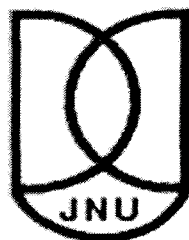# A Study on the Structure of Central Government Expenditure in India : 1998-99 to 2010-11

Dissertation submitted to Jawaharlal Nehru University
in partial fulfillment of the requirements
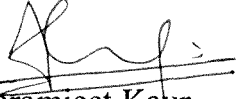*for the award of the degree of*

MASTER OF PHILOSOPHY

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INDIA
2011

DECLARATION

This is to certify that the dissertation entitled **'A Study on the Structure of Central Government Expenditure in India : 1998-99 to 2010-11'** submitted by me is in partial fulfillment of the requirement for the award of the degree of Master of Philosophy of Jawaharlal Nehru University. This dissertation has not been previously submitted for the award of any other degree in this or any other University and is my own work.

Karamjeet Kaur

CERTIFICATE

We recommend that this dissertation be placed before the examiner for the evaluation.

Prof. Deepak Nayyar
(Supervisor)

Prof. Arun Kumar
(Chairperson)

All that I' am and have done, that can be considered good, is because of my guru. All failure is mine...

Dedicated to

my beloved Master

Shri Parthasarthi Rajagopalachari

And my Parents

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Abbreviations

AER	Agriculture sector Expenditure on Revenue account
AEC	Agriculture sector Expenditure on Capital account
CE	Capital Expenditure
CI	Capital Index
EAI	Expenditure Allocation Index
EU	European Union
FRBM	Fiscal Responsibility and Budget Management
FRL	Fiscal Responsibility Legislation
GDP	Gross Domestic Product at market prices (*in current prices*)
GFD	Gross Fiscal Deficit
GOI	Government of India
HDI	Human Development Index
IE	Infrastructure Expenditure
IMF	International Monetary Fund
IP	Interest Payments
M	Imports
PSBR	Public Sector Borrowing Requirement
PD	Primary Deficit
PQLI	Physical Quality of Life Index
RBI	Reserve Bank of India
RE	Revenue Expenditure
RI	Revenue Index
SSC	Social Sector Expenditure on Capital account
SSR	Social Sector Expenditure on Revenue account
TE	Total Expenditure
TEI	Total Expenditure Index
UNDP	United Nations Development Programme
UT	Union Territories
X	Exports

Chapter 1

Introduction

1.1 Introduction

The occurrence of fiscal crises in many countries in the 1980s has led to increased concerns about prudent fiscal management (WDR, 1988). This is also evident from the introduction of fiscal responsibility legislations (FRLs) in the recent years in many developed as well as developing countries. While countries like Japan and US have adopted a less restrictive FRL, others like Australia and New Zealand have adopted a more comprehensive plan for fiscal consolidation (Lienert, 2010).

In 1992, the European countries signed the Maastricht Treaty which required a commitment towards greater fiscal discipline for entry into the European Union, popularly known as the 'Convergence Criteria'. The convergence conditions for the members were that, one, the country's overall budget deficit for each fiscal year must be below 3% of the GDP, and two, the country's stock of public debt must be equal to or less than 60% of the GDP. UK has been following the 'Golden Rule' since 1997 which requires that the revenue deficit should be brought down to zero. Canada has also been on the forefront of instituting a rigorous expenditure review process.

In India, fiscal discipline was followed as an unwritten rule for a long period since independence. The revenue expenditures were always within the limits of the revenue receipts and borrowings were used primarily to finance capital expenditures. However, the decade of 1980s was a period of unprecedented fiscal profligacy which culminated in a balance of payments crisis by the end of the decade. In order to salvage the economy

from the crisis, at that time, the government introduced a rigorous fiscal consolidation process as a part of the stabilization and structural adjustment programme throughout the 1990s (Nayyar,1996). In 2004-05, the government of India enacted the Fiscal Responsibility and Budget Management Act. This legislation, succinctly, mandated that the central government deficits should be brought down to a certain limit within a given time period and the role of the Central Bank, in financing the government's deficits must be limited.

In the wake of the recent Fiscal Responsibility Legislations, concerns have been raised from various quarters, on the impact of the fiscal consolidation programme on certain 'soft expenditures' (Ramakumar, 2008). Fiscal consolidation ideally requires the government to increase its revenues and cut-down on the wasteful expenditures. On the contrary, in a recent study based on the changes in the composition of expenditure in India from 1950-51 to 2005-06, Ramakumar(2008), notes that, in various studies based on the experiences of fiscal consolidation by different countries, the expenditures of the government, especially social and economic sector expenditures bore the brunt of adjustment. These expenditures, he notes, contribute towards increasing the productive capacity of the economy in the form of human and physical capital formation and an increase in the allocation of these expenditures benefits the economy in the long-run. These include expenditure on areas such as the social sectors which covers health, education, rural development, and infrastructure sectors which primarily cover power, transport and communication, and others like agriculture, irrigation etc. Given the importance of these expenditures, despite fiscal consolidation, it is important to ensure adequate allocation of expenditure towards these categories.

Given the continuous emphasis of the government in India, on greater fiscal discipline and fiscal reforms, it is pertinent to track the changes in the composition of expenditure of the government. This object has provided the motivation to undertake this study.

The present study roughly covers the second round of the fiscal consolidation in India. From 2004-05 onwards, it was noted that the fiscal deficit of the government came down considerably and so did the revenue deficits. The GFD as a percentage of GDP stood at 5.6% in 2000-01, 6.2% in 2001-02 and 5.9% in 2002-03, in the period preceding the FRBM. After rising marginally to 4.1% in 2005-06, from 4% in the previous year, it declined continuously over the years. In 2005-06 it was down to 3.5% of the GDP in the year 2006-07 and further down to 2.7% of the GDP in the year 2007-08. This reduction was faster and greater than what had been envisaged in the FRBM. In the year 2008-09, however, the GFD surged to 6% of the GDP and further up to 6.7% in the next year 2009-10, due to the financial crisis that started in the late 2008. Similarly, the revenue deficit also came down considerably from 2003-04 to 2007-08 and rose thereafter.

Although the FRBM Act came into effect from 2004-05, the concerns regarding the deteriorating fiscal situation and the unsustainability of debt that led to the enactment of the FRBM emerged in the late 1990s[1] . Thus, the present study begins the analysis from a period before the FRBM. In particular, the starting point has been chosen to be 1998-99 because in this year, the government announced the 5th Central pay revisions. Pay revisions primarily relate to the upward revisions of the salaries of the government employees which is a revenue expenditure of the government. It was noted that, revenue expenditure in the year 1998-99 increased by around 21% from that in 1997-98. Given

the size of revenue expenditure and its preponderant share in the total expenditure in India, an increase in salaries in the government sector which affects the revenue expenditure is bound to have a serious impact on the government's fiscal situation. Thus, the year 1998 has been taken as the starting point of the time series analysis of the changes in the expenditure introduced by the government.

The present study is thus focused on analyzing whether or not, in the period from 1998-99 to 2010-11, there occurred an improvement in the expenditure mix of the annual budgetary outlays of the central government in India.

1.2 Questions

In order to understand the wider context in which the study is situated it is important to ask as to what has been the fiscal policy stance of the government in the period preceding the enactment of the FRBM in India? Further, for an analysis of the structure of expenditure, first of all it is important to know as to how is the government's expenditure classified into different categories by the government? This leads to the question that, whether all types of expenditures should be compressed for achieving a budgetary balance or is there some sort of classification that should to be observed in such an expenditure reduction? In the context of the recent legislative changes towards greater fiscal discipline in India, it is pertinent to ask whether there has been an improvement or deterioration in the composition of expenditure. Related to this is the question of what is the use and applicability of the different types of government deficits that are currently in use?

1.3 Objectives

In the light of the discussion above the study aims at achieving the following objectives:

1. To study the classification of expenditure of the government and trace the trend in their broad categories from 1998-99 to 2010-11.

2. To study the conceptual differences between different types of government deficits.

3. To construct a summary measure in order to provide a consolidated picture of the changes(if any) in the structure of the Central government's expenditure in India.

1.4 Scope

The study is primarily focused on an analysis of the "allocation" of expenditures and does not look into the "impact" of such an allocation on the economy, in the form of outcomes like, poverty alleviation, employment generation etc. While it is important to ascertain the impact of the expenditure allocation, such a detailed analysis, however, cannot be covered in the limited space of this study. Also, the present work will cover only the Central government, although such an exercise must be undertaken for all the levels of government, particularly State governments, taken together. While a consolidated study on all the levels of government would have been more representative, it was not undertaken for the fact that the study basically relates to the period around the FRBM Act and the ensuing changes in the expenditure mix, which primarily concerns the central government's budgetary balance.

1.5 Structure

The study is organized in the following manner. The first chapter gives an introduction and an overview of the entire work undertaken in this study. The second chapter sets out the wider context in which the study is situated along with a survey of literature in India on the issue under study. This chapter also outlines the broad taxonomy of expenditures followed by the government and a preliminary analysis of trend in the main expenditure heads from 1998-99 to 2010-11. This has been done to complete the backdrop of the study including its context, need and the concepts that have been made use of in the study. The third chapter studies the conventional measures of government deficits, their meaning and their macroeconomic significance. An attempt has been in this chapter to develop a case for using a composite index, as a summary measure, in studying the expenditure allocation over a period of time. The fourth chapter covers a detailed discussion on the concept and the applicability of composite indices in general and the 'Expenditure Allocation Index' developed in the present study. A summary of the results on the composite index and reflections on the findings form the last part of this chapter. The fifth chapter summarizes the entire work and draws together some conclusions that emerge.

Chapter 2

The Structure of Expenditure

2.1 Introduction

The central theme of this study is to explore the composition of expenditure of the central government in India from 1998-99 to 2010-11. The main objective is to analyze whether or not, over the given period, the composition of expenditure showed any signs of improvement. Before beginning to analyze that, at the outset, it is important to carve out the context in which the study is situated. While the analysis here revolves around the period of the FRBM, it is important to note that the process of fiscal consolidation in India began from the early 1990s onwards. The macroeconomic imbalances in the 1980s, the resultant crisis in the mid 1991 and the ensuing economic reforms in the early 1990s are the starting point for understanding the context in which the study is placed. This discussion is necessary to understand the concerns regarding the sustainability of debt at the first signs of an increase in deficits, in the late 1990s, which led to the FRBM Act.

Apart from a discussion on the context, a survey of literature on the existing studies on the analysis of the composition of expenditure is necessary in the beginning, in order to identify and bring forth the aspects that have provided the scope for undertaking this study. Also, in outlining the background of the study, a basic understanding of the concepts used in the study alongwith a brief discussion on the general direction and pattern of the central government's expenditure in India in the said period will make the picture complete. A conceptual clarity on the classification of expenditure is necessary because the entire work is based on the conventional classification of expenditure

followed by the Central government in India and thus a clear understanding of the same is essential in the beginning itself. A preliminary analysis of the trend in the broad categories of expenditure over the period of study will also be presented here.

On the above stated lines, the current chapter thus begins with a section on the history of fiscal policy stance of the Government of India starting roughly from the decade of the 1980s. This is followed by a review of the existing literature on the studies in India on the composition of expenditure in the period from the early 1980s to the present. The next two sections that follow cover, first, the taxonomy of expenditure followed by the government and then, an outline of the trend in the broad categories of expenditure. The last section concludes.

2.2 Historical Context of the study

In India, fiscal situation never posed a serious problem and for long, there were never concerns about the sustainability of the government's debts. The current expenditure was largely met through the current receipts and borrowings were channelized for financing capital expenditure (Bagchi, 2006). A discernible change in an otherwise fiscally prudent macroeconomic environment occurred in the decade of 1980s when a huge divergence in the government's spending and income was noted. It was then, that the concerns regarding the sustainability of the public debts in India were raised for the first time (RBI, 2005). During this period it was noted that the government undertook massive public expenditure without ensuring a commensurate increase in its revenues. It has been argued that it was this fiscal profligacy which led to the balance of payments crisis in mid-1991(Nayyar, 1996).

Elaborating on the causes and consequences of the Balance of Payments crisis Nayyar (1996) has pointed-out that in order to sustain the high government deficits in the 1980s, the government resorted to 'borrowings' from both domestic and foreign sources[2]. For a long time, the government could easily borrow from the central bank at a low rate of interest and also borrow from external sources with ease due to its high credit worthiness. However, this could not be sustained for long and spilled-over to the country's balance of payments account. The relation between the two can be understood with the help of a simple national income identity *ex-post*, that an unabated growth of fiscal deficit inevitably spills-over to the country's balance of payments account [3] . For a large part of 1980s, the government used current account deficit (M-X) for financing the excess of investment over saving, for the economy in general and the excess of expenditure over income for the government in particular. This underlying macroeconomic imbalance, in the form of growing fiscal deficits every passing year, aggravated the current account deficit and made the economy vulnerable to a minor exogenous shock in the form of Gulf-crisis in the mid-1991.

In order to steer the economy out of this crisis, the government adopted a two-pronged strategy of macroeconomic stabilization and structural adjustment. While the stabilization programme aimed at short-term demand-management through a correction of imbalance on the balance of payments front and a reduction in the inflationary pressures, the structural adjustment programme on the other hand, was a long-term reform process to augment the supply-side by removing the structural rigidities from the economy and fostering economic growth and efficiency.

An important strategy of the stabilization programme was to reduce the fiscal deficit. The choice of this instrument came from the orthodox economic principle that in order to reduce the level of aggregate demand in the economy, a contractionary fiscal and monetary policy along with a devaluation was necessary. The structural adjustment process also, with a gamut of reforms, basically aimed at decreasing the government's role and increasing the private sector's role in the economy. The latter was to be guided by the market principles. In pursuance of this strategy, the government brought down the gross fiscal deficit considerably from 8.4% of the GDP in 1990-91 to about 6.7% of the GDP in 1994-95 and to 5.2% of the GDP by 1996-97.

