	27.2	12.0	12.0	2.1	2.0
1970	258.4	28.1	11.0	11.0	2.1	2.0
1971	258.9	26.4	10.0	10.0	2.0	1.5
1972	320.3	31.0	9.4	9.4	2.1	2.0
1973	344.2	30.2	8.3	8.3	2.0	2.0
1974	425.3	33.5	9.1	9.1	2.0	2.0
1975	696.9	48.4	12.0	12.0	3.0	2.5
1976	1087.2	68.0	14.2	14.2	4.0	3.4
1977	1384.4	78.0	16.0	16.0	4.2	4.0
1978	1605.7	81.1	17.0	17.0	4.2	4.0
1979	1669.5	74.5	15.2	15.2	4.0	3.4
1980	2133.9	84.0	17.3	17.4	3.5	4.0
1981	2514.1	86.0	16.2	16.3	3.5	3.5
1982	2871.5	85.2	17.0	17.0	4.0	3.5
1983	3194.9	84.5	15.2	15.2	3.5	3.5
1984	3385.5	80.2	14.0	14.0	3.2	3.2
1985	3997.8	81.4	14.0	14.0	3.2	3.2
1986	4475.0	77.0	13.0	13.1	3.1	3.0
1987	5724.1	85.0	14.0	14.0	3.4	3.3
1988	9264.8	122.0	16.0	16.0	5.0	4.5
1989	11163.6	127.7	15.0	15.0	5.0	5.0
1990	10852.2	108.5	11.1	11.1	4.0	4.0
1991	10236.2	89.0	11.1	11.1	3.3	3.3
1992	11399.0	87.0	10.3	10.3	3.3	3.3
1993	10729.0	74.5	8.1	8.1	3.0	3.0

SOURCE: CENTRAL STATISTICAL SERVICES (VARIOUS ISSUES)

**APPENDIX 6: ECONOMIC COMPOSITION OF GENERAL GOVERNMENT
EXPENDITURE, 1960 - 1993.**

Year	AS % OF GENERAL GOVERNMENT EXPENDITURE				AS % OF GROSS DOMESTIC PRODUCT		
	Goods And Services	Interest Payment	Other*	Current Expenditure	Capital Expenditure	Current Expenditure	Capital Expenditure
1960/61	56.0	4.2	17.0	77.2	22.8	12.8	3.8
1961/62	56.0	4.7	18.0	78.2	21.2	13.4	3.6
1962/63	59.0	4.4	16.0	79.2	20.8	14.1	3.7
1963/64	59.0	4.2	13.0	75.4	24.6	13.5	4.4
1964/65	55.0	3.6	14.0	72.4	27.6	14.4	5.5
1965/66	56.0	4.3	11.0	70.8	29.2	14.1	5.8
1966/67	55.0	4.4	12.0	71.3	28.7	15.0	6.0
1967/68	50.0	4.7	15.0	69.4	30.6	15.2	6.7
1968/69	49.0	5.5	9.0	63.7	36.3	14.3	8.2
1969/70	53.0	7.5	10.0	70.9	29.1	15.0	6.2
1970/71	58.0	6.8	9.0	73.3	26.7	15.4	5.6
1971/72	53.0	5.7	15.0	74.3	25.7	18.5	6.4
1972/73	53.0	6.8	16.0	75.8	24.2	17.9	5.7
1973/74	47.0	6.2	11.0	63.6	36.4	15.7	9.0
1974/75	50.0	6.5	11.0	67.2	32.8	15.2	7.4
1975/76	50.0	5.6	11.0	65.8	34.2	17.4	9.0
1976/77	51.0	5.7	11.0	67.7	32.3	19.3	9.2
1977/78	51.0	6.0	12.0	68.6	31.4	20.8	9.5
1978/79	49.0	6.8	14.0	70.4	29.6	21.4	9.0
1979/80	49.0	11.8	8.0	68.4	31.6	19.2	9.9
1980/81	52.0	10.7	10.0	72.5	27.5	17.5	6.6
1981/82	51.0	9.7	9.0	69.4	30.6	18.0	8.0
1982/83	52.0	13.2	7.0	72.7	27.3	19.8	7.4
1983/84	55.0	13.1	9.0	77.4	22.6	21.9	6.4
1984/85	55.0	14.7	9.0	79.5	20.5	22.0	5.7
1985/86	57.0	15.4	20.0	92.4	7.6	26.6	2.2
1986/87	58.0	14.0	19.0	90.8	9.2	26.7	2.7
1987/88	60.0	12.8	19.0	91.4	8.6	27.5	2.6
1988/89	58.0	13.4	18.0	89.8	10.2	27.3	3.1
1989/90	56.0	15.1	15.0	86.4	13.6	27.4	4.3
1990/91	62.0	13.9	18.0	94.4	5.6	27.8	1.7
1991/92	63.0	15.2	16.0	94.3	5.7	28.5	1.7
1992/93	61.0	15.2	15.0	91.6	8.4	31.0	2.8
1993/94	57.0	16.2	15.0	88.9	11.1	31.8	4.0

SOURCE: 1. Public Finance Statistics of South Africa, 1946 - 1993

2. South Africa's National Income Accounts, 1946 - 1993
3. SARB Quarterly Bulletin (various issues)
4. Government of South Africa, Budget Review (various issues)

* includes subsidies and other transfers

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