Debt Sustainability and the Fiscal Responsibility and Budget Management (FRBM) Act in India

A THESIS

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By

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DECLARATION

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I hereby declare that, the work presented in the thesis entitled "Debt Sustainability and the Fiscal Responsibility and Budget Management (FRBM) Act in India" has been carried out by me under the supervision of Prof. B. Kamaiah, Department of Economics, University of Hyderabad, and to the best of my knowledge no part of this thesis was earlier submitted for the award of any research degree or diploma of any University.

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This is to certify that, the research embodied in the present thesis entitled “Debt Sustainability and the Fiscal Responsibility and Budget Management (FRBM) Act 2003 in India” has been carried out by Mr. Nagarjuna Srinivasa Rao under my supervision for the full period prescribed under PhD ordinances of the University and no part of this thesis was earlier submitted for the award of any research degree or diploma of any University.

Signature of the Supervisor
(Prof. B.Kamaiah)

Head of the Department

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Nagarjuna Srinivasa Rao

CONTENTS

LIST OF ABBREVIATIONS

IMF	-	International Monitory Fund
GDP	-	Gross Domestic Product
OECD	-	Organization of Economic Cooperation and Development
RBI	-	Reserve Bank of India
CAG	-	Comptroller and Auditor General of India
LIC	-	Low Income Companies
PVBC	-	Present Value Budget Constraint
GNP	-	Gross Net Profit
EAC	-	Economic Advisory Council
GFD	-	Gross Fiscal Deficit
RD	-	Revenue Deficit
FD	-	Fiscal Deficit
PD	-	Primary Deficit
EU	-	European Union
HIPC	-	Highly Indebted Poor Countries
MDRI	-	Multilateral Debt Relief Initiative

FRL	-	Fiscal Responsibility Laws
MTPS	-	Medium Term Policy Statement
FPSS	-	Fiscal Policy Strategy Statement
MEFP	-	Macro Economic Framework Statement
DSA	-	Debt Sustainability Analysis
VaR	-	Value at Risk
CPIA	-	Country Policy Institutional Assessment
NPV	-	Net Present Value
BIS	-	Bank of International Settlements
TFC	-	Thirteenth Finance Commission

CHAPTER – I

STUDY BACKGROUNG AND RESEARCH PROBLEM DEFINED

1.0 Background:

Sustainable debt has been considered to be a precondition for long term development of the economy. Given persistent deficits, and use of debt to curb them, sustainability of public debt poses a challenge not only to public policy design but also to economic wellbeing. In recent decades, governments have built up substantial debt (both public and external), which are often accompanied by growing fiscal deficits based on lopsided policies that neglect long-term implications. Analysis of a country's debt sustainability has been a complex task given the issues related to: i) establishing the actual quantum of debt outstanding including all sovereign guarantees and future debt-service obligations; ii) defining appropriate and measurable sustainability indicators; and (iii) forecasting future key macroeconomic variables such as gross domestic product growth, government expenditure, interest rates, inflation rates, exports, current account balances and exchange rates.

Projections relating to the macroeconomic variables are very critical as the debt sustainability analysis is necessarily a forward-looking exercise and highly sensitive to changes in these macroeconomic parameters. As far as sustainability of a fiscal policy framework is concerned, what is relevant is its impact on long-term economic growth and real rates of interest. This study dwells on a comprehensive analysis of debt sustainability in India to demonstrate the key concepts and complexities involved in such analysis.

1.1 Research Gaps

Traditionally, debt management policy was not considered a separate macroeconomic policy, but was always as a part of either fiscal or monetary policies, for managing the volatility of debt servicing cost through sound debt management has clear implications for securing short-term fiscal space as well as management of long-term fiscal risks. Debt management has also been an important factor for the conduct of monetary policy, given the management of composition of assets available to the public. Most of the analysis on debt management has followed the above pattern: for example, the tax smoothing methodology deals with the role of debt management in support of fiscal policy, whereas the time consistency 'school' assigned its role in support of monetary policy while analyzing debt management (Rangarajan and Srivastava (2003)).

There is a growing consensus among several economists and practitioners that debt management should be treated as a separate macroeconomic policy with its own policy objectives and assignment of a separate policy instrument. This trend was started by the New Zealand government in the 1990s, when the government recognized that without proper policy assignment and accountability framework for debt management, the risk remained that the fiscal targets set in the newly adopted Fiscal Responsibility Act would not be met. In the late 1980s and early 1990s, heavily indebted countries in Europe such as Belgium, France, Ireland, and Portugal took the decision to decentralize debt management to varying extent, in order to reduce variability of debt service cost that could jeopardize the targets set by the Growth and Stabilization Pact (established between members of OECD organization). In the U.K., debt management responsibilities were taken out of the Bank of England in order to eliminate even the perception of conflict of interest in conducting debt management and monetary operations. The resultant policy mix could be a liquidity crisis which

could force the fiscal authority to adjust i.e., they may have to cut expenditures and/or raise tax revenues during a recession or a crisis, forcing the fiscal authorities to conduct a pro-cyclical fiscal policy, accentuating recessions and booms.

One of the key policy implications of debt management is that the initial debt to GDP ratio should be lower, or the desired primary surplus should be higher. The higher the risk premium charged higher is the vulnerability arising from poor debt structures, given greater vulnerability of emerging market economies. The IMF has calculated that the maximum sustainable debt level in these countries was much lower than the equivalent for OECD countries. Another key policy consideration could be a closer examination of the cyclical characteristics of monetary policy and its impact on debt management. For example, Kaminsky, Reinhart and Végh (2004) showed that monetary policy tends to be conducted pro-cyclically in developing countries. Coupled with the pro-cyclical tendency of fiscal policy it would be useful to examine the implications of debt management on pro-cyclical monetary policy.

In the light of the above, the following are key gaps in the analyses:

i. In the available studies of debt sustainability in the Indian context; there is lack of substantial sustainability assessment of public debt in different scenarios
ii. There is no comprehensive debt sustainability assessment of debt held by the Government of India
iii. There are no studies on the assessment of sustainability of debt in the light the of FRBM Act 2003
iv. There are no studies dealing with detailed analysis on effectiveness of FRBM Act 2003

1.2 Need for the Present Study

In the light of research gaps mentioned above, there is a need for comprehensive study on debt sustainability in the Indian context. The present study seeks to cover these gaps in analyses. The key focus of the current study is on the macro economic implications of growing Debt/GDP ratio and Fiscal Deficit (FD)s of both the central government on government revenues and expenditure and the manner in which the long term fiscal policy, especially the rule based fiscal monitoring through Fiscal Responsibility and Budget Management (FRBM) Act 2003 is executed / implemented in trying to bring about fiscal stability. The study also focuses on the role of medium term fiscal strategy in controlling the growing debt and fiscal deficits.

Further, the present study attempts to analyze the effects of growing debt on the revenues, expenditure growth, interest rate, inflation and resource allocation of the Govt. of India. Against the backdrop of introduction of FRBM in 2003 and the subsequent amendments and changes brought out by the Union government, it is imperative that a deeper analysis of fiscal effects of expenditure and revenue of the Union Government is required to go into the factors affecting sustainability of debt and its overall impact on the fiscal well being. Further, the sequential changes brought out by Government of India in its fiscal policy after the implementation of FRBM Act 2003 are also to be studied with respect to their impact on the public debt and other key macroeconomic parameters such as GDP growth and interest rates. This study also focuses on the allocative efficiency of the government and gauges whether it is getting compromised due to the growing burden of interest payments and weight of public debt.

Additionally, it is desirable to examine the level of indebtedness of the Government of India from 1990-91 till the enactment of FRBM Act in 2003, and to study the impact of FRBM on fiscal sustainability after 2003 until 2010. The study analyzes the fiscal policy, public expenditure management, and the manner in which these policies have impacted the debt management of Government of India and the overall combined debt sustainability of the centre and the states. Further, it is also desirable to look at the appropriate level of public debt which is considered optimal with the current level of economic growth and inflation. Also, there is a need to specifically focuses on the implementation of FRBM Act 2003 to reduce public debt in India.

1.3 Objectives of the Study

In the light of this background, the major objectives of the study are formulated as follow:

The first objective is: i) to undertake an overview of different theories and perspective on debt sustainability, ii) to present various alternative paradigms in respect of fiscal deficit and the macroeconomy , and iii) to asses debt sustainability .

The second objective is to provide the theoretical background of fiscal rules, and to trace the evolution of public debt in India.

The third objective is empirically examine the fiscal sustainability in terms of government expenditure and revenue.

The fourth objective of the thesis is: i) to provide an overview of rules to sustain debt and to discuss the current scenario since the passing of the FRBM Act 2003, ii) to

critically asses theoretical and operational definitions of debt sustainability, and iii) to review the implementation

1.4 Methodology and Data

This study follows the same methodology as adopted by RBI for compilation of outstanding liabilities which include reserve funds, deposits and advances and contingency funds of State Governments as given in 2007-08 study of state budgets and uses the same data sources such as Union budget documents and State Government budget documents and CAG reports. The analysis pertains to the period 1990-91 to 2002-03 which is referred to as post liberalization phase, and that of post FRBM phase starting from 2003-04 to 2009-10. The study also analyses various fiscal policy changes and other economic reform measures during both the phases and their consequent effects on fiscal and debt sustainability during those periods. This study examines the overall level of indebtedness of the Government of India and that of states along with an in depth analysis of the factors contributing to the growth of public debt in India.

1.4.1 Approach to the Study

It may be noted that there has not been a general consensus on how to define and assess fiscal sustainability of public debt. The standard way adopted in most countries is in terms of the Government's ability to remain solvent with a given set of fiscal and monetary policies, through which a government's ability is reflected in financing a deficit through public borrowing. In this context, the size of the government's fiscal deficit or the ratio of FD/GDP provides a proxy measure of fiscal sustainability. Alternatively, fiscal sustainability can be assessed by looking at the

level of government's outstanding liabilities (internal and external) which have been accumulated to finance the fiscal deficit, and its servicing in relation to GDP, revenue receipts, and government expenditure. This approach is adopted for the present study.

1.4.2 Statistical Tools and Techniques

The statistical tools utilized for carrying out the empirical analysis in this study include: ratio analysis, trend analysis, regressions, recursive residual stability tests, unit roots and co-integration analysis. The data utilized for this study include the historical time series data on taxes, expenditure, revenue and public and external debt published by the Ministry of Finance, Govt. of India and the Reserve bank of India

1.5 Organization of the Thesis

The thesis is organized into six chapters. The first chapter provides the general background of the study and also highlights the need of the study along with the scope and limitations. It also provides a brief overview of the analysis including data and methodology utilized. Chapter II provides a brief review of previous and current debt sustainability studies and their influence on crafting debt management solutions in different countries. Chapter III outlines the evolution of Public Debt in India. Chapter-IV presents a model of debt sustainability assessment and its empirical validation. The fifth chapter discusses sustainability further in the context of introduction and usefulness of FRBM approaches to perpetuate sustainability and finally, concluding observations and policy implications of the findings of the study are presented in the last chapter.