The period of the present study, from 1998-99 to 2010-11 was marked by a yet another important policy reform by the government of India in the form of 'Fiscal Responsibility and Budget Management Act. The FRBM bill was passed in the year 2003 and in 2004 the FRBM Act in its present form, was enacted. The FRBM Act required that the central government must reduce the revenue deficits by 0.5% or more of the GDP, at the end of each financial year beginning from 2004-05, so as to cut-down the revenue deficit to zero by the end of March 31st, 2008[4]. FRBM Act also required that the fiscal deficit be reduced by an amount equivalent to 0.3% or more of the GDP, at the end of every financial year and thus bring it down to 3% of the GDP by the end of March 31st, 2008. The main objectives of the FRBM Act were to make the budgetary operations sustainable and to further inter-generational equity, macroeconomic stability and economic growth.

The need for the enactment of the FRBM Act arose from the concerns about the sustainability of growing public debt owing to the rising government deficits. This,

however, has been an issue of intense debate. The proponents of FRBM Act have argued on the basis of studies based on the government's budget constraint that the growth in public debts in India would become unsustainable unless the government resorted to greater fiscal discipline. Most of the recent studies draw from the studies that emerged in the late 1980s and early 1990s, that pointed at the unsustainability of debts in India at that time (Rangarajan, 1989; Buiter and Patel, 1992). Among the recent studies on sustainability, Rastogi (2004) ,Pinto and Zahir (2004) Lahiri and Kannan (2004) had contended that there is a need for putting a limit on the level of deficits. On the other hand, there have been arguments against such austerity measures. Bhaduri(2006), in analyzing the context of the promulgation of the FRBM Act, calls it a 'strategy-driven' move and not a 'crisis-driven' one. Rebutting the claim that the current fiscal situation is unsustainable, Bhaduri argues that the legislation was brought into force at a time when the Indian economy did not face any payments crisis, had a comfortable foreign exchange position and a booming stock market. Patnaik (2006) has argued that the prime motive behind the FRBM legislation has been the emergence of the phenomenon of 'globalized finance' which is inherently opposed to 'expenditure activism' of the state. The FRBM Act, it was noted was enacted not in response to a major crisis but in the wake of the inability of the government to meet the yearly deficit targets set in the annual budget (Rakshit , 2001).

To summarize , it may be noted that, the history of India's fiscal policy has thus been marked by two watersheds. One is the Economic Reforms in 1991 and the other is the Fiscal Responsibility and Budget Management Act in 2004. Both these events were a fall-out of a growing fiscal imbalance in the economy. While the former was more

serious in terms of the size of the deficits and adverse macro-economic imbalance it caused, the latter, was more pre-emptive in nature, in response to the first signs of fiscal deterioration. Both these events ushered-in a process of fiscal consolidation in India. It would be noted in the next section that the economic reforms led to a deterioration in the quality of expenditure through-out the 1990s. The objective of this study is to analyze whether or not a similar rejig in the structure of expenditure occurred in the case of the latter.

2.3 Literature Review

Since the beginning of the economic reforms in India and the ensuing changes in the country's public finance due to the stabilization-cum-structural adjustment programme, there have emerged numerous studies, analyzing the allocation of central government's expenditure. During the 1990s, as the government sought to reduce the fiscal deficit, there occurred certain discernible changes in the expenditure composition of the government. It was noted that, an overarching emphasis on reducing the fiscal deficit led to a massive reduction in public expenditure in crucial areas like infrastructure, social services and poverty alleviation programmes (Nayyar, 2001). More importantly, most of the reduction was on expenditures which were capital in nature. This, it has been argued was primarily because of the ease in deferring or terminating investment projects as compared to the revenue expenditure like salaries, pensions etc which are obligatory in nature and thus cannot be reduced so easily. Rao(2002) in a study on the trend in developmental expenditure concludes that from 1990-91 to 2000-01 , while fiscal deficits as a percentage of GDP decreased, there did not ,however, occur any *qualitative*

improvement in the total expenditure. A similar study on the qualitative aspect of expenditure by the central government by Bhide and Panda (2002) for a longer period from 1980-81 to 2000-01 reveals that the quality of central government's budgets deteriorated over the years, when the quality of expenditure is factored-in. This comprehensive study takes into account the quality of both revenue and capital expenditure separately. Detailed studies on the changes in social sector expenditure specifically, by Dev(2002) and Joshi(2006), have pointed out at the worsening of the allocations in this area in the 1990s. Dev(2002) finds that as compared to the 1980s, the social sector expenditure in the 1990s decreased as a percentage of the GDP and total expenditure. It was also observed that the capital expenditure relative to total expenditure decreased and the non-developmental expenditure relative to total expenditure increased in this period

For the decade of 2000s too, which is the period that covers the second-round of fiscal consolidation, there are a number of commentaries on the changes in the structure of the government's yearly outlays following the yearly announcements of the budgets[5]. Most of these studies are centered around the discussions on the yearly budgets of the central government. A comprehensive study by Ramakumar(2008) on the composition of expenditure of both Central and the States covers a long period from 1950-51 to 2005-06 with a special emphasis on the 1980s and 1990s. The study notes that, as compared to the 1980s, there was a marked deterioration in the real per capita allocations on social sector expenditure and human priority expenditure in the 1990s and 2000s. This study, however, does not cover the post-FRBM period. A study for the recent period beginning from 1991-92 to 2009-10 on the expenditure composition of the central government has been

undertaken by Lalvani (2011). This study divides the entire period into pre-FRBM and post-FRBM period which is from 1991-92 to 2003-04 and 2004-05 to 2009-10 respectively and looks into the central government allocation towards certain key expenditure categories like social and economic services. It has been pointed-out in the study that there was an improvement in the social sector expenditure in the post-FRBM period but the overall level remained low. It was also found that the share of expenditure on economic services in the GDP was lower in the post-FRBM period as compared to the first half of the 1990s. The study concludes that the composition of expenditure in terms of providing a "big-push" to developmental expenditure suffered in the post-FRBM period. However, the social sector expenditure in this study is limited only to education and health and the economic services do not cover the central government's expenditure on infrastructure. Social sector includes some other essential expenditures like sanitation, housing, social welfare and nutrition, water supply, family welfare etc which are also important in developing the 'human capital' for which the social services expenditure is primarily incurred. This has been recognized in the Human Development Report (UNDP, 1991) also which considers the wider definition of the social sector expenditure. Within the economic services, the expenditure on 'infrastructure' includes expenditure on transport, communication and energy which is crucial in building the productive capacity in the economy[6]. Moreover, the study does not segregate capital and revenue expenditures within the sub-categories of social and economic services. For example, it is important to know the capital allocations towards agriculture and irrigation[7] which contribute significantly towards capacity building in this area.

Thus, while the impact of the economic reforms of the 1991 on the pattern and composition of central government's expenditure is well documented, there are very few such studies for the decade of 2000s in which the FRBM was introduced.

2.4 Classification of Expenditure

Government expenditure can be broadly classified into economic and functional categories. Economic classification categorizes expenditure into various economic categories like current and capital expenditure, wages and salaries, interest, capital formation, savings etc. Functional classification divides expenditure according to the functions to which the total expenditure is allocated like defence, education, health etc. The Ministry of Finance in India has been preparing the budget documents on the basis of economic classification since 1957-58. With the advent of economic planning, annual plan outlays were integrated with the budget documents which required a classification on the lines of various functional categories. These functional categories are useful in analyzing the allocation by the central government to different functions or purposes in accordance with the priorities laid down in the Five-year plans. Thus functional classification was introduced in preparing the budgets from 1967-68 onwards. Currently, the government presents its budgetary accounts both, on the basis of 'Economic classification' and 'Economic-cum-Functional classification'.

An important economic classification is between revenue and capital expenditure. The distinction between revenue and capital transactions, clearly defined by Nayyar(1996) is that, 'capital transactions affect the net wealth or debt position of the central government and the revenue transactions affect the income or expenditure of the

central government.' Going by this definition, revenue expenditure would thus include expenditure on wages and salaries, pensions, interest payments, purchase of goods and services for current use etc, whereas purchase of building which adds to the government's assets, repayment of debt which reduces the financial liability of the government etc would be counted under capital expenditure. The classification between capital and current transactions originated in the 1930s, when the idea gained currency, that, 'current spending' is equivalent to 'current consumption' and thus should be financed through 'current receipts'. Whereas capital spending is investment that will yield returns in the future and therefore, on account of efficiency and inter-generational equity, it should be financed by borrowing or other capital revenues (Hicks, 1954). According to Article 112(2) (b) of the Constitution of India, the budget of the Government has to distinguish expenditure on revenue account from the other expenditure.

Functional classification, as mentioned earlier divides the expenditure on various specific functions like defence, education etc. Functional categories are many and can be broadly divided into three types of services, namely, general, social and economic services. A fourth category is of 'unallocable' services and as the name suggests, it includes those expenditures which cannot be related to any specific purpose. The division between general, social and economic services is based on whether the expenditure is intended for the 'general functioning' of the government machinery or to benefit the citizens as 'consumers' or to benefit them as 'producers' respectively. All the three categories can be both revenue and capital in nature. A short discussion on the types of expenditures included under each of the three is as follows:

1. **General Services-** it can be both revenue and capital in nature. Revenue expenditure on General services includes expenditure on interest payments, defense and for the general upkeep of the government like fiscal expenditure, other administrative costs etc. Capital expenditure within general services includes expenditure primarily on defense services, like capital outlay on acquisition of land and construction works for military purpose etc.

2. **Social Services-**it includes expenditure incurred in providing basic social amenities to the citizens like education, public health, sanitation, water supply, family planning etc. Capital expenditure under this head covers outlays on buildings for schools, technical institutions, scientific research organizations, hospitals, dispensaries, medical stores, research laboratories etc. Capital outlays on infrastructure for All India Radio are also covered here. Importantly capital outlays and loans under various schemes for the resettlement of displaced persons and other social security programmes are also a part of social services expenditure.

3. **Economic Services-** Economic expenditure is designed primarily to raise the national income rather than to redistribute it. Its benefits extend to the citizens as producers. Economic sector capital outlay forms the most important part of public investment controlled by the central government. The expenditure extends to various fields of agriculture, industry, minerals, petroleum, air-craft and ship building industries, water & power development, roads and bridges etc.

The chart below summarizes the classification described above.

Chart 2.1- Economic-cum-Functional Classification of Expenditures

Total expenditure

Economic Classification

- Revenue Expenditure
- Capital Expenditure

Functional Classification

General Services

- Organs of State
- Tax Collection
- Other Fiscal Services
- Interest Payments and
- Administrative Services
- Pensions and miscellaneous
- Defence Services

Social Services

- Education
- Medical, Public Health and
- Information and
- Labour Welfare
- Social security and Welfare
- Seretariat Social services

Economic Services

- Agriculture and Allied activities
- Rural Development
- Special areas programmes
- Irrigation and flood control
- Industry and Minerals
- Transport
- Communications
- Science,Technology,Environment
- General Economic Services

Unallocable

2.5 Trend Analysis (1998-99 to 2010-11)

In order to get an idea about the trend in the functional categories of general, social and economic services ,and revenue and capital expenditures, a preliminary trend analysis of the broad categories of expenditures has been undertaken in this section. A simple semi-log model [8] has been used to calculate the growth rate of the variables, over time. The results have been presented in the table below. Table 2.1 gives the values of the coefficients of the time variable along with the t-values. It can be seen that, all the values are significant at 5% level of significance, except the real expenditure on capital account and the real expenditure on general services.

The estimated values of the slope coefficient obtained in Table 2.1 are basically ln (1+r/100). By taking the antilog of the beta coefficients and subtracting 1, the values of the growth rates 'r' have been calculated. These values have been presented in Table 2.2 below.

Table 2.1: Estimated values of the slope coefficient of the semi-log model.

	Revenue Expenditure	Capital Expenditure	General Services	Social Services	Economic Services
Nominal expenditure	0.1277 (18.81)	0.0755 (4.14)	0.0777 (8.84)	0.1734 (14.76)	0.1516 (25.54)
Real expenditure	0.0712 (3.47)	0.0191 (0.68)	0.0213 (1.14)	0.1170 (6.46)	0.0951 (4.55)
As a percentage of Total Expenditure	0.0080 (2.37)	-0.0441 (-2.65)	-0.0419 (-7.51)	0.0537 (6.52)	0.0319 (6.5)
As a percentage of GDPmp	0.0075 (1.76)	-0.0446 (-2.36)	-0.0424 (-6.42)	0.0532 (6.69)	0.0314 (6.08)

(Source: Budget Documents, Ministry of Finance, Government of India, various years

Refer to Appendix A.1 to A.4 for data. Figures in brackets are t-values)

Table 2.2: Growth in Central Government Expenditure: 1998-99 to 2010-11

(at current prices: percent per annum)

	Revenue Expenditure	Capital Expenditure	General Services	Social Services	Economic Services
Nominal Expenditure	13.62	7.84	8.08	18.93	16.37
Real Expenditure	7.38	1.93	2.15	12.41	9.98
As a percentage of Total Expenditure	0.80	-4.31	-4.10	5.52	3.24
As a percentage of GDPmp	0.75	-4.36	-4.15	5.46	3.19

(Calculated from the values obtained in Table 2.1)

It may be noted in Table 2.2 that both revenue and capital expenditures recorded an increase in nominal terms, however, over time, inflation erodes the real value of the expenditure and therefore it is important to look at the change in the expenditure in real terms. Moreover, it is important to ascertain the change in the nominal expenditure as a relative to the trend in the total expenditure and the GDP.

The real rate of growth in the revenue expenditure, from 1998-99 to 2010-11 was on an average close to 7.5% per annum whereas the same for the capital expenditure was only around 2% per annum. As a percentage of the total expenditure and as a percentage of the GDP[9], while revenue expenditure recorded a rise, capital expenditure, registered a negative growth rate of around 4%. This means that, of the total expenditure, the government has been spending less and less on capital account every year as compared to the revenue account.

It may also be noted from Table 2 that on the basis of the functional classification of expenditure, the rate of growth of the expenditure on social services was the highest, followed by economic services and then general services expenditure. In real terms, social sector expenditure has been growing on an average, at around 12.5% per annum. The real expenditure on economic services also recorded a high rate of growth of around 10% per annum. It must be noted that real expenditure on general services, which primarily includes expenditure on interest payments, defence etc, grew at a low rate of approximately 2%.

As a percentage of total expenditure and GDP, general services recorded a negative growth rate over the period. This was matched by a concomitant rise in the social services expenditure and economic services expenditure, during this period both as a percentage of the total expenditure and GDP.

These trends are however too aggregative in nature and it is important to look at the end-use classification of expenditure and the change in the allocation over the years. For example a rise in the revenue expenditure can be on account of recurrent expenditure like salaries, pensions etc which does not yield any return to the government or could be on account of the social sector expenditure which contributes towards the development of human capital. Similarly for capital expenditure, it would be instructive to know as to which were the sectors that suffered a cut-back in an overall reduction in the capital expenditure. Also general services expenditure, as noted before, is primarily meant for the general upkeep of the government administrative machinery, defence and interest payments. A fall in the general services expenditure can be due to a cut-back in either of these. Interest payments are obligatory payments that do not fetch any service in return

and is a burden on the economy. Thus it is important to know whether a reduction in general services is due to a reduction in the interest expenditure or not.

2.6 Conclusion

This chapter forms the prelude to the analysis that follows in the later chapters. It sets the backdrop of the wider context in which the study is situated and also presents the need to undertake this study. In order to pave way for a better understanding of the analysis to follow, a broad classification of expenditure has been outlined in this chapter. Further, a preliminary analysis of trends has been carried out here in order to give some idea regarding the direction of change in the expenditure over this period. It was noted that out of the total expenditure, capital expenditure fell and revenue expenditure rose. This was also true for the trend in these categories relative to GDP. Within the broad functional classification of expenditure, out of the total expenditure, the expenditure on general services was found to be falling and economic and social services expenditure was noted to be rising. Similarly, as a percentage of GDP too, general services depicted a downward and, economic and social services expenditure showed an upward trend. The chapters that follow provide a detailed analysis of the changes in the sub-components of these expenditures and also develop a summary measure in order to provide a consolidated picture of the ongoing changes.

Chapter 3

Different Types of Deficits: An Assessment

3.1 Introduction

Governments conventionally make use of different measures of deficits as a means of assessing fiscal performance or changes in the fiscal situation, if any. However, each of these measures of deficits holds a specific macroeconomic meaning and significance depending upon the policy objectives of the government. **An assessment of these different types of deficits has been undertaken in this chapter, so as to delineate the conceptual difference between them and thus ascertain their applicability in analyzing the changes in the pattern of government expenditure.** The discussion in the chapter points out to the lacunae in the currently targeted measures of deficits in ensuring that the total outlays are in conformity with the long-term goals of growth and development in the economy. Drawing from this discussion, it has been suggested that the currently used measures of deficits be supplemented with an additional summary measure in the form of a composite index for analyzing the changes in the quality of expenditure, notwithstanding the limitations that a composite index suffers from.

The current chapter is structured in the following manner: the first section discusses the different concepts of deficits that have been and are being used by the government in India. The second section discusses the macroeconomic significance of these measures and their limitations. In the light of this discussion a case has been made here for developing a composite index as a summary measure of the changes(if any) in the structure of the annual budgetary outlays with its merits and demerits. The last section concludes.

3.2 Different Types of Deficits

There are different types of deficits and each of these carry a specific macroeconomic implication. Their usage also varies from one country to another, and very often, even within the same country from time-to-time. For example, in India, until the mid-1980s, discussions on fiscal policy focused primarily on the budget deficit and it was held that controlling budget deficit would keep the inflationary impact of the deficit under control (Chelliah, 2005). However, from 1991-92 onwards, the government started providing estimates of a broader deficit measure called the 'gross fiscal deficit' (Rakshit,2006). The difference in the use of different concepts of deficits is because of many reasons like, differences in the treatment of the different levels of government, technical accounting limitations or due to the issues in defining the deficits in an economically meaningful way in conformation with the government's policy objectives (Fischer and Easterly, 1990).

The World development Report of 1988 covers a number of deficits, their definitions and economic significance. The most comprehensive measure of deficit that reflects the overall borrowing requirement of the government is 'Public sector borrowing requirement (PSBR)' or the 'Consolidated Public Sector Deficit'[10]. It is defined as the excess of expenditure over revenue for all the government entities. Despite being the most comprehensive deficit measure it is, nevertheless, an inadequate measure of indebtedness when a country faces high rate of inflation, which diminishes the value of the debt. In the wake of inflation, the interest burden of debt does not represent the 'real' interest cost to the government. To address this issue, an inflation-indexed measure of the public sector deficit called the 'operational deficit' is made use of. Operational deficit is the 'inflation-corrected' deficit and is defined as the (PSBR) *minus* the inflation rate *times* the debt stock. Another important measure is the 'structural deficit', which removes the effects of temporary movements in the variables from their long-run values. This measure , therefore

provides an idea of the long-run position of the country after removing the impact of temporary shocks.

The Government of India also reports a number of deficits. The chart below summarizes these different measures by dividing them on the basis of the means of financing them and on the basis of the type of transactions.

Chart 3.1 Types of Government Deficits

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                        ┌──────────────┐
                        │   Types of   │
                        │   deficits   │
                        └──────┬───────┘
            ┌──────────────────┴──────────────────┐
    ┌───────────────┐                      ┌───────────────┐
    │  On the basis │                      │  On the basis │
    │  of Financing │                      │  of the type  │
    │               │                      │ of transactions│
    └───────┬───────┘                      └───────┬───────┘
      ┌─────┴─────┐          ┌──────────┬──────────┼──────────┬──────────┐
┌──────────┐ ┌──────────┐ ┌──────────┐ ┌─────────┐ ┌─────────┐ ┌──────────┐
│Traditional│ │Monetised │ │  Fiscal  │ │ Primary │ │ Revenue │ │ Effective│
│  budget   │ │ Deficit  │ │ deficit  │ │ deficit │ │ Deficit │ │  Revenue │
│  deficit  │ │          │ │          │ │         │ │         │ │  deficit │
└──────────┘ └──────────┘ └──────────┘ └─────────┘ └─────────┘ └──────────┘
                           ┌──────────┐ ┌─────────┐
                           │  Gross   │ │  Gross  │
                           │  Fiscal  │ │ primary │
                           │  Deficit │ │ deficit │
                           └──────────┘ └─────────┘
                           ┌──────────┐ ┌─────────┐
                           │Net fiscal│ │Net      │
                           │ deficit  │ │primary  │
                           │          │ │deficit  │
                           └──────────┘ └─────────┘
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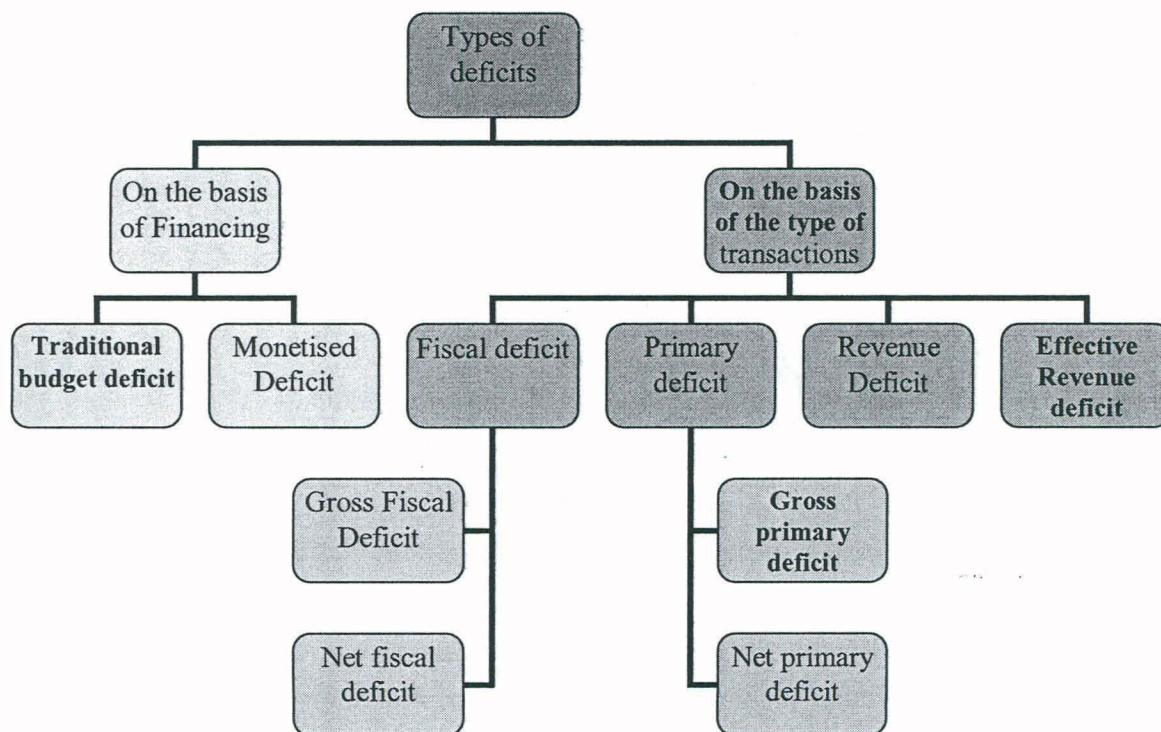
3.2.1 Based on the Means of Financing:

On the basis of the means of financing the government deficits, these can be divided into budget deficit and monetized deficit. Government deficits can be financed either from the RBI or the non-RBI entities (domestic markets and external sources). Further, these sources of finance can be either short-term or long-term in nature. A part of the government deficits which is financed through *short-term sources*, be it RBI or non-RBI, is referred to as the *traditional budget deficit*.

More formally, *traditional budget deficit can be defined as the part of the government deficit which is financed through the net issuance of short-term Treasury Bills (ad hoc and ordinary)[11] and by running-down the central government's cash balances held by the RBI .Monetized Deficit* on the other hand is the part of the government deficit which is *financed solely by the RBI* (either short-term or long-term). *Monetized deficit is also known as the 'Net RBI credit to the government' and can be defined as the sum of the net issue of short-term treasury bills (that is, 91-day treasury bills), dated securities (which means long-term securities) and rupee coins held exclusively by the RBI, net of government's deposits with the RBI[12].*

The difference between these two types of deficits can be summarized as the following:

a)   Traditional budget deficit includes 91-day treasury bills held by both, RBI and the non-RBI entities whereas monetized deficit includes 91-day Treasury Bills held only by the RBI.

b)   Traditional budget deficit includes only short-term sources of finance whereas monetized deficit includes long-term securities also.

The chart 3.2 below summarizes the discussion above.

Chart3.2 Classification of Deficits on the basis of Means of Financing.

		Monetized deficit (b+c)	Traditional budget deficit (c+d+e)	Gross Fiscal deficit (a+b+c+d+e)
Long term financing -> (a+b)	Other than RBI (a)			
	RBI (b)			
Short term financing->	RBI (c)			
	Other than RBI (d)			
	Draw down of cash (e)			

As is clear from the chart above, despite being conceptually different, both these concepts of deficits are closely related to each other. If a large part of the budget deficit is comprised of *ad hoc treasury* (that is, financing from the RBI), a large part of the budget deficit overlaps with the monetized deficit. In other words, the correlation between the budget deficit and the monetized deficit increases when the market absorption of the government securities decreases (Reddy, 1997).

Monetized deficits thus comprise of all the means by which the RBI supports the Central government in financing its deficits. Since any kind of financing by the central bank increases the reserve money or the base money in an economy, therefore, an increase in monetized deficits lead to a 'creation of money' in the economy. In an economy, money can be created either by the central bank by printing of notes or by the banks through creation of credit, given a certain money multiplier. In a situation where monetized deficits are the principal source of reserve money and the money multiplier is constant, monetized deficit are the main determinant of money supply in the economy and thus an important indicator of *inflationary impact* of the government's budgetary deficits. The reason behind this belief that an increase in monetized deficits could be inflationary is the following- when the government sells securities to the RBI (either short-term or long-term) to finance its deficits, the RBI pays for it by creating money[13]. This act of creation of money to finance deficits is called 'monetization of deficits'. An increase in the supply of money leads to an increase in the price level according to the 'Quantity theory of money'. The quantity theory of money posits that, given the velocity of money, that is, the number of times money changes hands, and the output level in the economy; an increase in the supply of money leads to an increase in the price level. Thus, as the monetized deficits increase, the money supply in the economy increases

and thus the price level in the economy is expected to increase too (if the Quantity theory of money holds)[14].

As discussed in Reddy(1997) in detail, till about 1997, the government could borrow from the RBI by issuing ad hoc treasury bills. This was an easy and a low cost means through which the government could finance its deficits. This facility of issuance of ad hoc treasury bills was made available to the government, initially, to enable it to meet the temporary mismatches in its *cash* balances.[15] However, over the years, the reliance on ad hoc treasury bills increased as it was an easy source of financing the deficits, at a low interest rate (as compared to the market rates of interest which were much higher). Increased reliance on ad hoc TBs meant an unabated growth in the monetized part of the government's deficits. In order to keep a check on this automatic monetization of deficits, the government discontinued the issuance of ad hoc treasury bills from 1997 onwards.

The reason behind the attempt to discourage automatic monetization, as explained earlier, was the fact that a rise in the monetized deficit (or budget deficit financed through ad hoc TBs) is a possible source of inflation in the economy. Thus, keeping in mind the concerns regarding 'price stability', the government decided to discontinue the issuance of ad hoc treasury bills. With this policy move, the budget deficits have lost their significance and are not reported by the government in its annual budgetary statements. As a result of this policy change, even the yearly monetized deficits have fallen to a level which is devoid of any significant macroeconomic impact.

3.2.2 Based on the Type of Transactions.

Based on the types of transactions there are various types of deficit measures, namely, revenue deficit, effective revenue deficit, primary deficit (gross and net) and fiscal deficit (gross and net).

The Chart 3.3 below clearly shows the types of transactions that each of these covers.