1.6 Scope and Limitations of the Study

This study analyzes different debt sustainability assessment methods and the impact of various factors like time horizon, deficit measures and others on sustainability in real world situations. This study also tries to analyze sustainability of debt in India over the past 20 years since the economic reforms have been ushered in 1991, with a particular emphasis on the impact of FRBM Act 2003 on debt sustainability. The modified Quintos (1995) model is selected over the other analytical models like Value at Risk (VaR), IMF models etc. to assess the sustainability of public debt in India. Additionally, the plausible reasons for the non-compliance with FRBM Act 2003 goals and implications for policy makers.

Out of scope is the analysis of oil and other subsidies on debt and external debt, the discussion on the political and exigency causes that affected the goals of FRBM Act 2003, and institutional effectiveness and accountability in implementing the FRBM Act 2003.

The study is proscribed by

i. The limited size of the dataset – only 20 years of data since the ushering of the reforms and public finances data of six (6) years (the post FRBM Act 2003 era)

ii. Lack of precise data on indirect and hidden debts, very unique to India – oil, agriculture and other social subsidies

iii. Lack of information on the relationship between financial data and policy implications and institutions

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CHAPTER – II

DEBT SUSTAINABILITY: A HISTORICAL PERSPECTIVE

2.0 Introduction

This chapter aims to provide an overview of different theories on debt sustainability – classical and neo-classical. It also provides a discussion on the definition of debt sustainability, its assessment and its relevance in the context of the current study.

2.1 Debt Sustainability: Classical and Keynesian Views

Early writings on fiscal policy sustainability date back to classical economists like Hume, Smith, and Ricardo, who analyzed public debt mainly in terms of its general effects on the economy. Government debt neutrality (i.e., the hypothesis that deficit and tax financing of government budgets are equivalent with respect to capital accumulation) and the intergenerational distribution of the debt burden, were first discussed by Ricardo. In his seminal work, Ricardo pointed out the possibility of public debt neutrality, which subsequently became the ‘‘Ricardian equivalence theorem,’’ which was subsequently revived and analytically derived by Barro (1974).

The issue of generational distribution of debt burden was widely discussed since the time of classical economists. As per the Keynesian approach, markets are generally unable to ensure full employment of given resources, hence debt finance was necessary to ensure an adequate level of aggregate demand because intended savings cannot be fully absorbed by private investments. Government budget deficits and hence rising government debt do not pose particular problems as they are not harmful, and they are desirable in times of low aggregate demand and high unemployment to restore the full-employment equilibrium.

In the wake of the Keynesian approach, according to which markets are usually not able to ensure full employment of available resources, the ‘‘real resources view’’ argued that debt finance was necessary to ensure an adequate level of aggregate demand because intended savings cannot be fully absorbed by private investments. In addition, the Keynesian view also endorsed the position originally held by Ricardo that the burden of public debt is completely shouldered by the generation that issues the debt. The real resources view argues that this holds because current generations pay the opportunity cost of financing the debt, while debt service and repayment is only a transfer from taxpayers to bondholders, given that the debt is held within the respective country.

2.2 Debt Sustainability: Additional Perspectives

The theory of tax smoothing by Barro (1979) is based on the neoclassical assumptions by which public debt and deficits can be welfare improving. In every period, the government needs to finance a given amount of spending, which is financed by a tax. The important finding in Barro (1979) is that the social planner should keep the tax rate constant. The level of taxes is determined by the government’s intertemporal budget constraint, according to which the present value of spending, which is exogenously given in the model, should equal the present value of taxes. Budget deficits and surpluses are used as a buffer when spending is temporarily high or low, or revenues are temporarily low or high, respectively. The tax smoothing policy is dominant in welfare terms, as the distortion caused by taxation increases more than proportionally in the tax rate. Hence, the distortion of a large tax rate in one single period is larger than the net present value of several small distortions caused by a tax smoothing policy. Another rationale that justifies a positive level of public debt

relates to intergenerational equity. Government spending today in the form of public investment, or as an expenditure on structural reforms which have upfront costs can benefit future generations. If this spending today is financed by current revenues only, the generation living today is forced to bear all the costs but will not be able to reap the full benefits of public expenditure.

However, if policies that deliver long-term economic benefits but require significant investments in the short run, are financed by issuing of public debt, future generations will also contribute to the cost in terms of debt servicing in the long run. The importance of debt finance for public expenditure in the form of capital investments was increasingly recognized and the so-called golden rule that deficits be allowed up to the level of public investments even made it into the German constitution. Today, the exclusion of public investments from the calculation of deficit levels relevant for the EU's Stability and Growth Pact is also suggested by policymakers and economists.

2.3 Debt Sustainability: Other Previous Studies

Several debt sustainability studies have focused on the solvency levels of indebted countries. In March 2009, the IMF analyzed the debt situation of seventy one low-income countries (LICs) and classified twenty-eight countries as high risk under its baseline projections. In another study, the IMF expressed serious concern for middle-income countries that were classified as 'emerging economies'. In contrast to the LICs, external borrowers in these countries viz., governments, banks, and major corporations mainly draw from private sources of funds. An essential feature of the study is the sovereign nature of the debtor governments. Lending to governments has traditionally been deemed the least risky of credits because government's powers of

taxation and overall budget management give them the ability to cover their financial obligations. However, there are times when the social costs of doing so can be enormous. How much stress governments of emerging and low-income countries will sustain rather than default on their sovereign debt is an especially a pressing question in the current global economic scenario which is undergoing rapid changes particularly in the financial sector. Most recent instance is Greece, which is grappling with a Hobsons' Choice of default and living with the EU's diktats, where either choice could lead to serious social and economic discontent and losses.

There is no internationally accepted system of law or procedure to address sovereign bankruptcy. For this reason, and because some of the debt is owed to official creditors, debt has usually been restructured through informal negotiations and voluntary processes. In this respect, the treatment of sovereign debt crises is political at its core, in the sense that it involves relations among states even if private entities are part of the deal. Sovereign insolvency is also political in another sense that the sovereign debt crises have become the foci of internationally political movements. Most prominent among these is the Jubilee 2000 campaign for debt cancellation for the poorest countries.

The effects of government debt on growth and welfare are one of the most frequently discussed subjects in the economic literature. The issue of 'burden of debt' and decreasing of capital stock arising from increase in government debt (crowding-out effect) are clearly illustrated by Domar (1944), Malinvaud (1953) and Modigliani (1961). In his seminal contribution, Arrow (1962) argues that the learning process is related to the acquisition of experience, which can be measured by the cumulative level of investments. In his words "each new machine produced and put into use is

capable of changing the environment in which production takes place, so that learning is taking place with continually new stimuli" (p. 157). Diamond (1965) analyzes the effects of a positive stock of debt on the long-run competitive equilibrium of an economy with neoclassical theories. He shows that government debt causes a decline in the utility level when the equilibrium is dynamically efficient, but may increase the utility when the economy is dynamically inefficient. Ihori (1978) studies the effects of government debt on the long-run optimal conditions and analyzes the growth paths corresponding to alternative government policies in a life-cycle economy.

Bohn (1995) shows that policies that are sustainable in a certain world may no longer be so in the presence of uncertainty. Hence, while *ex post* evaluation of fiscal sustainability is rather straightforward, *ex ante* evaluation of current or planned fiscal policies is not trivial. The literature has thus proposed a large number of methods and indicators for the evaluation of fiscal policy. In the econometric evaluation of fiscal policy, it is examined whether the time series of public debt is non-stationary that is, whether the debt-to-GDP ratio is increasing in real terms and exceeds future discounted surpluses. If it is not found to do so, the country's fiscal policy is regarded as sustainable.

McDermott and Wescott (1996) and Alesina and Perotti (1997*)* argue that governments that are able to cut the politically sensitive components of the budget such as public employment, social security, welfare programs etc. may signal that they are more committed to sustained fiscal adjustment. They argue that fiscal consolidation based on expenditure cuts, especially transfers and government salaries and pensions are more likely to succeed in reducing the debt ratio. Further, there are several recent contributions in which the analysis of fiscal sustainability is shifted

away from a present budget balance perspective and is instead conducted into a life-cycle model.

Chalk (2000) analyzes the sustainability of permanent bond-financed deficits and lays down the conditions under which a growth rate larger than the interest rate is a necessary but not a sufficient condition to ensure the sustainability of growing fiscal deficits. Rankin and Roffia (2003) investigate the structural determinants of a maximum sustainable public debt and the conditions for its existence under non-degenerate values of the other economic variables in a Diamond two-period overlapping generations model. Fernandez-Huertas Moraga and Vidal (2004) study fiscal sustainability in a two-period overlapping generations' economy with endogenous growth coming from human capital formation through educational spending and parental education.

Azariadis and Reichlin (1996) analyze how public debt affects accumulation of physical capital in an overlapping generations' model displaying production externalities. They show that in the presence of a positive initial value of the public debt the economy can converge to a low-level development trap.

The analyses of Berben and Brosens (2007) show that Ricardian or Keynesian behavior is at least in part determined by the government debt to GDP ratio. They further identify the government debt to GDP ratio (debt ratio) as the key variable affecting private sector expectations. Whenever the debt ratio is either near a critical value or growing at a rapid pace, a fiscal consolidation program does not lead to a rise in national saving as the private sector reacts to improved long-term prospects by dis-saving more than the government saves. In a Ricardian case, a high public debt level

should generally be associated with a stable or even negative relationship between fiscal deficit and current account deficit. If the debt ratio is however low and consumers react in a Keynesian manner (i.e. use the fiscal stimulus to consume more) the relationship between fiscal deficit and current account deficit should be positive. In low debt and medium debt countries (up to a debt level of 44% of GDP) the relationship is positive, i.e. an increase in fiscal deficit leads to a higher current account deficit. In medium-to-high debt countries with debt ratios between 44% and 90% of GDP the relationship is still positive but much less so. In the very high debt countries with debt ratios of above 90% of GDP the relationship is negative and insignificant, suggesting that a rise in the fiscal deficit does not result in a rise in the current account deficit.

Literature on the expansionary effects of fiscal consolidation shows that the government debt to GDP ratio can indeed explain observed differences in private consumer reactions to fiscal policy but does not draw conclusions on the implications that this would have on the behavior of the current account. The existing literature so far does not answer the question as to what constitutes a high or a low debt ratio in certain circumstances [see Giammarioli *et al.*, 2006]. Kopits (2001) argues that India's public deficit bias and indebtedness cannot be sustained much longer, especially with stepped –up external liberalization. Under these circumstances, the promotion of capital formation, maintenance of market confidence, and high sustained growth require formulation of a broad strategic approach to fiscal consolidation – with close attention to the quality of adjustment. A central aspect of such a strategy is the adoption of a permanent framework for a rules-based fiscal discipline, as proposed under the Fiscal Responsibility Bill.