Chart 3.3 Classification of Deficits on the Basis of Types of Transactions

Transaction	Effective Revenue deficit (a + b)	Revenue Deficit(a + b + c)	Net Fiscal Deficit (a+b+c+d)	Net Primary Deficit (b+ c + d)	Gross Primary Deficit (b+c+d+e)	Gross Fiscal Deficit(a+b+c+d+e)
Net Interest Payments(a)						
Revenue expenditure (excluding revenue expenditure for creation of capital assets and net payments) *minus* revenue receipts(b)						
Revenue Expenditure for creation of capital asse[ts]						
Net non-debt creating capital expenditure(d)						
Net domestic lending(e)						

Revenue deficit is defined as the difference between the total revenue expenditure and total revenue receipt of the government. This difference is to be met through borrowing and thus revenue deficit is a measure of government borrowing which is used to meet the consumption (revenue) expenditure.

It is argued that the revenue deficit must be reduced or if possible, totally eliminated in order to maintain "inter-generational equity" and the "sustainability" of the government's debts. From inter-generational equity point of view, it is argued that, borrowings should not be used to meet current expenditure because their benefits normally do not accrue to the future generations, who will have to bear the burden of repayment of these borrowings. Further, unlike capital expenditures, since current expenditures do not yield a future stream of income, so, from sustainability point of view, they must be met, as much as possible, from the current receipts.

It was noted that an unabated growth in revenue deficit in India in the 1980s, made the fiscal regime of the government unsustainable and led to a fiscal crisis by the end of that decade (Nayyar,1996).Thus it is suggested that the government must maintain a zero revenue deficit. Although, it has been argued by Nayyar (2008) that 'in an ideal world, a revenue surplus, to finance social sector and defence expenditure, which does not yield any tangible returns to the exchequer would be preferred'. A zero revenue deficit target has been adopted by the UK government also, since 1997, which is called the 'Golden rule'. In India, the FRBM Act mandated that the government must bring down its revenue deficit down to zero by the year 2008-09.

The difference between the revenue expenditure and revenue receipts, must conceptually, give an estimate of the government's dis-saving. However, it does not do so because the current classification of expenditures in the Budget documents in India does not strictly correspond to current and capital as defined in the national accounts. *The revenue deficit, as presently reported by the government includes various current expenditures which are capital in nature.* For example Non-plan revenue expenditure of the government includes grants to the States and UTs, a significant part of which goes into the maintenance of roads, buildings etc, which is certainly capital in nature. To address this anomaly in the revenue deficit of including capital transactions as current, the government of India, in the budget 2011-12, introduced a new measure of deficit called the *'effective revenue deficit' (GOI, 2011)*. It is defined as revenue deficit *less* the revenue expenditure which goes into the creation of capital assets. Thus, instead of discontinuing the long followed definition used in reporting revenue deficit, the government has introduced a separate measure which has been corrected to include transactions that are purely current in nature.

The effective revenue deficit is a significant addition to the existing measures of deficits reported by the government as it conforms not only to sound accounting principles by including

the correct types of expenditures but is also on the lines of better economic principles. This is because when the government aims at cutting-down on the revenue expenditure to bring down the revenue deficit, then in this process, a significant part of the capital expenditure, wrongly counted as revenue expenditure, is also cut-down. This capital expenditure which primarily covers expenditure on the maintenance and the general upkeep of the assets is crucial for promoting economic growth and development. It has been noted in the World Development Report (1988) also, that inadequate spending on 'Operation and Maintenance' can lead to low levels of effectiveness in areas such as education, health and also lead to a rapid deterioration of physical capital. In order to maintain inter-generational equity and the sustainability of debt, instead of the currently used revenue deficit, it is this measure of deficit that must be targeted. However, this change was introduced only in this year's budget and the figures for the effective revenue deficit for the previous years are not available.

Another aspect that must be noted is that, a large *part of the revenue expenditure on social sector*, like on education and health, does not fall under the category of pure public consumption expenditure. *Capital spending* is conventionally taken as the *amount spent on tangible physical assets* with a life of more than one year and excludes a number of current expenditures that contribute towards generating returns in the future. Thus, there is a bias, in this type of classification, in favour of the infrastructure sector, against social sector which contributes significantly towards 'human capital formation' and is thus a long-term investment(WDR,1988). This idea finds mention in Domar's work celebrated work on the sustainability of debts also. Domar(1944) points-out that, 'a substantial part of the efficiency raising expenditure is usually treated as 'current costs' and is not treated as a part of 'investment expenditure''. He argues that, 'if healthier people are more productive, then expenditure on public health must be treated as

investment expenditure. Similarly, expenditure on education, research, flood control, resource development etc also satisfy these requirements' (Domar, 1944). More recently Rakshit (2006) has also argued that to arrive at the correct revenue deficit to be targeted, even expenditure on social sector must be subtracted from the revenue deficit. The recently introduced 'effective revenue deficit' is closer to the correct definition of current transactions, however, it still does not address this lacuna in the current definition of 'revenue deficit'. While it correctly excludes the grants of capital nature from the current expenditures, it nevertheless, does not exclude a part of the revenue expenditure, in the form of social sector expenditure, which it is argued, is actually a kind of capital expenditure. Thus, even the effective revenue deficit is not truly representative of transactions that are current in nature.

While the two measures of deficit, discussed so far covered only revenue transactions, a broader measure of deficit is the **'Net fiscal deficit'** which is the excess of revenue and non-debt creating capital expenditure[16] over the receipts of the government. The gross fiscal deficit on the other hand includes the sum lent out by the central government within the economy which includes States and Local governments, public sector enterprises etc. Thus if one looks at the fiscal balance sheet of the government, gross fiscal deficit, as a measure of government deficit covers all the disbursements of the central government (both revenue and capital in nature) minus all the receipts except debt-creating capital receipts of the government. The difference between these two sides is thus the 'debt-creating' capital receipts which are nothing but the government's borrowings. Thus, gross fiscal deficit (GFD) is equivalent to the total borrowing requirement of the government during a financial year. GFD shows the net addition to the public debt during a financial year.

It is clear from the discussion on the various forms of deficits that GFD is the broadest measure of the government's deficits. It is for this reason that, GFD assumes immense significance

in macroeconomic budgeting and is a widely used summary indicator of the macroeconomic impact of the budgetary transactions in several countries. This measure has been adopted by the IMF as the principal policy target in their programmes. The government of India began reporting the fiscal deficit only after 1991. Earlier it was the monetized deficit or the traditional budget deficit which was targeted by the government. However, the traditional budget deficit did not indicate the overall borrowing requirements of the government and thus did not fully reflect the yearly addition of debt of the government in an economy.

While the gross fiscal deficit is a closely watched measure of deficit in an economy and is constantly sought to be kept in check by the government, it however, does not convey the yearly net addition to the debt due to an excess of expenditure over receipts of that particular financial year. This is because it includes the expenditure towards interest payments on the debt incurred in the past. It is important to exclude the expenditure in the form of interest payments and then study the changes in the government's deficit so as to study the yearly improvements made by the government in bringing-in greater fiscal discipline. As discussed in Nayyar (2008) interest payments are a function of the interest rates which are volatile and quite often beyond the government's control which means that the government cannot easily maneuver the burden of interest payments. Countries that face large debt burden have to shell-out a preponderant share of their total expenditure in paying interest on it. Moreover, if the initial public debt is large as a proportion of GDP then that implies that the interest burden would carry forward for a longer period of time despite government's persistent efforts at reducing the gross fiscal deficit. Thus, in order to ascertain the increase in the government's debt due to budgetary transactions of only a particular financial year, the government reports another measure of deficit called the '**gross primary deficit**'. Gross primary deficit can be defined as gross fiscal deficit *net of* net interest

payments by the government during a financial year. Gross primary deficit thus indicates the government's indebtedness due to the current year's fiscal operations. Analogous to the distinction between the gross and net fiscal deficit, net primary deficit corresponds to the gross primary deficit *net of* net domestic lending by the government.

It is clear from the above discussion that, depending upon the policy objectives, different types of deficit measures can be defined and targeted. In India, Budget deficit and Monetized deficits have almost receded to irrelevance now. It are the remaining four measures that are in use and reported regularly by the Central government.

3.3 Significance and Applicability of the Conventional Government Deficits.

The above discussion makes it clear that there are various types of government deficits that are very different from each other conceptually. Since each of these measures carry a specific macroeconomic meaning and significance therefore, it has been argued that depending upon the policy objective, the deficit measure to be targeted must be appropriate (Nayyar, 2008).

The gross fiscal deficit (GFD) is the broadest measure of deficit which shows the overall borrowing requirements of the government. It is this measure of deficit that has been adopted by the IMF as the main policy target and it is this variable that was sought to be kept in check during the macroeconomic stabilization and structural adjustment programme (Chelliah, 2005). It has, however, been argued that targeting GFD is incorrect because such a strategy that places overarching emphasis on the *size of the deficit* disregards the *use to which the expenditure is put* (Nayyar,2008).The Indian experience during the 1990s is a case in point. Targeting gross fiscal deficit during this period led to a severe distortion in the composition of expenditure throughout the 1990s. While the gross fiscal deficit came down, it was at the expense of the capital

expenditure that declined because of the inability of the government to cut-down on the revenue expenditure easily. Even in the recent period, the FRBM has set a target of Fiscal deficit of 3% of GDP. The 3% target is similar to the target set as a part of the 'convergence criteria' of the Mastricht Treaty for the EU nations. Chelliah (2004) has argued that a 3% limit on the GFD would restrict the public investment to too low a level, given the fact that the government sector in India has to undertake and promote capital formation by a larger extent than the governments of countries of the EU.

Thus, while a positive GFD shows the net yearly addition to the public debt, however, it is highly aggregative in nature and it is important that as per the objectives of the government, the focus shifts away from GFD towards the other measures of deficit. A primary deficit is a better measure if the aim is to ascertain the yearly improvement made in the process of fiscal consolidation. Likewise, if concerns emerge regarding inflation, then, it is the monetized deficit which is an index of the inflationary impact of the monetary expansion due to increasing government deficits.

Nayyar(2008) has argued that if the objective of the government is to obtain an index of sustainability of debt then it is the revenue deficit that must be reined-in. As noted before, the government expenditure can be divided into two main categories, namely, revenue and capital expenditure. This distinction simply reflects the division of expenditure into consumption and investment purposes. While the former does not yield a future stream of income, the latter does. For this reason, it is often suggested that it is prudent to meet the current consumption expenditure from current income and the investment expenditure must be supported through borrowing. For this reason, alongwith GFD, revenue deficit assumes immense importance in ensuring a correct composition of expenditure. Keeping a check on the revenue deficit and using the borrowing to

support investment expenditure to a large extent ensures that the piling-up debt can be honoured in the long-run. Thus, from long-term sustainability point of view, the revenue deficit must be targeted.

Although a judicious allocation of the total expenditure for consumption and investment purposes, keeping in mind the income generating capacity of the economy, is in-sync with the long-term objectives of growth and development, it is equally important to ensure a proper end-use of government expenditure. Such a classification refers to the functional classification of expenditure. There are certain types of expenditure that contribute directly towards improving the human and physical capital formation and thus enhance the productive capacity of the economy. It has been argued that certain specific areas can be identified that require adequate government expenditure on a priority basis (Rakshit, 2000). These expenditures are infrastructure, education, health and agriculture. The Eleventh five year plan document of the government of India also clearly states that the public investment must be increased especially in the areas like social sector, agriculture, rural development and in developing infrastructure for ensuring faster and more inclusive growth. As the Eleventh Five Year Plan notes,

> In order to achieve inclusive growth, a revival in agricultural growth is
> necessary because it is the most important single factor affecting rural
> prosperity. To achieve a growth target of 4% per annum in agricultural GDP
> is a key element of the Eleventh Five Year Plan strategy for inclusive
> growth[...]Timely availability of water is the most critical element in raising
> yields and the Plan therefore emphasizes expansion of irrigation where
> possible and also improvement of existing irrigation systems.
>
> (Eleventh Five Year Plan, GOI).

It is widely held that, an increase in the public investment, particularly in infrastructure, is the most effective method of stimulating the overall investment because it could stimulate private investment. There is now ample evidence on the positive linkage of the public and private investment, more formally called the 'crowding-in' process, especially in the developing countries. Most often, it is observed that the private investment tends to mushroom in areas where the government makes a concerted effort towards improving the infrastructure. The current Five Year Plan instituted a comprehensive strategy of development for both rural and urban infrastructure defined to include electric power, roads, railways, ports, airports, telecommunications , irrigation, drinking water, sanitation , storage and ware-housing. The total investment in these areas was sought to be increased substantially by the terminal year of the plan period. Thus even within capital expenditure there are certain areas that must be accorded priority.

Revenue expenditure can also be either on general services or social services or economic services. While an increase in the general services (which is primarily due to an increase in the interest payments on debt) is bad, an increase in the social services expenditure (which is largely revenue in nature) is good for the economy in the long-run. It has been noted that stepping-up expenditure in social sectors, not only helps protect the poor or the vulnerable, but is also an important source of generation of 'demand' in the economy. This fact has been demonstrated in the recent episode of the global financial crisis. Countries like Brazil, China and India, were found to escape from the adverse impact of the recession, largely because of the social safety net provided by their governments (Nayyar, 2011).

Thus, apart from the broad composition of expenditure comprising of revenue and capital expenditure, there are certain functional categories of expenditure that are important. The conventional measures of deficit do not factor-in this qualitative aspect. In order to take into

account the end-use classification of the expenditure, in the form of a summary measure, a composite index can be made use of. A composite index can be constructed in such a manner that it incorporates both the level and the composition of different types of expenditures. However, a composite index suffers from various limitations, as has been pointed-out in the studies that have made use of them in different contexts in economics. The next chapter discusses the composite index that has been constructed in order to study the changes in the structure of expenditure.