The literature on the expansionary effects of fiscal consolidations goes back to 1974, the year when Robert Barro published his seminal article on Ricardian equivalence. The topic gained renewed interest in the mid-1980's when both Denmark (1983-86) and Ireland (1987-89) introduced drastic fiscal consolidation programs yielding higher — not lower, as Keynesian theory would have suggested — economic growth. In the aftermath, a large body of literature developed to explain these "non-Keynesian" effects of fiscal consolidations. Based on Giavazzi and Pagano (1990, 1996) and Alesina and Perotti (1995, 1997), Giavazzi *et al*. (2000) conclude that the relationship between fiscal policy and national saving may be nonlinear. Broadly speaking, this non-linearity might arise from the influence of fiscal policy on private sector expectations. Building on earlier work by Blanchard (1990), and Sutherland (1997), Perotti (1999) shows that the debt to GDP ratio is a good predictor for a non-linear response of the private sector to fiscal consolidation. The importance of government debt as a key variable affecting private sector expectations was confirmed by the subsequent studies (e.g. Berben and Brosens, 2007).

The modern literature on current account determination rests on the intertemporal approach as first proposed by Buiter (1981) and Sachs (1981) and extended by Obstfeld and Rogof (1995). In these models, the current account of a country is treated mainly as a reflection of consumption and investment decisions (Gandolfo, 2001). The current account acts as a shock absorber to temporary changes in national cash flow or net output. Glick and Rogo (1995) and Bussière *et al* (2005) find that productivity shocks, in particular country-specific ones, act as main drivers of the current account.

The paper on Fiscal Deficits and Government Debt by Rangarajan and Srivastava (2003) examines the long-term profile of the fiscal deficit and debt relative to GDP in India, and analyzes debt-deficit sustainability issues, along with relevant consideration to determine a suitable medium and short-term fiscal policy stance. They basically argue that large structural primary deficit and interest payments relative to GDP affected economic growth in recent years. They advocate strongly for reduction in the combined debt-GDP ratio of entire and the states from its current level, which together is in excess of 80 per cent of GDP and suggested a reform path in two phases: adjustment and stabilization.

Accumulation of debt can be seen as the resultant of balance between cumulated primary deficits and cumulated weighted excess of growth over interest rate (Rangarajan and Srivastava, 2004). Decomposing the change in the central government's liabilities relative to GDP since 1951-52, it is seen that but for three recent years, the accretion to debt relative to GDP was due to cumulated primary deficits. For stabilization of the debt-GDP ratio at current or reduced levels, focus on primary balance becomes necessary according to them.

Debrun and Kumar (2004) discuss the role of fiscal institutions, including budget rules and non-partisan agencies, in enhancing fiscal discipline. They argue that optimal institutions lack credibility unless the costs to bypass them are sufficiently high in a dynamic model of fiscal policy. Rajaraman's paper (2005) on "Fiscal Developments and Outlook in India" and "Macroeconomic Implications of the Fiscal Imbalances" by Kochhar (2005) emphasize the need for raising the tax-GDP ratio in a non-distortionary manner; rule-based correction of fiscal imbalances so as to obviate

political pressure; and gradual elimination of States' reliance on high-cost small savings.

Manasse (2005) assesses the roles of shocks, rules and institutions as possible sources of procyclicality in fiscal policy. Fiscal policy is "acyclical" during economic bad times, while it is largely procyclical during good times. Second, fiscal rules and fiscal responsibility laws tend to reduce the deficit bias on average, and seem to enhance rather than weaken, countercyclical policy. However, the evidence also suggests that fiscal frameworks do not exert independent effects when the quality of institutions is accounted for. Unlike developed countries, fiscal policy in developing countries is procyclical even during (moderate) recessions; in "good times", however, fiscal policy is actually more procyclical in developed economics.

It may however noted that these studies have always presented a partial picture with focus on present value budget constraint (PVBC), and Keynesian and classical metrics while the practice in the real world has thrown up more relevant measures like debt to GDP ratio, debt to exports and debt to revenues.

2.4 Analytical Summary of Past Studies

Among the mainstream analytical perspectives, the neoclassical view considers fiscal deficits detrimental to investment and growth, while in the Keynesian paradigm, it constitutes a key policy prescriptive. Theorists persuaded by Ricardian equivalence assert that fiscal deficits do not really matter except for smoothening the adjustment to expenditure or revenue shocks. While the neoclassical and Ricardian schools focus on the long-run, the Keynesian view emphasizes the short-run effects.

Fiscal Deficit and the Economy: Salient Features of Alternative Paradigms

	Neoclassical	Ricardian	Keynesian
Consumers	Finite, lifetime horizon	Infinite time perspective through altruistic transfers	Myopic, liquidity constrained
Effects of a deficit based tax cut on private saving	Private saving would fall	Private saving remains unaffected	Aggregate demand increase
Employment of resources	Full employment	Full employment	Resources not fully employed
Effect on interest rate	Interest rate increases	No effect	Interest rate increases
Contention	Fiscal Deficit detrimental	Fiscal Deficits irrelevant	Fiscal Deficits beneficial

A key finding of all these studies is that sustainable fiscal policy has to respect the present value budget constraint (PVBC). Sustainability thus requires that today's government debt is matched by an excess of future primary surpluses over primary deficits in present value terms.

2.5 Sustainability of Debt

Sustainability is a term that has been used with increasing frequency in the academic literature and recent multilateral policy discussions, but with different connotations under different circumstances (Balassone and Franco, 2000, Chalk and Hemming, 2000). Traditionally, fiscal sustainability has been assessed in terms of indicator analysis. Reflecting this, growing research efforts have not only been directed towards developing measurable indicators or summary measures of sustainability but also assessing the fiscal policy with the help of these indicators. This framework was first developed by Domar (1944) who states that a necessary condition for sustainability is that growth rate of income must exceed the interest rate. Subsequently, Buiter (1985) suggests a sustainable policy as one which is capable of keeping the ratio of public

sector net worth to output at its current level. Blanchard (1990) provided two conditions for sustainability:

i) The ratio of debt to GNP should eventually converge back to its initial level, and

ii) The present discounted value of the ratio of primary deficits to GNP should be equal to the negative of the current level of debt to GNP.

In the context of a theoretical discussion the rules for sustainability and stability are assumed to convey the same connotation if one examines sustainable level of public debt in terms of stable long run equilibrium path. Government solvency is a necessary but not sufficient condition for fiscal sustainability. In the absence of accompanying assumption of private sector savings and investment behavior, the application of sustainability condition assumes that the projected paths of primary fiscal balance, interest rate and economic growth are independent.

Furthermore, the achievement of fiscal sustainability need not imply optimality of fiscal balances. Some of the important research efforts relating to sustainability of deficit and debt are: Masson (1985), Hamilton and Flavin (1986), Bispham (1987), Spaventa (1987), Zee (1988), Blanchard (1990), Chouraqui *et.al*., (1990), Horne (1991) and Haque and Montiel (1992), Recent theoretical literature has focused on whether current fiscal policy can be continued into future without jeopardizing financial stability and growth of the economy, which does not necessarily imply that debt has to be non-increasing. In this context, the literature emphasizes that to avoid ambiguity and confusion the rules for sustainability, solvency, stability and optimality should be clearly defined. Thus, the Government's inter-temporal or the present value budget constraint is the central theme of the research on sustainability. In order to

work out the sustainable level of deficit, a sustainability rule was defined and developed by Blanchard (1990) and by Chouraqui *et al* (1990). According to Blanchard-Chouraqui sustainability condition, sustainable rate of revenues (non-interest) is equal to the annuity value of non-interest expenditure plus the interest rate net of growth times the initial level of debt.

Of late there has been a debate on the macroeconomic impact of fiscal deficit as consistent levels of high deficits and debt during the last decade did not have any adverse macroeconomic impact, as it was the case in 1990-91. One school of thought [Pattnaik, 2001, Rakshit, 2000, Chandrashekhar 2000, Shetty, 2001] advocates that it would be appropriate in the Indian context to increase government expenditure on investment even through monetisation of fiscal deficit. Another rationale that justifies a positive level of public debt relates to intergenerational equity. What this means is that Government spending today in the form of public investment, or capital expenditures that have upfront costs can benefit future generations. If this capital expenditure today is financed by only the current revenues, the generation living today is forced to bear all the costs but will not be able to reap the full benefits of such capital expenditure. However, if policies that deliver long-term economic benefits but require significant investment expenditures in the short run are financed by issuing debt, future generations will contribute to the cost. Hence the legitimacy of debt finance for public investment was increasingly recognized; the so-called golden rule that deficits be allowed up to the level of public investments even made it into the German constitution.

Another school of thought has questioned the efficacy of expansionary fiscal policy as it argued that it led to higher interest rates, crowding out and inflation (Lahiri and

Kannan, 2000, Acharya, 2001, and Srinivasan 2001). In this context, both the size and quality of fiscal adjustment assume critical importance (Reddy, 2001). This view also further corroborated by the Report of the Economic Advisory Council (EAC, 2001), which stressed that high fiscal deficits, by raising real interest rates, crowd out private investment, especially in the context of the government borrowing being predominantly used to finance revenue deficits. The EAC observed that the existing level of public debt is "too high… and clearly unsustainable". Ahluwalia (2002) observed that India's fiscal and debt indicators are comparable to or worse than that of Argentina, Brazil and Turkey, countries which have actually experienced a serious recent macroeconomic crisis. The author, nevertheless, concludes that India is not vulnerable to a repeat of its 1991 fiscal and balance-of-payments (BoP) crisis because of the build up of foreign exchange reserves, capital controls, flexible exchange rate system and widespread public ownership of banks. Pinto and Zahir (2004) argue for further fiscal adjustment to eliminate the threat to sustained growth stemming from the crowding out of private investment, and constraints imposed on the domestic financial system by the financing needs of the government budget. While commenting upon India's recent deficit on capital formation and growth, Felsdstein (2004) observed that if India did not have its current Central Government deficit of some 6 per cent of GDP the gross rate of capital formation could rise from 24 per cent of GDP to 30 per cent.

2.6 Assessment of Debt Sustainability

Seshan (1987) draws pointed attention to the possibility of public debt in India reaching an unacceptably high level in the none too distant future. Subsequently, the Report of the Comptroller and Auditor General (CAG) of India (1988) also warned

against “the alarming growth in domestic debt”. Rangarjan, Basu, and Jadhav (1989), examined the dynamic nexus between budget deficit and debt. Using data for the seventies and the eighties, the authors simulated two alternative scenarios for financing the deficit: a debt-financing scenario and a monetary-financing scenario. Under the debt-financing scenario, they concluded that “the higher interest burden may invariably lead to a squeeze on budgetary capital outlays, thereby stifling economic growth”. Under the monetary-financing scenario they concluded “resorting to monetary financing is likely to set in motion a vicious circle of large deficit, higher monetary financing, greater inflation leading again to a larger deficit”.

Chelliah (1991) demonstrates that maintaining the primary deficit even at a level of 3.5 per cent is unsustainable because this would raise the debt-to-GDP ratio to 77.4 per cent in 2000/01 from 60.2 per cent in 1989-90. Interest payments would then absorb 6.4 per cent of GDP, casting an unbearable burden on the budget. Therefore, he has suggested that the first stage of fiscal adjustment should consist of measures to enable the Government to reduce primary deficit to 2.5 per cent of GDP by the year 2000/01. If this is done, the growth of public debt would slow down and the total deficit would be contained around 8 per cent of GDP in 2000/01. In order to reduce the primary deficit to 2.5 percentage of GDP, steps must be taken to reduce the deficit on budget’s revenue account to take much of the financing of the public enterprises out of the budget, to stabilize the rate of capital formation on Government account, to raise the return on Government lending and investment and to increase the income elasticity through tax reforms. Once the first stage of adjustment is completed loan finance should be largely limited to capital expenditure.