3.4 Conclusion

The present chapter discussed in detailed the various types of government deficits that have been used by the government of India as a policy variable and as a measure of fiscal performance. The discussion points out at the fact that there are significant conceptual differences in these measures of deficits and it is important to select the correct measure of deficit in accordance with the policy objective in mind. As summarized in Nayyar (2008),

> If the objective is to measure the total borrowing needs of the government, the gross fiscal deficit is the most appropriate. If the objective is to consider the implications of a deficit in government finances for monetary expansion, as an index of inflationary pressures, the monetized deficit is the most appropriate. If the objective is to assess whether a fiscal regime is sustainable over time, the revenue deficit is the most appropriate. If the objective is examine what governments can do, or have done, to improve the fiscal situation, the primary deficit is the most appropriate.
> (Nayyar, 2008)

It is clear that, these deficit measures do not convey the **qualitative** changes in the revenue and capital expenditure, if any. The present study aims at analyzing the changes in the 'composition of expenditure' and therefore, the current measures of deficits need to be supplemented with another summary measure which takes into account, the allocation of expenditure based on the end-use classification. While a simple analysis of trend may provide the same information, an index gives a summary measure, which may be used in conjunction with the different measures of deficits in order to study the changes in the structure of expenditure. The details on this index and the analysis of the Union government's expenditure allocation using this index form the content of the chapter that follows.

Chapter 4

Expenditure Allocation Index

4.1 Introduction

The present study makes an attempt at measuring the changes in the composition of expenditure allocation by the central government by factoring-in the 'qualitative' aspect of the revenue and capital expenditures. For this purpose, it makes use of a 'composite index'. **A composite index** is a 'composite' of different variables that may or may not be expressed in the same unit of measurement but are clubbed together by means of the standardization technique of 'indexing'. Thus, the advantage in using a composite index is that , one, it allows for a comparison between a given set of variables that cannot be compared otherwise and two, it gives a consolidated picture of change taking all the variables together. The relative merit in using a composite index has been explained by Kakwani (1993) as he makes use of the Human Development Index to analyze the changes in the living standard of the countries. He points-out that an 'absolute change' disregards the level from which the change began and a 'percentage change' gives a disincentive for better performance. This he explains with the help of a numerical example, that, a change from 50 to 60 and a change from 90 to 100 would be regarded at par if we take the absolute change and in percentage terms, a change from a lower level would show a greater improvement than from a higher level. For this reason he argues that the Human Development Index developed by Amartya Sen , that normalizes the change by the range (that is, the maximum value minus the minimum value) is better for considering a change in a variable.

The present chapter sets-out a similar composite index drawing upon the existing literature in order to study the changes in the composition of the central government's expenditure from 1998-99 to 2010-11. The chapter is structured in the following manner. The first section provides a review of literature primarily on the studies that have made use of a composite index in a similar context. The second section outlines the formulation of the composite index used in this study. This part also discusses the limitations in using composite indices that have been noted in construction of such indices in various studies. The third section discusses the data sources. The fourth section examines the limitations of the data in some detail. The fifth section presents the results followed by a discussion on these results in the sixth section. The last section draws together some concluding remarks.

4.2 Literature Review

Composite index finds widespread use in economic studies. A well-known composite index is the 'Human Development Index' used by the UNDP to measure the level of development of countries. There are various studies like Shiva kumar (1991), Bhatia (1999), Kakwani (1993), to name a few, that have made use of the HDI in different contexts. Another noted composite index is the 'Physical Quality of Life Index' developed by Morris (1979) that makes an attempt towards measuring the 'quality of life' or 'well-being' of a country. In the realm of public finance also, there have been studies that have made use of composite indices. Afonso *et al* (2005) have developed a multidimensional index to measure the performance of the public sector in 23 OECD countries. In the context of India, a study by Bhide and Panda (2002) makes use of linear

and non-linear composite indices to evaluate the performance of the Union budgets from 1980-81 to 2000-01. The Eleventh and the Twelfth Finance Commissions of the Government of India also made use of an index, called the 'Fiscal self-reliance and improvement index', to gauge the fiscal discipline of the state(GOI,1999; GOI, 2004).However, the commissions considered the change in only one indicator of fiscal performance, that is revenue receipts to revenue expenditure. In order to take into account a larger set of variables in judging the fiscal performance of the Indian states, Dholakia(2005) developed a three-dimensional composite index using eight indicators of fiscal performance. A recent study by Goyal (2010) interestingly looks into the performance of different political parties in meeting the fiscal targets and in improving the fiscal performance by developing 'promises made' and 'promises kept' indices.

4.3 Composite Index- The Expenditure Allocation Index

The idea of using a composite index to study the composition of expenditure in the present study is inspired from the idea first used by Bhide and Panda(2002) of using a composite index to analyze the budgets of the government of India from 1980-81 to 2000-01. The present study is however confined only to the expenditure composition and does not cover the revenue raising capacity of the government. Moreover, the functional form used in this study is different from that used by Bhide and Panda (2002) and it draws largely from the one used by Morris (1979) in developing the PQLI.

The composite index formed in this study is called the 'Expenditure Allocation Index' (EAI). A discussion on the details of the EAI, on the choice of its variables, functional form used and the limitations encountered follows next.

4.3.1 Choice of Indicators

To arrive at the Expenditure Allocation Index in the present study, three dimensions have been used: (a) Composition of Capital expenditure (b) Composition of Revenue expenditure and (c) Composition of Total expenditure. These three dimensions form three component indices, namely, Capital Index (CI), Revenue Index (RI) and 'Total Expenditure Index(TEI) respectively. Each of these indices, in turn, is comprised of three variables each, which are select functional expenditure heads and measures of deficits. These component indices and their variables have been shown clearly in chart 4.1 below.

Chart 4.1 Components of EAI

```
                    ┌─────────────────────┐
                    │    Expenditure      │
                    │  Allocation Index   │
                    └──────────┬──────────┘
        ┌──────────────────────┼──────────────────────┐
┌───────────────┐     ┌───────────────┐      ┌───────────────┐
│ Composition of│     │ Composition of│      │ Composition of│
│Capital         │     │   Revenue     │      │Total          │
│expenditure (CI)│     │  expenditure  │      │expenditure(TEI)│
└───────┬───────┘     │     (RI)      │      └───────┬───────┘
        │             └───────┬───────┘              │
┌───────────────┐     ┌───────────────┐      ┌───────────────┐
│ Social sector │     │Interest        │      │Capital         │
│expenditure/GDP│     │payments / GDP  │      │expenditure /   │
│               │     │                │      │Total Expenditure│
└───────────────┘     └───────────────┘      └───────────────┘
┌───────────────┐     ┌───────────────┐      ┌───────────────┐
│Infrastructure │     │Social sector  │      │Revenue deficit │
│expenditure/GDP│     │expenditure/GDP │      │/ Total         │
│               │     │                │      │expenditure     │
└───────────────┘     └───────────────┘      └───────────────┘
┌───────────────┐     ┌───────────────┐      ┌───────────────┐
│Agriculture and│     │Agriculture and│      │Primary deficit/│
│allied         │     │allied          │      │GDP             │
│activities, and│     │activities, and │      │                │
│irrigation     │     │irrigation      │      │                │
│expenditure/GDP│     │expenditure/GDP │      │                │
└───────────────┘     └───────────────┘      └───────────────┘
```

4.3.1.1 **Composition of Total Expenditure**- The three variables of an improvement in the composition of total expenditure, as shown in chart 4.1 are:-

1. **Capital expenditure relative to total expenditure(CE/TE)**

2. **Revenue deficit relative to total expenditure(RD/TE)**

3. **Primary deficit relative to GDP(PD/GDP)**

The total expenditure when allocated in such a manner that the revenue expenditure is financed from within the total revenue receipts and the borrowings are used to finance capital expenditure, ensures the long-term sustainability of the expenditure regime to a large extent. In accordance with this, three variables have been chosen that indicate an improvement in the total budgetary outlays. *The first variable* is the level of *capital expenditure as a proportion of the total expenditure*. An increase in the same would be counted as an improvement in the index. *The second variable* that has been chosen is the *revenue deficit as a proportion of the total expenditure*. Instead of taking only *revenue expenditure*, *revenue deficit* has been considered because an increase in the revenue expenditure is not unsustainable as long as there is adequate revenue income of the government to finance it. Thus, in interpreting the changes in the 'level' of revenue expenditure, it is essential to take into account the revenue receipts also. For this reason the revenue deficit has been considered and a reduction in it implies greater fiscal prudence. Moreover, instead of the convention of taking revenue deficit as a percentage of GDP, it has been taken *as a percentage of the total expenditure* because this ratio depicts the amount of borrowing used to finance the current expenditure of the government. Dholakia (2005) in constructing the 'fiscal performance index' ,in a similar context, also considers gross fiscal deficit as a

proportion of 'Total expenditure' instead of the 'Gross State Domestic Product(GSDP)' , arguing that the former depicts the reliance of the states on the borrowings to finance the Total expenditure. In the case of the present study, revenue deficit to total expenditure has been used as this ratio conveys the reliance on 'borrowings' to finance the current expenditure part of the total expenditure. The *third variable* is the *primary deficit as a percentage of the GDP*. The primary deficit, as discussed before, by excluding interest payments, removes the burden of the past debt and shows the yearly improvements made in the fiscal position of the government's finances. Contrary to the first variable, a *reduction* in the revenue deficit and primary deficit as a percentage of total expenditure and GDP respectively, indicates an *improvement* in the Expenditure Allocation Index. It must be noted that in this exercise, the first two variables are nothing but the components of the Gross Fiscal Deficit. Since they have been taken separately, therefore, another variable in the form of GFD has not been added.

4.3.1.2 **Composition of Revenue expenditure** - The variables used to convey the quality of revenue expenditure are:-

1. **Interest payments as a percentage of GDP (IP/GDP)**

2. **Social Sector Expenditure (on revenue account) as a percentage of GDP (SSR/GDP)**

3. **Agriculture and allied activities, and Irrigation Expenditure (on revenue account) as a percentage of GDP (AER/GDP)**

While the 'level' of revenue and capital expenditure has been considered in the TEI, this and the following component index, namely RI and CI, take into account the 'qualitative' aspect. Thus, in the case of revenue expenditure, the RI considers the change in the allocation of certain types of revenue expenditures as a percentage of GDP over time. Revenue expenditure, as discussed earlier, can be divided into general, economic and social services. *Interest payments as a percentage of the GDP* has been taken as the *first variable* in this index. A preponderant share of the general services expenditure on revenue account goes into servicing the debt. For this reason, instead of taking general services expenditure as a whole, its main component, which is interest payments, has been considered. A fall in this indicator will show-up as an improvement in the index. The *second variable* is the social sector expenditure as a percentage of GDP. *Social sector* expenditure contributes towards the development of human capital formation and it generally includes expenditure on *'social services'* (excluding expenditure on information and broadcasting, and secretariat expenditure) and *'rural development'* expenditure (Ramakumar, 2008). An increase in the social sector expenditure as a percentage of the revenue expenditure is counted as an improvement in the index. The *third variable* is the expenditure on the *agriculture sector as a percentage of GDP*. This is an important developmental expenditure within the economic services because a large proportion of the population depends upon the agricultural sector, directly or indirectly, for employment and livelihoods. To obtain value of this variable, the expenditures on agriculture and allied activities, and irrigation have been added together and expressed as a percentage of the GDP.

4.3.1.3 Composition of Capital expenditure – This dimension shows the quality of capital expenditure. The index used to convey a change in this dimension, which is the Capital Index(CI) has been taken to be an average of the following three variables:-

1. **Social Sector Expenditure (on capital account) as a percentage of GDP (SSC/GDP)**

2. **Agriculture and Allied activities, and Irrigation Expenditure (on capital account) as a percentage of GDP (AEC/GDP)**

3. **Infrastructure Expenditure as a percentage of GDP (IE/GDP)**

Just like revenue expenditure, capital expenditure can also be divided into general, economic and social services. General services expenditure on capital account primarily comprises of defence expenditure. For instance in the year 2008-09, out of the total general services allocation on capital account, around 86% was on defence. In a simple exercise such as this, it is difficult to take a stand on whether an increase in the defence expenditure should be counted as an improvement or not. For this reason, defence services expenditure (and thus general services expenditure) has not been included in considering the 'qualitative' changes in the composition of capital expenditure. So the *first variable* is the *social sector* expenditure as a percentage of GDP, an increase in which would be considered an improvement in the index. Social sector expenditure as mentioned before is defined as the sum of expenditure on certain social services and rural development. The second variable, similar to the revenue index, is the joint allocation on agriculture and allied activities, and irrigation expressed as a proportion of GDP. As discussed in the previous chapter, an important class of capital expenditure by the

government is the expenditure on building 'infrastructure'. Since most of this expenditure is capital in nature, therefore, it has been considered as a separate variable only in Capital index and not Revenue index. 'Infrastructure' comprises of expenditure on *energy, transport and communication*. An increase in the central government allocation for infrastructure as a percentage of the GDP is an indicator of an improvement in the quality of capital expenditure and has been added as the third variable.

It must be noted that there is no fixed formula for defining the 'quality' of capital and revenue expenditure. The classification between developmental and non-developmental, which is an indicator of 'quality' of expenditure to some extent, is also not a rigidly defined classification. For example, expenditure on defence is counted as non-developmental which cannot be totally dismissed as unproductive. In order to analyse the manner of public spending on human development, the UNDP's Human Development Report (HDR,1991) considered a separate ratio on expenditure on *'Human Priority Concerns'* apart from expenditure on social services. 'Human priority concerns' expenditure included expenditure on elementary education, health and family welfare (excluding expenditure on medical education, training and research), nutrition, water supply, sanitation and rural development. This is close to the definition of 'social sector' considered in this study. Within the economic services, only expenditure on the agriculture sector and infrastructure have been considered. These two sectors have been identified separately because there is no ambiguity regarding the interpretation in the rise or fall in these expenditures. Most of the studies that have looked at the changes in the expenditure allocation have laid emphasis on the allocation on these sectors[17]. Other economic services expenditures are also largely developmental in nature but there are

certain expenditure heads like expenditure on tourism (expenditure head number-5452), investments in international financial institutions(expenditure head number-5465) etc , an allocation on which cannot be unambiguously termed as developmental in nature.

While some discretion has been used in not including certain expenditure heads, however, the variables *that have been included* are undoubtedly those that have been identified as crucial and require due allocation from the government. Thus the composite index formed in this study includes important end-use expenditure categories and would convey the change in their allocation over the given period of time.