Buiter and Patel (1992) using annual data for 18 years (1970-71 to 1987-88), with four alternative interest rates, demonstrate that discounted public debt in India is non-stationary. They pointed out that without a sharp reversal of the primary deficit to a primary surplus, avoiding repudiation or default would require mobilization of large seignorage or inflation tax. Following the tax gap approach developed by Blanchard (1990), Chouraqui *et. al*. (1990), an attempt was made in Pattnaik (1996) to assess the sustainability of Central Government finances. The empirical findings in this paper reveal that under a medium-term perspective, the fiscal sustainability requires that the debt/GDP ratio be brought down to 50 per cent by the end of fiscal 2000 from the 1996-97 level of 54 per cent. This is possible by gradual scaling down of the gross fiscal deficit (GFD) to about 3.90 per cent of GDP by 2002. Assuming a real growth rate of 7 per cent, inflation rate of 5 per cent and real effective interest rate of 7 per cent, a primary balance relative to GDP is required as against a deficit of 1.90 per cent in 1995-96.

Auerbach (1994) concludes that the fiscal problem could linger on for many years before exploding. Similarly, Khundrakpam (1998) and Moorthy *et. al*. (2000) find that the Indian public debt is sustainable in terms of Domar's stability condition. This has, however, been questioned when the GDP growth rate is compared with call money rate and commercial bank lending rate, and thus the conclusion which has emerged is that debt is not sustainable [Jha, 1999]. Lahiri and Kanan (2000), Acharya (2001, 2002) and Ahluwalia (2002) also commented upon the unsustainable level of deficit and debt. A recent study by Pinto and Zahir (2004) observed that without fiscal adjustment debt/GDP ratio would be 110 per cent in 2006-07 and with adjustment this ratio would be 92.5. Correspondingly, the deficit rises to 11.4 per cent and fall steadily to 7 per cent with reforms.

2.7 Concluding Observations

Most of the debt sustainability studies that have been reviewed above generally conclude that debt would not be sustainable unless GDP growth rate is consistently above the interest rate. Both the World Bank and IMF assessments also suggest that debt to GDP ratio should be the single most indicator, which should be targeted and monitored so that the ratio does not move away from sustainable levels.

The question of a suitable sustainable level is again dependant on the strength of the economy, based on which the ratio would differ from country to country. Especially, the DSA methodology of IMF could not come to a conclusion on the appropriate level of debt ratio regarded as sustainable for a country. Instead, the overall consensus seems to be different levels given the macroeconomic conditions and the fiscal resilience of the economy.

The Keynesian perspective on debt sustainability has been disproved in some of the studies, as resorting to more debt to prop up effective demand did not generate employment and increase in output. This suggests that fiscal expansion in a Keynesian sense does not always improve growth but would lead to a rise in inflation and interest rate, defeating the very purpose for which debt is incurred.

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CHAPTER – III

PUBLIC DEBT IN INDIA: AN ASSESSMENT

3.0 Introduction

This chapter introduces the theoretical background of fiscal rules – the different types of rules, their prevalence in different countries and their relative effectiveness. Further, the composition and types of public debt are introduced, and since 1880s traced. The chapter ends with an analysis of trends in fiscal deficits, expenditure and receipts of the Union Government over the past few decades.

3.1 History of Fiscal Rules

As early as the mid-nineteenth century, sub-national entities of federal countries were subjected to legislated rules to avoid large fiscal deficits and free-riding risks (Kopits, 2001). After World War II, Germany, Italy, Japan, and the Netherlands incorporated budget balance rules at the central government level into their stabilization programs. Later, excessive public debts accumulated during the 1970s and 1980s by many countries prompted a growing number of them to subject their policies to numerical constraints, including the United States (Gramm-Rudman-Hollings Act of 1985, replaced by the Budget Enforcement Act of 1990), Canada (Federal Spending Control Act of 1991), and various Latin American countries in the late 1990s. In European Union (EU) member states, however, supranational fiscal rules (Maastricht Treaty in 1992, Stability and Growth Pact (SGP) in 1997) originated from the need to constrain individual countries from running fiscal policies inconsistent with the needs of the

economic and monetary union. Increasingly, EU members have complemented the EU framework with national fiscal rules (European Commission, 2009).[1]

Fiscal sustainability should ideally be judged on the basis of debt stock to GDP and debt service to overall fiscal payment capacity, i.e., the capacity of the government to generate recurrent revenue. However, the only consistent published time series data related to the budget is that of debt to GDP ratio. Based on an analysis of these data by the IMF in a report gives the following results:

There were six (6) Commonwealth countries (The Gambia, Ghana, Guyana, Kenya, Sierra Leone and Zambia), five (5) OIF countries (Central Africa Republic, Djibouti, Guinea-Bissau, Mauritania, and Togo), 2 Latin American countries (Bolivia and Nicaragua) and Ethiopia with domestic debt/GDP ratios in excess of the floor of the IMFs 15% - 20% significant level in 2007. Of these countries, Central African Republic, Djibouti, The Gambia, Guinea-Bissau, Guyana, Mauritania, Nicaragua and Togo also had total public debt/GDP ratios above the EUs 60% benchmark.

Amongst the Commonwealth countries, Malawi's domestic debt/GDP ratio of 14.8% was just below the IMF's significant range, whereas the total public debt to GDP ratios of Sierra Leone and Solomon Islands were just below the EUs 60% threshold at 57% and 52%, respectively.

Of the OIF group, six (6) countries (Comoros, Congo DR, Congo Republic, Côte devoir, Guinea and Sao Tome), five (5) of which are yet to receive full HIPC and

[1] Some EU members had national fiscal rules already in place before the adoption of the Maastricht Treaty (e.g.,Belgium and Germany).

MDRI debt relief, have public sector debt burdens exceeding the EUs 60% benchmark because of large external debt burdens.

3.2 Fiscal Rules, Fiscal Responsibility Laws, and Fiscal Transparency Laws

During the past decade, a number of countries have implemented fiscal rules and fiscal responsibility (or transparency) laws as a mechanism for improving fiscal discipline and policy outcomes. These arrangements generally support fiscal transparency by providing a clear statement as to policy objectives and how these objectives will be achieved, including informing the public of fiscal risks. One of the functions of these laws is to help build support for fiscal consolidation by strengthening the credibility of fiscal policies and by increasing accountability.

3.2.1 Stand-Alone Fiscal Rules

Stand-alone fiscal rules attempt to enhance the credibility of macroeconomic policies by limiting the scope for discretionary interventions. They encompass provisions such as balanced budget obligations, expenditure restrictions, deficit limits, and debt limits. For instance, under the *Maastricht Treaty*, countries seeking to adopt the single currency of the European Union agreed to limits on their fiscal deficits and debt, and also accepted limits on central bank borrowing. Most recent rules are supported by some level of transparency standard in the form of appropriate accounting conventions, reporting requirements, and a medium-term macroeconomic framework. Recent fiscal rules adopted in several emerging market economies have relied to a greater extent on numerical reference values for deficits and debt. Chile for example, has implemented a “structural surplus rule” that aims at a cyclically adjusted surplus rule for the central government equal to 1 percent of GDP. Moreover, it is legally

mandated that the government explain any deviations in the fiscal outcome from the surplus rule in the parliament. The rule provides useful *ex ante* guidance for spending plans; the spending target is used to restrain in-year spending with updated forecasts and steps to cut spending or raise revenues as needed. Bulgaria imposes a debt ceiling on gross general government debt as a share of GDP in the *Laws on Government Debt.*

3.2.2 Fiscal Responsibility Laws

A number of countries have enacted fiscal responsibility laws (FRLs) as permanent institutional devices aimed at promoting fiscal discipline in a credible, predictable, and transparent manner. Sometimes such laws are referred to as fiscal transparency laws. First adopted by a few industrial countries in the 1990s, FRLs have been implemented more recently in Latin America, Europe, and Asia. FRLs may include procedural rules or numerical rules, or both. Procedural fiscal rules generally aim to enhance transparency, accountability, and fiscal management by defining the attributes and interaction of participants in the budget process. FRLs generally require the government to commit up front to a monitorable fiscal policy strategy, usually for a multiyear period, and to report and publish fiscal outcomes and strategy changes on a routine basis. The FRLs for Australia, New Zealand, and the United Kingdom place great emphasis on procedures. They outline principles of responsible and transparent fiscal management, reporting requirements, and accountability. In Australia's FRL, there are no numerical rules. New Zealand's Fiscal Responsibility Act aims to maintain public debt at prudent levels through appropriate operating balances. The United Kingdom's Code for Fiscal Stability is supplemented by two numerical rules that are outside of the code itself (the "golden rule," which bars borrowing to finance

current expenditures over the cycle, and the "sustainable investment rule," requiring that the public sector debt-to-GDP ratio be maintained at prudent levels).

Numerical fiscal rules are intended as a permanent constraint on fiscal policy, generally in terms of an indicator of overall fiscal performance. Main types of numerical rules include (i) deficit rules (balanced budget), (ii) debt rules (ceilings), (iii) borrowing rules (Cyprus has a prohibition of central bank financing), and (iv) expenditure rules (the Netherlands had set ceilings on total expenditure and other major subcategories. Mechanisms to encourage compliance are critical for FRLs. Although some European countries have relied on reputational sanctions for noncompliance, credibility may require additional measures, including institutional sanctions for non complying jurisdictions and/or personal sanctions for non complying public officials, which are applied automatically when fiscal targets are missed and/or budget procedures not followed. One example of this approach is Brazil's FRL.

3.3 Definition of Public Debt

Public debt is, therefore, the sum of all domestic and external obligations of Government including direct and guaranteed debt. These include the Central Government and its agencies; states, provinces or similar political subdivisions including their agencies; and autonomous public bodies such as state enterprises and subsidiaries in which they have joint ownership with the private sector and a major shareholding. The obligations of public bodies outside the Central Government include borrowings that are both guaranteed and not guaranteed by the Government.

The International Monetary Fund and World Bank classify the debt of a country as external and domestic debt on the basis of residence of the lender. Accordingly, both foreign and domestic currency debt held by non-residents is classified as external debt and those held by residents is classified as domestic debt. This would not have any implications for total public sector debt though the breakdown into foreign and domestic debt would have to take this into account if this definition is used. The level of contingent liabilities has become a concern for Governments after the Asian crisis. These are liabilities that could arise due to predefined events or circumstances such as defaults on guarantees. Further, obligations of the public sector as a whole become those of the Government and included borrowings guaranteed by it, both explicitly or implicitly.

One challenge is with regard to the debt sustainability indicator or criterion to be used. The commonly used and most comprehensive indicator of debt sustainability is the debt-to-GDP ratio. There are other equally useful debt sustainability indicators, such as the external debt and debt service-to-exports ratio. Similarly, total public debt and debt service-to- revenue receipts is also a useful indicator for fiscal debt sustainability analyses.

3.4 Fiscal Rules Framework

The sharp increase in fiscal deficits and public debt in most advanced and several developing economies has raised concerns about the sustainability of public finances and highlighted the need for a significant adjustment over the medium term. IMF (2001) assesses the usefulness of fiscal rules in supporting fiscal consolidation, discusses the design and implementation of rules based on a new data base spanning

its Fund membership, and explores the fiscal framework that could be adopted as countries emerge from the crisis. As per IMF report on sustainable public finances, fiscal rules have become more common in recent years. "Until the early 1990s, rules were used only in a few countries: public debts accumulated during the 1970s and 1980s, and the recognition that currency unions should be supported by rule-based frameworks led more governments to subject their policies to numerical fiscal targets". As a result, by the end of 2009, more than 80 countries put in place national or supranational fiscal rules.

The use of fiscal rules is on average found to be associated with improved fiscal performance. While this association may generally reflect changes in countries' attitudes toward fiscal rectitude determining both the improved fiscal performance and the introduction of rules the spread of rules suggests their contribution to prudent fiscal policies. However, fiscal rules are often introduced to lock-in earlier consolidation efforts rather than at the beginning of the fiscal adjustment.

3.4.1 Sustainability Analysis

In the World Bank fiscal sustainability hand book, Chuhan (2005) argued that a persistently rising debt-to-GDP ratio leads to unsustainable debt in the long term. On the same note, Brownbridge (2003) has argued that a debt-to-GDP ratio of more than 70% is considered unsustainable by the Bretton Woods Institutions. Hopkin and Reddaway (1994) suggest that fiscal sustainability obtained with a primary deficit or surplus that keeps the debt to GDP ratio unchanged over time, would mean that a sustainable debt ratio does not rise over time but rather which falls or remains static.

The weakness in this view is that it fails to attach importance to the current levels of debt, which can be high and unsustainable.

Cointegration is relevant to the problem of the determination of long-run or equilibrium relationships between or among variables. Lack of cointegration between public debt and inflation or public debt and economic growth, for example, will mean that the variables have no long run relationships or that such a relationship is unpredictable.

Performing standard regression techniques on non-cointegrated or non stationary variables would yield invalid results. In testing for cointegration between and stationarity of public debt and inflation and public debt and economic growth, the Augmented Dickey Fuller tests are employed.

3.5 Composition of Debt

Debt management has become a critical function for any government - developing or developed, as its importance in running the economy increased tremendously over the years. Keeping in view the financing of development needs of several important sectors in the economy such as energy, roads, ports, health and education, resorting to borrowings by governments across the globe is a common phenomenon. Against such a background, Government of India is aware of the importance of debt management and its objective is spelt by the Ministry of Finance as follows:

“The overall objective of the Government debt management policy is to meet Central Government’s financing need at the lowest possible long term borrowing costs and

also to keep the total debt within sustainable levels. Additionally, it aims at supporting development of a well functioning and vibrant domestic bond market".

Under current budgetary practice, there are three categories of Union government liability that constitute public debt - internal, external and "other" liabilities.

Internal debt is classified into (i) market loans, (ii) other long and medium-term borrowing and (iii) short-term borrowing and is shown in the receipt budget of the Union government. It includes market loans, special securities issued to the Reserve Bank of India (RBI), compensation and other bonds, treasury bills (including 14-day treasury bills issued to States only), commercial banks and other parties, as well as non-negotiable and non-interest bearing rupee securities issued to international financial institutions.

External debt represents loans received from foreign governments and multilateral institutions. The Union Government does not borrow directly from international capital markets. Its foreign currency borrowing takes place from multilateral agencies and bilateral sources, and is a part of official development assistance (ODA).

The "other" liabilities category, not a part of public debt, includes other interest bearing obligations of the government, such as post office savings deposits, deposits under small savings schemes, loans raised through post office cash certificates, provident funds and certain other deposits.

Of the total Central Government debt, about 92 per cent consists of internal debt and eight (8) per cent is external debt. The internal debt largely consists of market loans in the form of dated securities which are contracted through auction. Most of the dated

securities (about ninety seven (97) per cent) are fixed coupon and only the balance 3 per cent are floating rate bonds. The weighted average maturity of these dated securities is about ten (10) years while the weighted average interest rate is around 7.8 per cent per annum. The above three characteristics of government debt namely, primacy of domestic nature of debt with fixed interest rate and long residual maturity gives India a distinct advantage of lower refinancing risk of maturing debt.

The composition of the overall Central Government Debt (as reported in Budget Documents), consists of liabilities on account of Market Stabilisation Scheme (MSS) and also National Small Savings Fund (NSSF) which are not used for financing the deficit of the Central Government. At the same time, the external debt of Government of India needs to be at current exchange rate rather than at book value with historic exchange rate. The trends in accumulated debt and liabilities show that the Government of India debt steadily declined from 69.31 per cent of GDP in 2004-05 to 63.80 per cent in 2007-08. This correction is largely attributed to fiscal consolidation which was achieved through gradual reduction in the fiscal deficit. However as the Government had to undertake counter-cyclical measures to protect Indian economy from the adverse impact of global economic crisis, there was pressure on the fiscal front and that may affect the pace of progress of fiscal consolidation during the medium term .

3.6 Progression of Public Debt in India

Fiscal developments in India during the past two decades in terms of movements in the key fiscal indicators such as revenue deficit (RD), gross fiscal deficit (GFD) and primary deficit (PD) and Debt to GDP ratio reveal a changing fiscal situation during

this period (table-3.1). The distinct worsening of fiscal situation during the mid-90s and first half of 2000-2010 is reflected in large fiscal deficits, high debt to GDP ratios and a sharp deterioration in the revenue deficit that has become endemic and has contributed to the dissavings of the Government to a great extent. Primary surplus has not been achieved during the entire fiscal consolidation period, except in the year 2003-04. The imbalances in the revenue account persisted on account of downward rigidity in the revenue expenditure which has hovered around 12-14 per cent of GDP and stagnation in revenue receipts relative to GDP at around 9 per cent during the past decade and half, i.e., till 2004-05.

The emphasis on fiscal consolidation consequent upon the enactment of the FRBM legislation has enabled some reduction in the key fiscal indicators in recent years. The apparent improvement in the fiscal deficit and debt ratios of the Centre during 2005-06 to 2008-09 from high levels during the 1990s should be seen as an improvement in the overall fiscal performance consequent to the enactment of FRBM. While this level of consolidation appears to be considerable, an assessment of the actual fiscal consolidation measured in terms of sustainability indicators such as Debt to GDP, Interest Payments to Revenue Receipts, Fiscal Deficit to GDP, Revenue Deficit to GDP, and Tax to GDP ratios needs to be made.

Let us now try to trace the evolution of public debt in India in a chronological fashion. The total funded debt of the Central Government amounted to Rs.950 crores at the time the Reserve Bank of India took over the management of public debt from the Controller of the Currency in 1935. Of this total debt, 54% amounted to sterling debt and 46% rupee debt and the debt of the Provinces amounted to Rs 18.0 Crores.

Table-3.1
Fiscal Sustainability Indicators of Centre

Years	Debt	Fiscal Deficit (FD)	Interest Pay-ments (IP)	Total Revenue Receipts (TRR)	GDP	Debt as % of GDP	FD as % of GDP	FD as % of TRR	IP as % of GDP	IP as % of TRR
1	2	3	4	5	6	7	8	9	10	11
1989-90	268192	35632	17757	52296	442134	60.66	8.06	68.14	4.02	33.95
1990-91	314558	44632	21498	54954	515032	61.08	8.67	81.22	4.17	39.12
1991-92	354662	36325	26596	66031	594168	59.69	6.11	55.01	4.48	40.28
1992-93	401923	40173	31075	74128	681517	58.97	5.89	54.19	4.56	41.92
1993-94	477968	60257	36741	75453	792150	60.34	7.61	79.86	4.64	48.69
1994-95	538611	57703	44060	91083	925239	58.21	6.24	63.35	4.76	48.37
1995-96	606232	60243	50045	110130	1083289	55.96	5.56	54.7	4.62	45.44
1996-97	675676	66733	59478	126279	1260710	53.59	5.29	52.85	4.72	47.1
1997-98	778294	88937	65637	133886	1401934	55.52	6.34	66.43	4.68	49.02
1998-99	891806	113348	77882	149485	1616082	55.18	7.01	75.83	4.82	52.1
1999-00	1021029	104716	90249	181482	1786526	57.15	5.86	57.7	5.05	49.73
2000-01	1168541	118816	99314	192605	1925016	60.7	6.17	61.69	5.16	51.56
2001-02	1366409	140955	107460	201306	2097726	65.14	6.72	70.02	5.12	53.38
2002-03	1559201	145072	117804	230834	2261415	68.95	6.42	62.85	5.21	51.03
2003-04	1736678	123273	124088	263813	2538170	68.42	4.86	46.73	4.89	47.04
2004-05	1994421	125794	126934	305991	2877701	69.31	4.37	41.11	4.41	41.48
2005-06	2260145	146435	132630	347077	3282386	68.86	4.46	42.19	4.04	38.21
2006-07	2538596	142573	150272	434387	3779384	67.17	3.77	32.82	3.98	34.59
2007-08	2897037	126912	171030	541864	4540987	63.8	2.79	23.42	3.77	31.56
2008-09 (RE)	3062912	326515	192694	562173	5228650	58.58	6.24	58.08	3.69	34.28
2009-10 (BE)	3463908	400996	225511	614497	5791268	59.81	6.92	65.26	3.89	36.7

Note: Figures in columns 2-5 are in rupee crores
Source: Indian public finance statistics, Ministry of Finance, Govt. of India

Broadly, the different phases of public debt in India could be divided into the following phases:

Up to 1867: Public debt was driven largely by needs of financing campaigns.

1867 - 1916: Public debt was raised for financing railways and canals and other such purposes.

1917 - 1940: Public debt increased substantially during this period.

1940 -1946: Due to war time inflation, the effort was to mop up as much a possible of the current war time incomes

1947 - 1951: Represented the interregnum following war and partition and the economy was unsettled. Government of India failed to achieve the estimates for borrowings for which credit had been taken in the annual budgets.

1951 - 1985: Borrowing was influenced by the five year plans.

1985 - 1991: An attempt was made to align the interest rates on government securities with market interest rates in the wake of the recommendations of the Chakraborti Committee Report.

1991 - 2003: Comprehensive reforms of the Government Securities market were undertaken and an active debt management policy put in place. *Ad hoc* Treasury bills were abolished; commenced the selling of securities through the auction process; new instruments were introduced such as zero coupon bonds, floating rate bonds and capital indexed bonds; the Securities Trading Corporation of India was established; a system of Primary Dealers in government securities was put in place; the spectrum of maturities was broadened; the system of Delivery versus payment was instituted; standard valuation norms were prescribed; and endeavors made to ensure transparency in operations through market process, the dissemination of information and efforts were made to give an impetus to the secondary market so as to broaden and deepen the market to make it more efficient.

2003 - 2010: The Fiscal Responsibility and Budget Management (FRBM) Act 2003 was enacted and an active debt management policy is being pursued by the Government. Lending to State governments discontinued by the Central Government and State Level Fiscal Responsibility Legislations enacted by almost all the state governments. Comprehensive Fiscal Reform Strategy was put in place by Government of India.