4.3.2 Functional form used

The function that has been used to construct the composite index in this study, called the 'Expenditure Allocation Index' is a *linear index* which finds wide-spread use in economic studies like HDI, PQLI etc.A linear index gives equal weight to a given 'amount' of change, whereas a non-linear index gives a different weightage to a given 'amount' of change depending upon the level from which the change was made.

The present study is based on the analysis by Bhide and Panda(2002) who have made use of both linear and non-linear index. The non-linear index used by them draws largely from Kakwani(1993). However, as they find in their analysis, there was not much of a difference in the results from the two techniques therefore the present study makes use of the linear index.

It must be noted that there is wide disagreement over the relative merits of using a linear or a non-linear index in constructing a composite index. Kakwani (1993) demonstrates the superiority of using a non-linear function in constructing a composite

index to analyze the changes in the performance in the living standards across countries. His argument is built in the context of the variables that are used in measuring the improvement in the living standards. He argues that the non-income indicators usually have certain biological and physical limits to the maximum achievement possible. By taking a non-linear function a greater weightage can be given to an improvement from an already high level. However, Morris (1979) argues against this and notes that there is a lack of a strong evidence for using a non-linear index. In the context of the indicators like infant mortality, life expectancy etc, Morris (1979) argues that it is quite likely that the poor countries that rank low on an index face a greater difficulty in making an improvement as they do not have the requisite social organizations in place. In the context of government expenditures, however, Bhide and Panda (2002) have used both linear and non-linear indices and have found that the results do not vary much in both the cases. Since the present study also uses similar variables as those used by Bhide and Panda (2002), therefore, it follows a *linear index*.

In order to make the change in the different types of variables unidirectional, the methodology used by Morris (1979) in developing the PQLI has been used. Two types of formulations have been used here. Formulation (a) has been used for the indicators, an increase in whose value would show as an improvement and formulation (b) has been used for the others. These two functional forms have been stated below:

(a) $F(x) = [(x - m) / (M - m)] * 100$

    Where, M= maximum value of the indicator

    x = actual value of the indicator in a particular year

    m = minimum value of the indicator

This formulation is used for the indicators an *increase* in which shows an improvement in the expenditure allocation.

(b) $$G(x) = [(M - x) / (M - m)] * 100$$

Where, M = maximum value of the indicator

x = actual value of the indicator in a particular year

m = minimum value of the indicator

This formulation is used for those other indicators, a *reduction* in which shows an improvement in the expenditure allocation.

By using the above two formulations (a) and (b) , the values of the indicators are arranged in the uniform scale of 0 to 100 , where 0 shows the worst performance and 100 shows the best performance. Thus the variables are re-scaled in such a manner that the higher the value of the index of an indicator in a given year, the better is its performance. As a result of this, for the composite index also then, a higher value denotes a better performance.

The Expenditure Allocation index is then calculated as a simple average of the three indices-

$$EAI_j = \sum_{i=1 \text{ to } 3} X_{ij}/3$$

where 'j' stands for the Year

and 'i' stands for the index of composition

Thus, three steps are involved in constructing the composite index, which are the following- first, all the 9 variables expressed in terms of different denominators are converted into indices ranging between 0 and 100; second, a simple average of the 3 indicators each , as shown in chart 4.1 has been taken to arrive at the value of the 3 component indices, namely, the index of composition of capital, revenue and total expenditure; third, the composite indices have been again averaged to obtain the composite 'Expenditure Allocation Index'(EAI).

4.3.3 Limitations

It is important to note here that the selection of the maximum and the minimum values is a subjective issue. Morris (1979) discusses this issue at length. He argues that taking 0 and 100 as the minimum and maximum value is not desirable in the context of the 'quality of life' because these extreme values are seldom achieved. Most often, as he notes, the values of the indicators, like infant mortality, lie within a narrow range. In such a situation if a wide range of 0 to 100 is taken then that will lead to a 'concentration of all examples within a very narrow part of the 0 to 100 range and will not show the rank, spread and cluster effects that it is desirable to emphasize' (Morris,1979). To address this issue, Morris(1979) in constructing the PQLI uses a 'range' of the values for each indicator, based on a thorough examination of the *historical experience*. In order to overcome the anomalies involved in the selection of the range, Dholakia (2005) has made use of the *actually observed maximum and minimum values* over the period of study and added or subtracted 1 to these values to aid calculations. Datta *et* al (1997), on the contrary, argue that selecting the maximum and minimum values based on the actually

observed maximum and minimum values leaves no scope for a measurement in the improvement in the performance of the best performer. However, in the present study, the selection of the range can be based on the actually observed maximum and minimum values. This is because first, this study aims at evaluating the performance over a given historical period and does not extend into the future performance. Thus, the usual concern regarding the scope for improvement in the best performance of an indicator does not apply here. And second, the motive is to analyze the **direction of change** in the composition of expenditure over a given period. So, even if the maximum value is not the maximum that can be attained, it does not affect the objective of the study. While we will not be able to say whether the allocation during a given year was **the best that could have been achieved ever** but we will be able to say conclusively whether or not it is was **the best among the years that have been considered in the study.** Thus the maximum and minimum values used in the study correspond to the actually observed maximum and minimum values that have been achieved.

It must be noted that composite indices suffer from a serious drawback in the form of explicit and implicit weights that are assigned to the indicators. A change in the weight can alter the results considerably. This lacuna has been well recognized in the studies that use composite indices[18]. While an 'explicit' weight refers to the weightage that a component index gets in the process of 'averaging' to get a composite index; an 'implicit' weight refers to the weight given to individual indicators by the means of the 'range' that is used in calculating the indices. For example, if the range (maximum *minus* minimum) is taken to be large, then, the value of the indicator will be lower and thus its weight in the overall index will also be lower. Taking due note of this problem, Morris

(1979) uses an equal explicit weight in formulating the PQLI and reasons that 'whatever be the system of weights, as long as it remains unchanged, the index can be used to measure changes over a period of time'. Regarding the rationale for using equal weight, he states that 'there is no solution that can be applied automatically and there is no reason to treat any one indicator as more important' (Morris, 1979). Accordingly, in this study also, an equal weightage has been given to the three component indices of the composite index. Regarding the 'implicit' weights, this lacuna cannot be overcome and is a serious drawback in the system of using a composite index.

4.4 Data Source

The source from which the data has been obtained requires some explanation which is as follows. The statement of economic-cum-functional classification, prepared annually by the government, aggregates various sub-categories of social and economic services. However, as required in this exercise, allocation towards various sub-categories of economic services like rural development, agriculture and allied activities, energy, transport etc is required , which is not reported in the economic-cum-functional classification separately. This information is available in detail only in the yearly budget documents of the government of India. *Moreover , this study requires a further detail in the form of revenue and capital expenditures separately on all these functional expenditure heads.* This information is available only in annex-1 of volume-1 of the Expenditure Budget of the government[19].

From each year's Expenditure Budget, Volume 1, Annex-1, data on general services separately for interest and non-interest payments; revenue expenditure on agriculture, irrigation, rural development and other economic services; revenue

expenditure on social services; capital expenditure on general services; capital expenditure on social services; capital expenditure on agriculture and allied activities, irrigation, rural development energy, transport and communications, and other economic services was noted.

This, however, was not a straight forward task. The intricacies involved can be understood as under:

The data in Annex-1 is presented in the following way

(The table below has been reproduced only for explanatory purpose and details of various heads has been deliberately omitted to highlight only the essential components)

Part of Expenditure Budget, Volume 1, Annex-1

	Budget estimates	Revised estimates	Budget estimates
	Plan/ non-plan/ total	Plan/ non-plan/ total	Plan/ non-plan/ total
TOTAL REVENUE EXPENDITURE A. GENERAL SERVICES a. b c d interest payments and servicing of debt e f g B. SOCIAL SERVICES C. ECONOMIC SERVICES a. Agriculture and allied activities b. rural development c. Special area programme d. Irrigation e. Energy f Industry and minerals g. Transport h. communications i. Science, technology and environment j. general economic services.			

D. GRANTS-IN AID AND CONTRIBUTIONS			
TOTAL(capital, public debt, loans) CAPITAL EXPENDITURE A. Capital account of general services B. Capital account of social services C. Capital account of economic services a. capital account of agriculture and allied activities b. capital account of rural development c. capital account of special area programme d. capital account of irrigation and flood control e. capital account of energy f. capital account of industry and minerals g. capital account of transport h. capital account of communications i. capital account of science, technology and environment j capital account of general economic services. D. Grants-in-aid and contribution E. Loans and Advances Loans for social services Loans for economic services - Loans for agriculture and allied activities - Loans for special area programme - Loans for energy -Loans for industry and minerals -Loans for transport -Loans for science, technology and environment -Loans for general economic services Other loans			

The total capital expenditure stated as **TOTAL** in the above shown part of Annex-1 Volume 1 of the Expenditure Budget includes *capital expenditure, loans and public debts*. If we take 'capital expenditure' on agriculture and allied activities, then we must also add 'loans' for agriculture and allied activities to it which are mentioned separately. So for each year seven items of revenue expenditure, six items of capital expenditure on capital account and six items of capital expenditure through loans were extracted. This

was done for 13 years and then the capital account and loan components were added for each year.

4.5 Data Limitations

As must be clear by now, the data from Annex-1 denies us the accuracy that can be achieved from the 'actual' expenditure. The figures in Annex-1 are reported only for the budget and revised estimates of the 'current year' and the budget estimates of the 'forthcoming year'. Since revised estimates are more representative of the actuals therefore the entire data work is based on the revised estimates of the current year. It is worth noting that in the current year, that is 2011-12 budget, the government for the first time reported 'actuals' of 2009-10 in Annex-1 of Volume 1 of the Expenditure budget. However, since this has been introduced only this year, therefore, for the present study it is of little use.

It must be mentioned here that the expenditure on 'social services' in this study takes *all* the expenditure on social services and does not exclude the expenditure on information and broadcasting(IB), and secretariat expenditure. This detail was overlooked because of the fact that the expenditure on IB and secretariat forms a very small part of the total social sector expenditure. For instance, in the year 2008-09, expenditure on these heads was around 2% of the total social services expenditure. In other years also, the percentage was found to be almost similar. Given the complication involved in extracting the data and the small percentage of allocation on this account, this detail was therefore not taken into account.

4.6 Results

The Table 4.1 below shows the variables of the component indices as a percentage of GDP, which have been scaled-down on a scale of 0 to 100. For the variables SSC/GDP, AEC/GDP, IE/GDP, SSR/GDP, AER/GDP, CE/GDP, formulation (a) has been used to obtain the index values. These variables include expenditure on capital and revenue account on social sector and agriculture, and capital expenditure on infrastructure, and an increase in these will appear as an improvement in the EAI. For the remaining variables, namely, IP/GDP, RD/GDP and PD/GDP, formulation (b) has been used. These are interest payments, revenue deficit and primary deficit, as increase in which will show as a deterioration in the EAI. The results on the EAI and its component indices, viz, CI,RI and TEI have been presented in Table 4.2. A detailed discussion on these results follows in the next section.

Table-4.1 Expenditure on the variables of the component indices *(in percentages)*

Year	SSC/ GDP	AEC/ GDP	IE/ GDP	IP/ GDP	SSR/ GDP	AER/ GDP	CE/ TE	RD/ TE	PD/GDP
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1998-99	0.06	0.03	0.47	4.24	1.03	0.79	22.62	24.34	2.12
1999-00	0.06	0.02	0.55	4.50	1.03	0.83	16.69	23.55	0.93
2000-01	0.05	0.01	0.50	4.60	0.91	0.90	15.49	27.10	1.28
2001-02	0.08	0.01	0.56	4.52	0.95	1.09	16.50	28.22	1.50
2002-03	0.10	0.00	0.51	4.54	1.14	1.23	15.44	27.20	0.74
2003-04	0.08	0.01	0.49	4.35	1.13	1.16	23.48	20.88	0.06
2004-05	0.06	0.01	0.48	3.89	1.10	1.12	23.67	15.83	0.23
2005-06	0.07	0.00	0.44	3.51	1.31	0.99	13.45	18.25	0.51
2006-07	0.04	0.00	0.37	3.41	1.34	1.07	12.87	12.44	-0.13
2007-08	0.07	0.01	0.31	3.48	1.32	1.26	17.03	6.59	-0.98
2008-09	0.11	0.01	0.33	3.45	2.17	2.20	10.82	29.21	2.89
2009-10	0.11	0.00	0.42	3.35	2.08	1.68	11.28	32.65	2.99
2010-11	0.12	0.07	0.42	3.06	1.97	1.59	13.39	22.18	2.03

Source: Expenditure Budget, Volume 1, Annex-1, Ministry of Finance, Govt. of India.

Table-4.2 EAI and its component indices *(Figures here are index values)*

Year	CI	RI	TEI	EAI
1998-99	48.32	11.00	48.56	35.96
1999-00	53.87	6.38	44.17	34.81
2000-01	35.06	2.62	33.58	23.75
2001-02	57.09	9.85	32.89	33.27
2002-03	53.34	18.00	37.84	36.40
2003-04	46.35	20.05	72.56	46.32
2004-05	35.67	28.51	78.06	47.41
2005-06	33.86	39.13	46.06	39.68
2006-07	11.01	43.69	57.34	37.35
2007-08	18.47	46.33	82.76	49.19
2008-09	40.83	91.47	5.27	45.86
2009-10	48.56	79.03	1.18	42.92
2010-11	81.47	80.44	28.10	63.34

(Source: Calculated from data in Annex-1, Valome-1, Expenditure Budget, GOI various years. In the table, CI is Capital Index, RI is Revenue Index, TEI is Total Expenditure index. See Appendix A.4 to A.6 for the data used)

4.7 Discussion on the Results

Graphs 4.1 to 4.4 plot the values of the CI, RI, TEI and EAI shown in table 4.2. The actual changes in the observations in these variables, shown in table 4.1, shed light on the results obtained in Table 4.2.