As at the end of March, 2010, it is estimated that the combined outstanding liabilities of the centre and state governments amounted to Rs 42 trillion which worked out to over 72 percent of the country's gross domestic product (GDP). In India and the world over, Government bonds have, from time to time, not only adopted innovative methods for raising resources but also been used for various innovative schemes such as to finance various development activities; social engineering like subsidy financing of economic and social activities of citizens, debt holiday for different interest groups; saving the environment; or even weaning people away from gold (the gold bonds issued in 1993).

Normally the sovereign debt is considered the lowest risk in the country and sovereign paper sets the benchmark interest rates for the corresponding maturity of other issuing entities. Theoretically, others can borrow at a rate above what the Government pays depending on how their risk is perceived and assessed by the markets. Hence, a well developed Government Securities market helps in the efficient allocation of resources in the economy. A country’s debt market to a great extent depends on the depth of the Government bond market. It is in this context, that the recent initiatives to widen and deepen the Government securities market and to make it more efficient have been taken.

Interest payments rose by a percent part over a decade as they were of the order of 4.17% of Gross Domestic Product (GDP) in 1990-91 and steadily rose to 5.16% of GDP by the year 2000-01 and in absolute figures from a level of Rs. 17,757 and in 1989-90 to Rs. 90,249 and in 1999-2000, in terms of percent of fiscal deficit (FD) rose sharply from 49% to 86% during the same period. However, after reaching a peak of 5.21% of GDP in 2002-03 interest payments have consistently declined and reached a low of 3.69% of GDP in 2008-09. Also as a proportion of fiscal deficit, interest payments declined from a level of 81% in 2002-03 to 59% of Fiscal deficit in 2008-09, indicating a sustained decrease in debt service costs (table 3.1)

Similarly if we take the fiscal parameter FD/GDP ratio, it is clear that it also declined from a level of 6.72% in 2001-02 to 2.79% in 2007-08, suggesting a substantial fiscal correction that occurred during this period. Several key fiscal policy initiations of the government, especially the enactment of FFBM and expenditure restricting measures helped in the fiscal consolidation that happened during the past few years. However, the impact of global financial crises and the largest Debt Waiver Package of Rs. 60,000 crores announced for the farmers during 2008-09 and other fiscal stimulus packages doled out by the Central Government amounting to nearly Rs. 1, 00,000 crores pushed the FD/GDP ratio to 6.24% in 2008-09 and it is estimated that this may be around 9% in 2009-10.

3.7 Post-Reform Trends in Deficits

The following tables and charts demonstrate a clear trend where after the promulgation of fiscal responsibility measures, the rate of growth of deficits has registered slightly downward trend.

From table-3.1, it is clear that debt consolidation has taken place to some extent. The Debt/GDP ratio which was around 69% in 2002-03, gradually declined to 63.80% in 2007-08 and further to 58% in 2008-09. Similarly, the combined debt (Centre and States together) – GDP ratio which was 100.31% in 2004-05 also declined considerably to 90% in 2007-08 and further to 83% in 2008-09.

To put the fiscal responsibility debate in perspective, it is important to take stock of the trends in debt, deficit and revenue deficits in the post-reform period. Public finances, both at the Centre and in the states, had deteriorated progressively since the mid-90s. The combined fiscal deficit of the Centre and the states which was 9.3% of GDP in the crisis year of 1990-91 declined to 6.2% in 1996-97 before climbing back to 9.4% in 1999-00 mainly on account of the impact of the huge subsidies, interest payments and Fifth Pay Commission award of salary and pension to Central Government staff.

However, the combined fiscal deficit took a downward trend after the centre promulgated the FRBM Act, and introduced – slew of fiscal consolidation reforms. The ratio declined from 7.26% in 2004-05 to 5.30% in 2006-07. Similarly, the combined revenue deficit of the Centre and the states which was 4.2% in the crisis year of 1990-91, had declined to 3.2% by 1992/93, grew to a high of 6.9% by 2001-02. Like fiscal deficit, revenue deficit too has shown a welcome downward shift since 2002-03 declining to 3.1% for 2005-06 and further to less than 3% in 2008-09.

The current situation appears to indicate a gradual improvement in the sustainability indicators from a steep deterioration witnessed during the mid-90s until 202-03.The impact of year-on-year deficits shows up in the stock of debt and interest payment

indicators. The debt-GDP ratio of the Center and states combined had increased from 64.9% in 1990-91 to 100.31% in 2004-05 and subsequently reduced to 83.33% in 2008-09.

Another cause of concern is that our fiscal deficits are actually higher than acknowledged. They are understated because some of the liabilities of the government are not treated as debt in the budget numbers. Notably, the oil bonds which have become a regular feature are not accounted for above the line. This year alone the oil bonds are of the order of Rs. 28000 Crores, and if acknowledged, will add to the fiscal deficit by a significant 0.7 percentage points of GDP

3.7.1 Fiscal Adjustment

The mainstream view on fiscal adjustment accords with textbook economics, while the contrarian view that an expansionary fiscal policy is the key to economic development has some distinguished academic credentials as well. Much of this debate between fiscal restraint and fiscal expansion has played out in the Indian context in recent months.

The analytical argument is that the government should relax the FRBM targets, borrow aggressively and invest in physical and social infrastructure. This will accelerate growth and raise the tax buoyancy, and the higher revenues so generated will be more than sufficient to meet the additional debt service obligations. In other words, through a 'borrow and invest' fiscal stance, the economy can get on to a virtuous cycle of higher growth and higher revenues.

The conventional wisdom that fiscal deficits put pressure on interest and exchange rates and fuel inflation is not borne out by the Indian experience of the recent years. It is to be noted that, during the period 1996/97-2001/02 when fiscal deficits were on the rise, inflation had remained subdued and interest rates were restrained. Fiscal deficits hurt growth only when the imbalances are way off track. In India we are still very much within the limits of safety. Too drastic an adjustment in pursuit of some pre-determined target for fiscal deficit as set by FRBM may hamper the growth momentum.

As per the suggestion put out by Economic Advisory Council of Prime Minister (EAC) of India in one of its paper on fiscal responsibility, it has been suggested to curtain fiscal deficits even in the case when revenue deficit is zero. It stated: "From an analytical perspective, the fiscal expansion argument works only in a very limited case – there is no revenue deficit and the investments made out of the borrowing generate returns sufficient to service the debt. Neither of these conditions is met in the Indian case. Even if we achieve zero revenue deficit, and use borrowings only for investment expenditure *a la* the golden rule, we still need to restrain fiscal deficits because the budgetary returns on investment are typically lower than the cost of borrowing."

A variant of the fiscal expansion argument, drawing from the Keynesian worldview, is that the government needs to borrow and spend in order to stimulate aggregate demand thereby spurring employment and growth through the multiplier effect. But it is important to remember that the Keynesian logic works only if the economy is demand constrained and is operating below full employment level.

The Keynesian effect does not materialize if the economy is not demand constrained. This is evidenced by our own experience over the last decade. The burgeoning fiscal deficits during the period 1998-99 to 2002-03 were accompanied by economic slowdown for a brief period (Fig-4). This was mainly on account of debt being large relative to GDP and the borrowings were not used to finance capital expenditure but to service the large stock of debt. On the contrary, the fiscal correction which began during 2002-03 to 2004-05 saw a healthy recovery in the growth.

The combined liabilities position of the Centre and the States is depicted in table-3.2, which gives data on liabilities from 1989-90 to 2009-10. It is clear from the table that combined debt as a percent of GDP rose from 71.69% in 1990-91 to a high of 86.17% in 2001-02 and further to 100.31% in 2004-05. After the central government initiated fiscal consolidated measures and enacted the FRBM, this ratio gradually declined to 83.33%.

3.8 Expenditure Trends

Table-3.3 gives the trends in total expenditure, revenue expenditure and capital expenditure and also their respective ratios of GDP for the years 1989-90 to 2009-10. It is evident from the data that total expenditure as percent of GDP since 2004-05 is in the range of 15% to 17% of GDP with capital expenditure fluctuating widely. What is alarming is that capital expenditure as percent of GDP which was as high as 6.49% in 1989-90 declined to 1.82% in 2006-07 and stood at 1.86% in 2008-09 and this is budgeted to climb slightly to 2.13% in 2009-10.

The Gross Debt as a percent of GDP has shown a marked decrease in the years after the passing of FRBM Act, 2003, giving credence to the fact that FRBM Act, 2003 has

been a deterrent to unreined spending. Compared to other emerging economics the rise in growth rate is more subdued.

Table-3.2
Liabilities position of the Centre and the States*

Year	Centre			States	Total (4+5)	GDP	Total as % of GDP
	Internal Liabilities	External Debt	Total (2+3)				
1	2	3	4	5	6	7	8
1989-90	239849	28343	268192	48768	316960	442134	71.69
1990-91	283033	31525	314558	53632	368190	515032	71.49
1991-92	317714	36948	354662	54633	409295	594168	68.89
1992-93	359654	42269	401923	64050	465973	681517	68.37
1993-94	430623	47345	477968	76739	554707	792150	70.03
1994-95	487682	50929	538611	86752	625363	925239	67.59
1995-96	554983	51249	606232	80721	686953	1083289	63.41
1996-97	621437	54239	675676	94473	770149	1260710	61.09
1997-98	722962	55332	778294	108478	886772	1401934	63.25
1998-99	834552	57254	891806	200568	1092374	1616082	67.59
1999-00	962592	58437	1021029	279199	1300228	1786526	72.78
2000-01	1102596	65945	1168541	355492	1524033	1925016	79.17
2001-02	1294863	71546	1366409	441196	1807605	2097726	86.17
2002-03	1499589	59612	1559201	537248	2096449	2261415	92.71
2003-04	1690554	46124	1736678	720394	2457072	2538170	96.8
2004-05	1933544	60877	1994421	892133	2886554	2877701	100.31
2005-06	2165902	94243	2260145	1010861	3271006	3282386	99.65
2006-07	2435880	102716	2538596	1103292	3641888	3779384	96.36
2007-08	2784351	112686	2897037	1186428	4083465	4540987	89.92
2008-09 (BE)	2939237	123675	3062912	1293869	4356781	5228650	83.33
2009-10 (BE)	3328172	135736	3463908	1423869	4887777	5791268	84.4

* *Amount outstanding at the end of March*
Note: Figures in columns 2-7 are in rupee crores
Source: Government of India, Budget Documents of various years and CSO

Table-3.3
Trends in Expenditure

Years	Total Expr. (TE)	Revenue Expr. (RE)	Capital Expr. (CE)	GDP	TE as % of GDP	RE as % of GDP	CE as % of GDP
1	2	3	4	5	6	7	8
1989-90	92908	64210	28698	442134	21.01	14.52	6.49
1990-91	105298	73516	31782	515032	20.44	14.27	6.17
1991-92	111414	82292	29122	594168	18.75	13.85	4.9
1992-93	122618	92702	29916	681517	17.99	13.6	4.39
1993-94	141853	108169	33684	792150	17.91	13.66	4.25
1994-95	160739	122112	38627	925239	17.37	13.2	4.17
1995-96	178275	139861	38414	1083289	16.46	12.91	3.55
1996-97	201007	158933	42074	1260710	15.94	12.61	3.34
1997-98	232053	180335	51718	1401934	16.55	12.86	3.69
1998-99	279340	216461	62879	1616082	17.29	13.39	3.89
1999-00	298053	249078	48975	1786526	16.68	13.94	2.74
2000-01	325592	277839	47753	1925016	16.91	14.43	2.48
2001-02	362310	301468	60842	2097726	17.27	14.37	2.9
2002-03	413248	338713	74535	2261415	18.27	14.98	3.3
2003-04	471203	362074	109129	2538170	18.56	14.27	4.3
2004-05	498252	384329	113923	2877701	17.31	13.36	3.96
2005-06	505738	439376	66362	3282386	15.41	13.39	2.02
2006-07	583387	514609	68778	3779384	15.44	13.62	1.82
2007-08	712671	594433	118238	4540987	15.69	13.09	2.6
2008-09 (RE)	900953	803446	97507	5228650	17.23	15.37	1.86
2009-10 (BE)	1020838	897232	123606	5791268	17.63	15.49	2.13

Note: Figures in columns 2-5 are in rupee crores
Source: Government of India, Budget Documents of various years and CSO

3.9 Trends in Receipts

Table 3.4 shows the trends in revenue receipts as well as capital receipts since 1989-90 to 2009-10. It is clear from the table that revenue deficit (RD) and primary deficit (PD) are estimated to balloon in 2008-09 and 2009-10 due to spending on schemes started in the election years as well due to the fiscal stimulus package of the Centre on account of global financial crisis.

Table- 3.4
Trends in Receipts

Years	Revenue Receipts	Capital Receipts	Total Receipts	Deficit on Revenue Account	Primary Deficit	Fiscal Deficit
1	2	3	4	5	6	7
1989-90	52296	30020	82316	11914	17875	35632
1990-91	54954	38997	93951	18562	23134	44632
1991-92	66031	38528	104559	16261	9729	36325
1992-93	74128	36178	110306	18574	9098	40173
1993-94	75453	55440	130893	32716	23516	60257
1994-95	91083	68695	159778	31029	13643	57703
1995-96	110130	58338	168468	29731	10198	60243
1996-97	126279	61544	187823	32654	7255	66733
1997-98	133886	99077	232963	46449	23300	88937
1998-99	149485	130064	279549	66976	35466	113348
1999-00	181482	115707	297189	67596	14467	104716
2000-01	192605	134184	326789	85234	19502	118816
2001-02	201306	162500	363806	100162	33495	140955
2002-03	230834	180531	411365	107879	27268	145072
2003-04	263813	211333	475146	98261	-815	123273
2004-05	305991	200391	506382	78338	-1140	125794
2005-06	347077	179549	526626	92300	13805	146435
2006-07	434387	144482	578869	80222	-7699	142573
2007-08	541864	197978	739842	52569	-44118	126912
2008-09 (RE)	562173	308796	870969	241273	133821	326515
2009-10 (BE)	614497	406341	1020838	282735	175485	400996

Note: Figures in columns 2-7 are in rupee crores
Source: Government of India, Budget Documents of various years

A comparative picture between emerging economics and India as shown in table 3.5 demonstrates that India in general is a fiscally prudent economy and FRBM Act, 2003 has provided a further fillip to fiscal responsibility.

Table-3.5
Selected Emerging Countries: Average growth – Interest differential, 1998-2008

S.No.	Country	Real Effective			Marginal real interest rate 1	r-g
		Real Growth	Interest Rate	r-g		
1	China	9.9	0.2	**-9.7**	3.1	**-6.8**
2	India	7.2	3.4	**-3.8**		
3	Indonesia	5.3	-5.3	**-10.6**	5.4	**0.1**
4	Korea	5.3	3.7	**-1.6**		
5	Malaysia	4.4	1.6	**-2.8**	4.1	**-0.3**
6	Philippines	4.4	1.4	**-3**	6.1	**1.7**
7	Thailand	4.5	4.9	**0.4**		
8	Brazil	3.8	8	**4.2**	8.3	**5**
9	Chile	3.8	-1.5	**-5.3**	3.5	**-0.3**
10	Colombia	3.3	2.5	**-0.8**	6.4	**3.1**
11	Mexico	3	0.8	**-2.2**	5.1	**2.1**
12	Panama	5.6	5.9	**0.3**	5.6	**0**
13	Peru	6.5	1	**-5.5**	6.1	**1**
14	Russia	7.3	-10.6	**-17.9**	12.1	**5.3**
15	South Africa	5.2	2.4	**-2.8**	4.8	**0.9**
16	Turkey	4	15.1	**11.1**	6.7	**2.7**
	Average			**-3.1**		**1.1**

Source: IMF Article IV Staff reports, Bloomberg and WEO 2009.

India has consistently breached the rule of "IP not being over 25% of TRR" over the last 20 years. The FRBM Act, 2003 has not been able to curb the interest payments to TRR ratio given the huge expenditure commitments of Central Government in areas of infrastructure development, defense, subsidies and establishment expenditure. This would have a negative impact on the fiscal prudence measures and long term intergenerational equity.

3.10 Recent Initiatives in Public Debt Management in India

3.10.1 The **RBI Annual Report for 2005-06:**

The report emphasized functional separation of debt management and monetary functions in the post-FRBM Act era (RBI, 2006a).The report observed: "In order to address the issues arising from these provisions of the FRBM Act, and to equip the Reserve Bank as well as market participants accordingly, the Reserve Bank of India constituted a new department named as Financial Markets Department (FMD) in July 2005 with a view to moving towards functional separation between debt management and monetary objectives."

3.10.2 Kelkar Report:

The Kelkar Report emphasized the need for fiscal consolidation and recommended setting up a *National Treasury Management Agency* (MoF, 2004). The Kelekar report said: "In the present situation, it is imperative to seek every institutional innovation which can yield even the slightest improvements in the implementation of public borrowing, or slight improvements in risk management." "The placement of domestic debt issuance in RBI causes difficulties for RBI, given the conflicts of interest that arise between the multiple roles at RBI of debt issuance, monetary policy, bank regulation, and securities market infrastructure."

"The committee proposes the creation of a new agency, which may be named National Treasury Management Agency (NATMA). It would be an independent body, which interacts with MoF. Distancing the treasury function from the central bank is related to the need to avoid the three-way conflicts of interest, at the Central Bank,

between the goals of (a) monetary policy, (b) banking regulation, (c) the fiscal goals of government bond issuance and (d) the goals of RBI as a systems operator for securities infrastructure. The effectiveness and independence of RBI is being adversely affected by the need to make compromises between these frequently conflicting goals. . . In terms of the relationship with MoF, and questions of autonomy and accountability, NATMA should be placed on the identical footing as other external agencies, such as SEBI, RBI or CBDT."

3.10.3 The **Percy Mistry Committee Report:**

The committee recommended the setting up of an autonomous debt management office (DMO), either under the Ministry of Finance, or as an arm's-length agency (HPEC, 2007). It said: "Looking ahead, a sound public borrowing strategy for India would incorporate three elements. . . An independent Indian "debt management office" - operating either as an autonomous agency or under the Ministry of Finance - that regularly auctioned a large quantum of INR denominated bonds in an IFC in Mumbai. The size of these auctions would be substantial by world standards and would enhance Mumbai's stature as an IFC."

3.10.4 The **Rajan Report:**

This report also argued for a change in the structure of public debt management in India (CFSR, 2008). It observes: "This is also a good time to carefully think about changing the structure of public debt management, particularly in a way that minimizes financial repression and generates a vibrant government bond market. The Ministry of Finance has announced that an independent Debt Management Office (DMO) would be set up. This provides an opportunity to think about and incorporate

best practices in this field. The structure of public debt management should also be designed while keeping in mind the broader implications for financial market development.

The policy recommendations detailed above show a growing consensus amongst expert committees that India needs a debt management agency.

3.11 Concluding Remarks

In the initial 50 years of the Indian Republic, the top down and socialist approach to finances culminated in an enormous problem where India was on the verge of sovereign default with key sectors of growth, value and employment in a tailspin into unimaginable crisis. After the initiation of market oriented reforms in 1991, growth stabilized but public and external debt started to balloon upwards again as finances were managed with cavalier attitude and irresponsibly.

In 2002, the incumbent government of India realized the importance of responsible spending and structured growth and started serious steps to rein in debt – public and external planned implementation of fiscal responsibility measures. The enactment of such measures atleast ensured that the risk of runaway deficits was slowed.

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CHAPTER IV

FISCAL SUSTAINABILITY: AN EMPERICAL ANALYSIS

4.0 Introduction

In recent years, many developed as well as developing countries have pursued such fiscal policies, which led to considerable amounts of public debt. The accumulation of external/public debts combined with overspending that characterizes the behavior of these governments constitutes a threat to future generations. It not only jeopardizes the macroeconomic stability of an economy, but also curtails the ability of the government to undertake basic developmental activities and disrupt delivery of government services. The need to put a responsible fiscal policy and keep government debt under control have made sustainability of fiscal policy one of the most widely discussed problem in recent years. In the present chapter an attempt is made to empirically test for fiscal sustainability in India by adopting the analytical framework given by Quintos (1995).

4.1 Fiscal Scenario in India

Public debt in India has accelerated over the period 1991 – 2003. It grew more rapidly than did the overall economy. In fact, the public debt in India has accumulated since the 1991 crisis. With the implementation of rapid economic reforms, growth in government expenditure also remarkably improved leading to increased government borrowing during the nineties. This posed a challenge to the government in terms of servicing the debt obligations and also to contain it at sustainable levels. In recent years public debt grew rapidly because of a high volume of public spending, especially in the non-

productive areas: the high prices of imported oil and petroleum, subsidies and salaries and pensions of the civil service. With the onset of increasing public debt/GDP ratio in India, the sustainability of public debt came under scrutiny.

Although the concept of sustainability of public debt/finances has been in vogue for more than two centuries, its importance was recognized only with the seminal work by Domar (1944), and Harrod (1948). There is however, no generally agreed definition of debt sustainability. Literally speaking, it may be interpreted as preventing bankruptcy of the economy. The classical economists like Hume, Smith, and Ricardo were the first to analyze the sustainability of fiscal policy. The focus of their analyses was the on the composition between tax and deficit financing of public expenditure, assuming that the latter is an exogenous variable. Ricardo was the first to discuss the government debt neutrality and intertemporal budget constraint. He assumed that the current value of debt should be equal to the discounted sum of the future surpluses. In this context, the sustainability of fiscal policy is said to be achieved if the discounted value of debt converges to zero. This concept was later developed by Barro(1974) and called it the "Ricardian Equivalence theorem".

The IMF (2001) defines debt sustainability of a country as its ability and willingness to meet the current and future debt service obligation without recourse to debt rescheduling or accumulation of previous debt and without compromising growth. According to De Mole (1990), "if a country has serviced debt of a certain level (defined as percentage of exports, GDP or fiscal revenues) and this level does not increase, it will be willing (otherwise it would have already repaid it) to continue servicing the debt". In simple

words, sustainability can be seen as the capacity to keep balance between costs of additional borrowing with returns from such borrowing, which could be in the form of higher growth that results in higher government revenues that can be used for servicing the additional borrowing. Thus, we may infer that debt sustainability is essentially an intertemporal issue and needs to be tested empirically. In the light of this observation, an analytical framework is necessary to examine the issue of debt sustainability.