Graph 4.1- CI

Graph- 4.2- RI

Graph 4.3- TEI

Graph 4.4- EAI
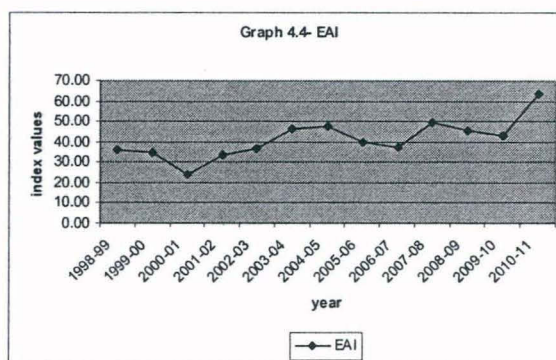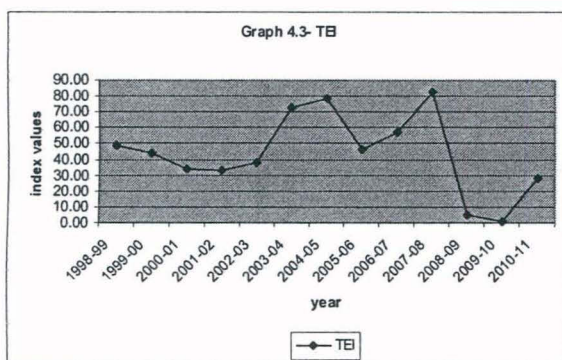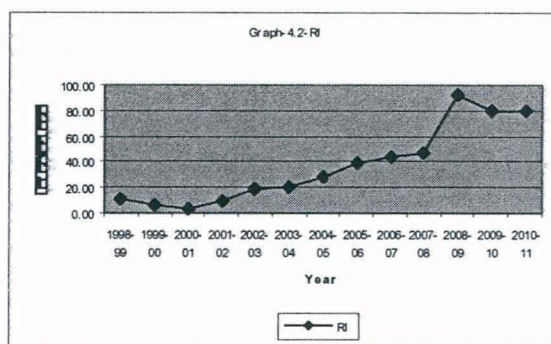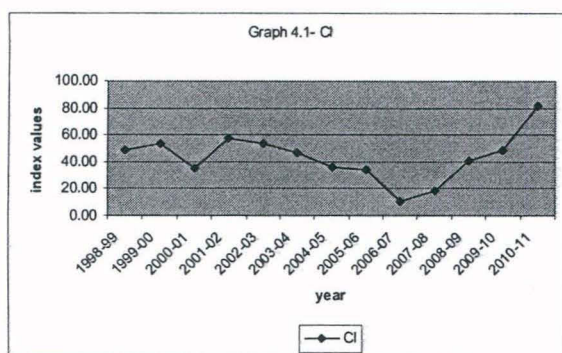
The *composition of capital expenditure*, as can be seen from Graph 4.1 above, deteriorated continuously from 2001-02 to 2006-07. Thereafter, the composition of capital expenditure improved. It may be noted in column (3) of Table 4.1 that the infrastructure expenditure as a percentage of GDP came down from a little more than 0.5% in 2000-01 to around 0.3% in 2007-08. At the same time, the capital allocation on social sector and agriculture also did not increase much, as is evident in column (1) and (2). This together caused the capital index to fall for a considerable part.

The *composition of revenue expenditure,* as can be seen clearly from Graph 4.2 above, unlike the capital expenditure, improved for most part of the period of the study. From 2000-01 onwards, the revenue index began to rise. There was a noticeable spike in 2008-09 in the allocation for revenue expenditure. On the other hand, Table 4.1(column 4 to 6) shows that, interest payments as a percentage of GDP decreased continuously, along with a rise in the revenue expenditure on social sector and the agriculture sector as a

percentage of GDP. These together led to an improvement in the revenue index throughout the period.

The *composition of the total expenditure*, as shown by the total expenditure index which comprises of both the level of capital expenditures and revenue expenditures and the primary deficit improved for most of the years taken under consideration. It may be noted from column (7) of the Table 4.1 that the 'level' of capital expenditure in the total expenditure did not record a unidirectional change. In two years from 2003-05, there was a rise in the capital expenditure. However, for most of the years it remained at a low level. This was despite the fact that the revenue deficit as a percentage of total expenditure fell secularly from 2001-02 to 2007-8 which can be noted from column (8) in Table 4.1. In column (9), in the same table, primary deficit as a percentage of GDP has been recorded. It can be seen that, a trend cannot be delineated for the primary deficit. However, it may be noted that it fell to a negative level for two years 2006-07 and 2007-08.

The composite index, EAI, taken together, *improved in the period before 2004-05* and *deteriorated in four out of six years*, in the period after 2004-05. This can be seen from Graph 4.4 plotted on the basis of the values enlisted in Table 4.2. In order to study the difference between the period before and after 2004-05, another series has been generated, taking 2004-05 as the base (=100) and converting the yearly values of EAI accordingly. The results have been shown in graph 4.5 below. This method of studying the index values has been adopted by Bhide and Panda(2002) also. They have taken 1980-81 as the base value and studied the change in the series with respect to that year.

Graph 4.5 EAI with 2004-05 as base

EAI(with 2004-05=100)													
	1998-	1999-	2000-	2001-	2002-	2003-	2004-	2005-	2006-	2007-	2008-	2009-	2010-
EAI(2004-05=100)	76	73	50	70	77	98	100	84	79	104	97	91	134
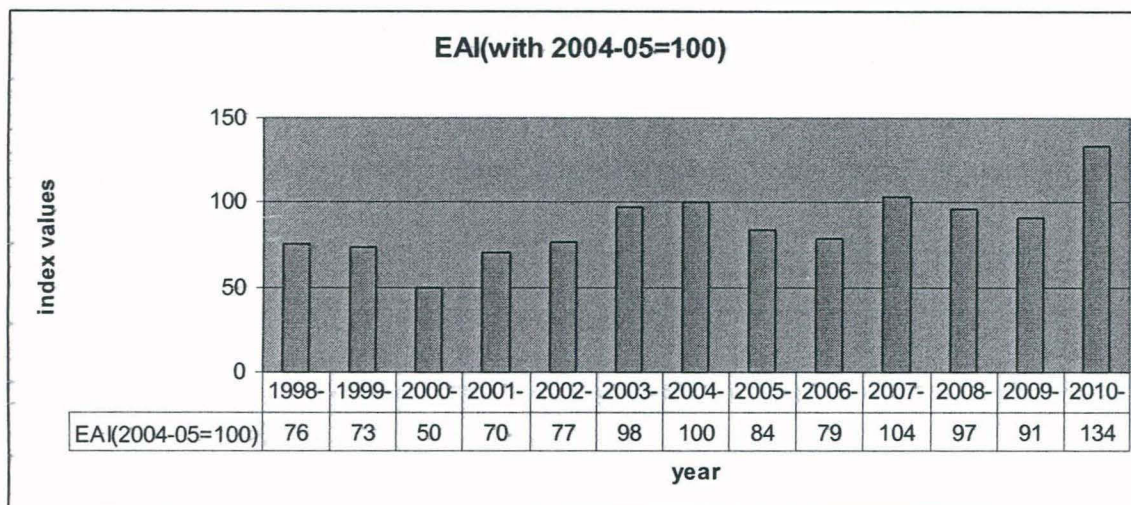
Graph 4.5 above, shows that the year 2010-11 recorded the highest value of the composite index. It may be noted that with respect to the year 2004-05, there was an improvement in the EAI from 2000-01 to 2004-05. However, in the period that followed, the index fell in 2005-06 and 2006-07. After an upturn in 2007-08, it declined again in the subsequent two years.

4.8 Conclusion

In this chapter, an attempt was made towards evaluating the changes in the composition of central government's expenditure by forming a composite index called the Expenditure Allocation Index. The concept was based on a similar study by Bhide and Panda (2002) on evaluating the 'quality of budgets' of the government of India. The components of the index in this study were, however, different as it took into account a greater detail in the composition of capital and revenue expenditures. Also the present study was temporally situated over a more recent period from 1998-99 to 2010-11. The results obtained on the index showed that over the period of study, the composition of

capital allocation deteriorated and that of the revenue expenditure improved. Out of the total expenditure, the level of capital expenditure recorded a fall despite a fall in the revenue deficits as a percentage of the total expenditure. The EAI, it was noted, was higher in the period before the FRBM and fell in the later period. Thus, over the period when the FRBM targets were being met, the 'composition of expenditure' of the central government, as indicated by the index used here, was found to be worsening.

Chapter-5

Summary and Conclusion

Over the past few decades, both developed as well as developing countries have turned towards greater fiscal prudence and have adopted fiscal responsibility legislations (FRLs) in varied forms. India also enacted an FRL, called the Fiscal Responsibility and Budget Management Act in 2003, in order to ensure the long-term sustainability of the debts. However, even before the FRBM Act came into being, the Indian economy had been subjected to a programme of fiscal consolidation, as a part of the stabilization-cum-structural adjustment programme in the 1990s.

'Fiscal consolidation' is generally expected to be achieved through an increase in the revenues and a cut-back on certain recurrent revenue expenditures that do not yield returns in the long-run. However, it has been found in various studies, that contrary to this, in most of the countries where fiscal consolidation was carried-out, there was a large-scale reduction in expenditures, with a cut-back on capital expenditures and on other important developmental expenditures like social sector expenditure which includes health, education, drinking water, nutrition and rural development, and economic services expenditure like agriculture, infrastructure, irrigation etc. The experience of India with fiscal consolidation during the 1990s, as noted in various studies has been similar, wherein a contraction in expenditure allocation to various crucial sectors without an increase in the revenue generating capacity in the economy was observed.

During the period of implementation of the FRBM Act, which may be called the second round of fiscal consolidation in the country, it was noted that the fiscal and the revenue deficits came down considerably. This achievement, to a large extent was

because of an upsurge in the revenue receipts of the government in this period. However, there are studies that have shown that even in this period, the expenditures on the 'level' of social and economic services, as a percentage of the GDP, decreased. A review of literature, however, reveals that as compared to the 90s, there are very few studies that have looked into the changes in the expenditure allocation in the 2000s.

The present study made an attempt towards presenting a comprehensive picture of the changes in the expenditure allocation of the government with the help of first a 'trend analysis' and then by using a 'composite index' to give a consolidated picture of the change (if any). The study temporally covers the entire period of the implementation of the FRBM and in order to evaluate whether there was an improvement or not from the previous period, it starts from an earlier period, specifically from the year 1998-99.

The specific objectives of the study were to first of all study the classification of expenditure of the government and trace the trend in their broad categories from 1998-99 to 2010-11; then to study the conceptual differences between different types of government deficits which are conventionally taken as the summary measures of the government's fiscal performance and finally to develop an alternate summary measure in the form of a composite index which could be used as a supplement to the existing measures of deficits.

An analysis of trend was carried-out for the broad division between revenue and capital expenditures and also for the three main functional categories of expenditure, namely, general, economic and social services expenditures. These variables were analyzed, over a period of time, in both nominal and real terms and also as a percentage of the total expenditure and GDP.

The trend revealed that, from 1998-99 to 2010-11, the revenue expenditure in nominal terms grew at an annual average growth rate of around 13.6% and that on capital expenditure grew at around 7.8%. When adjusted for the inflation during this period, it was noted that the two rates were 7.4% and 1.9% respectively. A higher growth rate in the revenue expenditure could be primarily because of the Sixth Pay revisions awarded in 2008-09 and also the stimulus package announced by the government in 2009 in response to the financial crisis. It was observed that, as a percentage of total expenditure and as a percentage of GDP, while revenue expenditure grew at a positive rate of around 0.8%, the *capital expenditure recorded a negative growth rate* of around 4%. Revenue expenditure, unlike capital expenditure, as discussed in the study, does not yield any long-term returns. For this reason a positive growth rate in the revenue expenditure and negative growth rate in the capital expenditure, does not augur well for the economy.

According to the functional classification of expenditure, it was noted that the expenditure on general services grew at 8% , which was much lower than 19% growth rate recorded on social and 16% growth rate in the economic services expenditure, in nominal terms. Again, in real terms, the allocation on general services grew at around 2% over this period, which was far below the 12% and 10% allocation on social and economic services expenditure respectively. General services expenditure is mostly meant for the general upkeep of the administrative machinery, for interest payments and for defence. As a percentage of the total expenditure and the GDP, it was noted that there was a negative growth rate in the general services expenditure, whereas, social and economic services grew at a positive rate. A lower allocation on this class of expenditures

vis-à-vis the other two developmental functional categories, namely, social and economic services, is good for the economy.

The allocation on the broad functional categories, however, is too aggregative in nature and it is important to know the end-use classification of these expenditures like infrastructure, which includes transport, energy and communication; agriculture, irrigation, health, education, interest payments etc. The allocation on these expenditures must be considered specifically, in order to infer whether the composition of expenditures improved or not.

The government conventionally makes use of various measures of deficits as an indicator of the overall fiscal health of the economy. A reduction in the gross fiscal deficit is usually the main policy objective in any fiscal consolidation programme. However, each measure of deficit holds a specific macroeconomic meaning and it is important to target the correct measure in accordance with the policy objective in mind. These measures of deficits can be classified on the basis of the 'means of financing' them and on the basis of the 'types of transactions'. On the basis of the former, there are monetized deficit and traditional budget deficit. On the basis of the latter, there are four measures of deficits, namely, fiscal deficit (gross and net), revenue deficit, effective revenue deficit and primary deficit (gross and net). The traditional budget deficit is not reported by the government anymore and the effective revenue deficit was introduced in the current fiscal year 2011-12.

A detailed discussion on the meaning of these deficits, summing-up the existing literature on this theme, delineated the conceptual difference between these measures of deficits. It was noted that these measures of deficits, while an important summary

measure of government's budgetary transactions, do not indicate the 'quality of expenditures'. 'Quality' here refers to the functions to which the revenue and capital expenditures are put to. In a study by Bhide and Panda(2001), it has been suggested that a composite index taking into account the 'qualitative' aspect of the different types of expenditures be used in conjunction with the conventionally used measures of deficits. Accordingly, the present study also makes use of a composite index in evaluating the changes in the overall composition of expenditure of the government.

In this study, the index used by Bhide and Panda(2002) has been altered to cover only expenditure allocation and a greater detail in the 'quality' of expenditures has been taken into account. Also, the exercise has been extended for a more recent period. The functional form used here is on the lines suggested by Morris (1979).

The composite index, called the expenditure allocation index, comprises of three 'component indices', depicting the composition of capital and revenue expenditures and their level in the total expenditure.

The findings can be summarized as the following: It was noted that during the period of study, the composition of capital deteriorated and the composition of revenue expenditure improved. The index to total expenditure improved for most part of the study.

Within capital index, it was infrastructure sector which includes transport, communication and power, suffered a major decline. The improvement in revenue expenditure was due to a fall in the expenditure on interest payments and a rise in the allocation towards social and agriculture sectors. More specifically, revenue expenditure on social services like health, education etc and rural development, and expenditure on

agriculture and allied activities, and irrigation increased. This could be because of the introduction of various flagship programmes of the government like Bharat Nirman, NREGA, NRHM etc in this period. The total expenditure index improved owing to an improvement in the revenue and primary deficits. However, the proportion of capital to total expenditures recorded a fall.

Thus there has been a lop-sided allocation, tilted in favour of the revenue expenditure. While the revenue expenditure improved in terms of its sustainability and composition, there was a fall in both, the 'level' and the 'composition' of capital expenditure. It was noted that capital expenditure on crucial sectors like agriculture, rural development, irrigation and infrastructure declined throughout the period. This trend, to a large extent could be because of the nature of allocation in the form of centrally sponsored schemes and the manner in which the capital projects are implemented. A detailed enquiry into the same is, however, beyond the scope of this study.

The overall index, EAI, improved from 2000-01 to 2004-05 and largely deteriorated from 2004-05 to 2010-11.The period in which the index recorded a decline coincided with the period when the government successfully achieved its FRBM targets. Thus, at a time when the deficit targets were being met, the overall composition of the expenditure worsened as compared to the period that preceded it.

To conclude, it may be said that, the recent spate of central government schemes, has led to a rise in the revenue expenditure on the social and economic sectors , however, the capital allocations within these is highly inadequate. While the overall level of revenue expenditures has been reined-in but the level of capital expenditures is dismal. It is noteworthy that the improvement in both, the level and composition of revenue

expenditure was to a large extent because of a fall in the 'interest payments'. It is important to ascertain whether such a reduction in interest payments is temporary in nature or a long-run phenomenon. If it is a temporary reduction, then, in the wake of a downward trend towards capital expenditure, the divergence between the conventional measures of deficits and the composition of expenditure would only enlarge over time.

Appendix

A.1 Central Government Expenditure in 'Nominal' Terms

year	revenue expenditure	capital expenditure	general services	social services	economic services	total expenditure	GDPmp (at *current prices*)
1998-99	216461	62878	7786	19750	30811	279340	1822357.5
1999-00	249078	48975	8088	23406	32557	298053	2031355.4
2000-01	277839	47753	7786	25222	38911	325592	2187739.8
2001-02	301468	60842	7835	28462	46787	362310	2371555.3
2002-03	338713	74535	8712	29349	54833	413248	2554300.1
2003-04	362074	109129	9031	32336	60851	471203	2866551.7
2004-05	384329	113923	11754	39123	61804	498252	3239224
2005-06	439376	66362	10420	49535	77131	505738	3706473
2006-07	514609	68778	10798	55246	95286	583387	4283979
2007-08	594433	118238	11736	78818	98554	712671	4947857
2008-09	793798	90158	15683	110542	136662	883956	5582623
2009-10	911809	112678	17630	122345	152311	1024487	6550271
2010-11	1053677	162899	20059	162501	202033	1216576	7877947

Source: Annex 3, 3.2 and 3.3; Volume 1, Expenditure Budget, Ministry of Finence, Government of India. All values are 'Actuals'. Values for year 2010 are Revised Estimates.

A.2 Central Government Expenditure as a percentage of Total Expenditure

year	revenue expenditure	capital expenditure	general services	social services	economic services	total expenditure	GDPmp (at *current prices*)
1998-99	77.49	22.51	2.79	7.07	11.03	100	-
1999-00	83.57	16.43	2.71	7.85	10.92	100	-
2000-01	85.33	14.67	2.39	7.75	11.95	100	-
2001-02	83.21	16.79	2.16	7.86	12.91	100	-
2002-03	81.96	18.04	2.11	7.10	13.27	100	-
2003-04	76.84	23.16	1.92	6.86	12.91	100	-
2004-05	77.14	22.86	2.36	7.85	12.40	100	-
2005-06	86.88	13.12	2.06	9.79	15.25	100	-
2006-07	88.21	11.79	1.85	9.47	16.33	100	-
2007-08	83.41	16.59	1.65	11.06	13.83	100	-
2008-09	89.80	10.20	1.77	12.51	15.46	100	-
2009-10	89.00	11.00	1.72	11.94	14.87	100	-
2010-11	86.61	13.39	1.65	13.36	16.61	100	-

(Calculated from Table A.1)

A.3 Central Government Expenditure as a percentage of GDP

year	revenue expenditure	capital expenditure	general services	social services	economic services	total expenditure	GDPmp (at current prices)
1998-99	11.88	3.45	0.43	1.08	1.69	15.33	100.00
1999-00	12.26	2.41	0.40	1.15	1.60	14.67	100.00
2000-01	12.70	2.18	0.36	1.15	1.78	14.88	100.00
2001-02	12.71	2.57	0.33	1.20	1.97	15.28	100.00
2002-03	13.26	2.92	0.34	1.15	2.15	16.18	100.00
2003-04	12.63	3.81	0.32	1.13	2.12	16.44	100.00
2004-05	11.86	3.52	0.36	1.21	1.91	15.38	100.00
2005-06	11.85	1.79	0.28	1.34	2.08	13.64	100.00
2006-07	12.01	1.61	0.25	1.29	2.22	13.62	100.00
2007-08	12.01	2.39	0.24	1.59	1.99	14.40	100.00
2008-09	14.22	1.61	0.28	1.98	2.45	15.83	100.00
2009-10	13.92	1.72	0.27	1.87	2.33	15.64	100.00
2010-11	13.38	2.07	0.25	2.06	2.56	15.44	100.00

(Calculated from Table A.1)

A.4 Central Government Expenditure in 'Real' terms.

year	revenue expenditure	capital expenditure	general services	social services	economic services	total expenditure	GDPmp (at current prices)	GDP deflator
1998-99	27117	7877	975	2474	3860	34994	228294	7.98
1999-00	65539	12887	2128	6159	8567	78425	534500	3.80
2000-01	78798	13543	2208	7153	11036	92342	620468	3.53
2001-02	99585	20098	2588	9402	15455	119683	783401	3.03
2002-03	89230	19635	2295	7732	14445	108865	672898	3.80
2003-04	101821	30689	2540	9093	17112	132510	806121	3.56
2004-05	91453	27109	2797	9310	14707	118562	770792	4.20
2005-06	93762	14161	2224	10571	16460	107923	790951	4.69
2006-07	91640	12248	1923	9838	16968	103888	762878	5.62
2007-08	111161	22111	2195	14739	18430	133272	925269	5.35
2008-09	108223	12292	2138	15071	18632	120514	761108	7.33
2009-10	119986	14827	2320	16100	20043	134814	861959	7.60
2010-11	109582	16941	2086	16900	21011	126524	819306	9.62

(Calculated by deflating the figures given in Table A.1.
Data for GDP deflator calculated from GDP at constant prices and GDP at current prices from RBI database. GDP figures for 2009 and 2010 obtained from CSO)

A.5 Expenditure on Capital account (nominal terms)

CAPITAL EXPENDITURE			
Year	SSC	AEC	IE
1998-99	1147	615	8486
1999-00	1216	488	11113
2000-01	1024	207	10856
2001-02	1839	282	13195
2002-03	2564	-108	13082
2003-04	2343	158	13927
2004-05	1815	190	15693
2005-06	2455	165	16491
2006-07	1603	141	15802
2007-08	3353	450	15472
2008-09	6160.5	789	18480
2009-10	7423.2	175	27224
2010-11	9291.8	5592	33161

SSC- Social sector expenditure on *capital* account. Social sector is defined as the sum of expenditure on social services and rural development.

AEC- Expenditure on agriculture and allied activities, and irrigation on *capital* account.

IE- *Capital expenditure* on infrastructure

A.6 Expenditure on Revenue account (nominal terms)

REVENUE EXPENDITURE			
Year	IP	SSR	AER
1998-99	77248	18739	14373
1999-00	91425	20864	16936
2000-01	100667	19870	19681
2001-02	107257	22532	25773
2002-03	115994	29162	31529
2003-04	124555	32285	33231
2004-05	125905	35735	36440
2005-06	130032	48620	36868
2006-07	146192	57380	45823
2007-08	171971	65315	62375
2008-09	192694	121005	122827
2009-10	219500	136237	110045
2010-11	240757	155562	125106

IP- expenditure on interest payments

SSR-Social sector expenditure on *revenue* account. Social sector is defined as the sum of expenditure on social services and rural development.

AER-Expenditure on agriculture and allied activities, and irrigation on *revenue* account.

A.7 Capital Expenditure , Revenue Deficit and Primary Deficit

Year	CE	RD	PD
1998-99	63773	68629	38647
1999-00	50702	71523	18946
2000-01	51987	90912	28061
2001-02	60131	102856	35681
2002-03	62365	109900	18929
2003-04	111367	99009	1603
2004-05	119722	80056	7406
2005-06	68410	92833	18985
2006-07	74870	72380	-5369
2007-08	120787	46722	-48357
2008-09	97507	263187	161295
2009-10	115192	333544	196042
2010-11	162899	269844	160241

CE - Capital expenditure
RD- Revenue deficit
PD- Primary deficit

END NOTES

[1] Discussed in detail in section 2.3

[2] The following discussion draws primarily from Nayyar(1996)

[3] Y=C+I+G-T+X-M(national income identity *ex-post*)
Where, Y=aggregate output, C= private final consumption expenditure, G=government final consumption expenditure, T=taxes, X= exports and M=imports.
or Y-C=I+G-T+X-M
or (G-T)= (S-I) + (M-X)
An increase in G-T must be matched by an increase in either or both S-I and M-X.

[4] FRBM ACT 2003 required that the revenue deficit should be eliminated by 2007-08. An amendment to this ACT, which was a part of the Finance Bill laid in the Parliament on July 8th, 2004, proposed to shift this date to 2008-09.

[5] See for example (Gandhy,2010; Lalvani,2006)

[6] See section 3.4 for a detailed discussion on social and economic services.

[7] Since the combined (revenue plus capital) allocation on these two categories has been reported in this study, therefore, these have been cited as an example.

[8] Compound annual growth rate can be calculated from the following formula
$Y=A(1+r/100)^t$
Where, 'Y' is the amount due after 't' years
And 'A' is the initial value compounded at the rate of 'r'
Taking natural log on both the sides,
$\quad$ Ln Y=Ln A + t Ln (1+r/100)
or $\quad$ Ln Y= Ln A + t Ln X
or $\quad$ Ln Y= a + bt
This is a log-lin model.
The antilog of b *minus* 1 gives the value of the compound annual rate of growth which is 'r'.

[9] GDP series was officially changed to 2004-05 base, from the earlier 1999-00 base. In the present study, the recent 2004-05 series has been followed and an estimate of the figures before 2004 has been obtained by using 'Splicing' technique.

[10] The discussion here draws largely from the World Bank(1988)

[11] Treasury Bills are securities issued by the Government of India. These can be both short-term and long-term in nature. 'Adhoc' treasury bills are 91-day bills purchased only by the RBI. Whereas 'ordinary' treasury bills can be, both short-term and long-term in nature and can be sold to the general public and banks.

[12] This discussion draws from Rangarajan(1989), Reddy(1997).

[13] This can be understood by considering the balance-sheet identity of the RBI.

Monetary-liability + Non-monetary-liability = Financial assets + Other assets
Monetary liability = Financial assets + Net Non-Monetary liability
where,

Monetary liability= Reserve Bank Money (RBM) which comprises of all currency notes other than 1-rupee notes *plus* deposits of banks with the RBI *plus* Other deposits of the RBI.

Financial Assets are the assets acquired by the RBI as a result of its transactions with others in discharge of its Central Banking functions.

Purchase of government securities increases the RBI's **assets** in its balance sheet. To match this, an equivalent amount of **liability** (monetary liability) in the form of 'money' is to be created.

[14] These concepts have been drawn from Dornbusch (2005) and Gupta(2004)

[15] Ad hoc treasury bills as a means of financing the government's deficits emerged in the mid-50s. It was agreed between the Central government and the Reserve Bank of India that a minimum cash balance of Rs 50 crore on Fridays and Rs 4 crore on other days must be maintained by the Central government in order to ensure the smooth functioning of its activities. In order to facilitate this, it was decided that the RBI would replenish the government's cash balances by creation of ad hoc Treasury Bills in favour of the RBI. (Reddy,1997)

[16] Net non-debt creating capital expenditure of the central government is equal to capital expenditure *minus* those capital receipts which are non-debt creating like *grants* received by the government.

[17] See, for example Nayyar (1996), Ramkumar(2008)

[18] See for example Morris(1979) , and Morris and Mc Alpin(1982).

[19] Expenditure budget, volume 1 is divided into four parts. Part 1 gives general summary of expenditure and ministry-wise allocations. Part two gives the detail of non-plan expenditure and part three gives the detail of plan expenditure. Non-plan expenditure is a generic term and refers to all the expenditures of the government which are not included in the plan. It may be either revenue or capital in nature. Thus parts 1, 2 and 3 cannot be used for the purpose. In the annexes, annex-1 gives 'Budget Provisions by Heads of Accounts' and annex-3 gives 'Trends in Expenditures'. It is in these annexures that the detail required for our analysis is available. In Annex 1 data is reported in the following way- the entire statement is horizontally divided into revenue and capital expenditures and vertically divided into plan and non-plan expenditures giving budget estimates and revised estimates of the current year and budget estimates of the forthcoming year. Annex-3 also gives detailed data on the economic, general and social services for a period of 10 years. However, annex-3 does not divide the different types of expenditures into revenue and capital. This detail is indispensable because we need to know the change in the 'quality' of revenue and capital expenditures separately over a period of time. Thus, annex-3 cannot be used and for the present study, data from annex-1 has been made use of.

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