4.2 Analytical Background: Domar's Canonical Model

One of the earliest analyses of the dynamics of debt accumulation was given by Domar (1994)[2], in which both interest rate and growth rate are taken as exogenous. Based on this assumption, the analytical framework is derived as follow;

Let, b_t be debt-GDP ratio in period t; g_t be nominal growth rate in period t; i_t be nominal interest rate in period t; and p_t be primary deficit relative to GDP in period t.

The standard equation for debt accumulation is given by

$$b_t = p_t + b_{t-1}[(1+i_t)/(1+g_t)] \qquad (4.1)$$

Equation (4.1) can be written as

$$b_t = p_t + x_t b_{t-1} \quad \text{Where } x_t = (1+i_t)/(1+g_t) \qquad (4.2)$$

If $b_0 = p_0$, we have, $b_1 = p_1 + x_1 p_0$

Then, $b_2 = p_2 + x_2 p_1 + x_2 x_1 p_0$

Generalizing, we can write

[2] Adapted from the Rangarajan and Srivastava (2005)

$$b_t = p_t + x_t p_{t-1} + x_t x_{t-1} p_{t-2} + ... + (x_t x_{t-1} ... x_1) p_0 \qquad (4.3)$$

If it is assumed that x_t is constant, implying g and i are constants for all t,

we can write $$b_t = p_t + x p_{t-1} + x^2 p_{t-2} + ... + x^{t-1} p_{t-1} + x^t p_0 \qquad (4.4)$$

The canonical model (Domar, 1944) requires the additional assumption that p 's are also constant for all t. Since $x_t = (1+i_t)/(1+g_t) = x$ for all t, three cases namely (i) when $g = i$, (ii) when $g > i$, and (iii) when $g < i$, might arise

In the first case, we can write

$$b_t = \sum_{i=0}^{t-1} p_i = (t+1)p \qquad (4.5)$$

This implies that if $g=i$, the debt-GDP ratio is the cumulated sum of the primary deficits in all the previous periods. In the second case, when $g > i$,

$$b_t = p\{1 + x + x^2 + ... + x^{t-1} + x^t\} \qquad (4.6)$$

The term within parenthesis is a geometric series with common ratio x<1. As t tends to infinity, this sum tends to $x/(1-x)$. Then the long run (as $t \to \infty$) value of the debt-GDP ratio can be written as

$$b_t = p/(1-x)$$

$$b_t = p(1+g)/(g-i) \text{ as } t \to \infty \qquad (4.7)$$

In the third case, when, $g < i, x > 1, b_t$ will grow indefinitely.

Thus, a value of $p > 0$, will eventually become unsustainable for both cases when $g = i$ and when g < i. In the case, when $g = i$, the debt-GDP ratio grows linearly by the size of the primary deficit, and when $g < i$, the debt-GDP ratio grows explosively if the primary deficit-GDP ratio is positive.

We will now focus on the case where $g > i$. From equation (4.7), the long run equilibrium value of $b_t = b^*$ is given by

$$b^* = p(1+g)/(g-i) \qquad (4.8)$$

The fiscal deficit to GDP ratio (f*) corresponding to a stable debt-GDP ratio (b*) will be:

$$f^* = p.g/(g-i) \qquad (4.9)$$

Equations (4.8) and (4.9) provide a system of two equations in three unknowns, *viz.*, b, f, and p, assuming values of g and i are given $(g > i)$, and consistent with the a stable debt-GDP ratio[3]. It is indicated that high values of p will be associated with high levels of b and f. However, these equations do not provide a unique solution as the unknowns are more than the number of the equations.

Using equations (4.8) and (4.9) together, the relationship between b^* and f^* can be written as

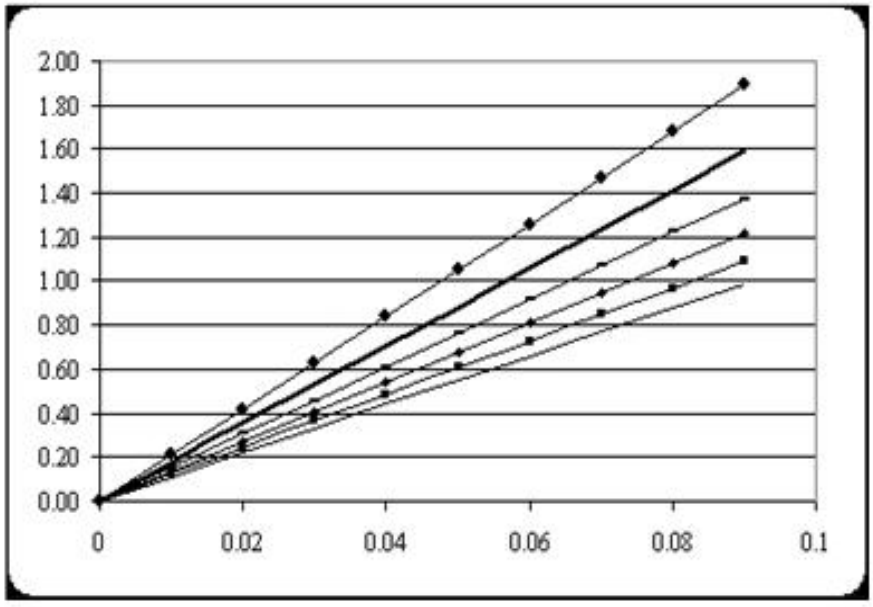
$$b^* = f^*(1+g)/g \qquad (4.10)$$

The pair (b^*, f^*) gives that level of fiscal deficit-GDP ratio at which the debt-GDP ratio remains unchanged at b^*. As shown in Figure 4.1, equation (4.10) gives a family of straight lines rising to the right, showing combinations of fiscal deficit-GDP ratio and corresponding stable debt-GDP ratio, for a given growth rate. This line shifts upward as

[3] The effect of an increase in the growth rate, given the interest rate and holding other variables unchanged, is to lower the equilibrium levels of fiscal deficit and debt

growth rates are lowered. In the figure below (figure 4.1) the vertical axis represents debt-GDP ratio and horizontal one fiscal deficit-GDP ratio. For lower growth rates, the line is closer to the vertical axis; as growth rates are higher, for the same fiscal deficit ratio, debt-GDP ratios are lower.

Figure-4.1 ***Stable Combinations of Debt- and Fiscal Deficit to GDP Ratios for Different Growth Rates***



Alternatively, the stabilization conditions can be expressed in an equivalent way in terms of the ratio of interest payments to GDP.

Defining interest payments to GDP ratio as (ip_y), we have

$$IP_t = i.B_{t-1} \text{ or } (ip_y)_t = ib_{t-1}/(1+g) \qquad (4.11)$$

As debt is stabilized $b_t = b_{t-1} = b^*$ and $(ip_y)_t = (ip_y)^*_t$

from equation (4.11) it follows that,

$$b^* = (ip_y)^*.(1+g)/i \qquad (4.12)$$

The corresponding level of fiscal deficit to GDP ratio is given by

$$f^* = (ip_y)^* g / i \qquad (4.13)$$

Equations (4.12) and (4.13) provide a set of two equations in terms of three unknowns, (*b, f,* and ip_y). Again, the system can determine unique values of any two of the three unknowns, provided one of the unknown is pre-specified. Clearly, additional information is needed to solve the system described by either equations (4.8) and (4.9) or equations (4.12) and (4.13).The critical question is whether, when $g > i$, sustainability is implied for any value $p > 0$. To address this question, it is useful to recognize that g_t and i_t are neither constant nor independent of the level of p. In particular, both g_t and i_t should be taken as stochastic processes and dependent on the levels of debt and fiscal deficit relative to GDP. At any time t, the debt-GDP ratio b_t will be higher than its previous year's level b_{t-1}, as long as the primary deficit to GDP ratio in the current period p_t satisfies the following condition:

$$p_t = b_{t-1}[(g_t - i_t)/(1+g_t)] = p_t^s \qquad (4.14)$$

Here, i_t is the average interest rate and p_t^s is called the debt-stabilizing primary deficit to GDP ratio. As long as p_t in any given year is equal to or less than p_t^s for that year, debt-GDP ratio will not rise in that year compared to its level in the previous year. Since p_t^s

depends on the difference between g_t and i_t, it is important to consider how should $\boldsymbol{p}$ be determined in any year since it may affect $\boldsymbol{g}$ and $\boldsymbol{i}$ in that year.

4.2.1 Implications of the Canonical Model

The following points emerge from the canonical model:

- The debt-GDP ratio will rise continuously for positive values of the primary deficit relative to GDP, if the growth rate is equal to or less than the interest rate.
- If growth rate is higher than the interest rate, and both of these are unaffected by the levels of fiscal deficit and debt levels relative to GDP, the debt-GDP ratio and the fiscal deficit to GDP ratio will eventually stabilize.
- The level of fiscal deficit relative to GDP that keeps the debt-GDP ratio stable can be specified as dependent on the growth rate only.
- The system of equations implicit in the canonical model can define combinations of stable debt-GDP ratio and fiscal deficit to GDP ratio but does not determine their best or most desirable values.
- In deciding a suitable fiscal stance for the medium to long run, it is best to consider the debt-GDP ratio and fiscal deficit to GDP ratio together rather than only one of them.
- The long term fiscal stance requires additional information on the impact of debt and deficit levels on growth, and the assumption of constancy of growth and interest rates should be given up. In this case, the ratio of debt to GDP will rise progressively, even if the growth rate is higher than the interest rate, if primary

deficit to GDP ratio is above a threshold level given by p_s, which can be specified as dependent on previous year's debt-GDP ratio, growth rate and interest rate.

The canonical framework indicates permissible levels of primary deficits for a given combinations of growth and interest rates, at different levels of debt-GDSP ratio. It does not indicate whether a higher or lower debt-GDP ratio may also be sustainable. It also does not indicate as to what may be the optimal ratio at which the debt-GDP ratio should be stabilized.

4.3 Empirical Tests of Debt Sustainability

Debt sustainability is essentially an intertemporal issue. Hence studies have been conducted on intertemporal budget constraint. Hamilton and Flavin (1986) proposed an empirical framework for testing the "limits" of public borrowing, using the postwar U.S. data. They concluded that sustainability requires stationarity of the government debt. Trehan and Walsh (1991), Bohn (1991, 1995), Jha and Sharma (2004), Martin (2001) and Quintos (1995), among others, have investigated the issue of fiscal sustainability by testing for the time series properties of public debt and budget deficits by using unit roots and cointegration analysis.

Several tests are suggested to test sustainability of fiscal policy. In some tests, the question of sustainability relies on the stationarity of the debt, deficit, and other main variables. Other tests are based on the cointegration analysis that seeks for the presence of cointegration relationships between revenues and expenditures. For instance, Hamilton

and Flavin (1986) assumed that the sustainability resides in the stationarity of the debt. Wilcox (1989) indicated that the discounted debt process follows a process integrated of order zero, I(0) without drift. The later studies developed alternative conditions for debt sustainability which imply that total public revenue and expenditure are first order integrated processes and the two series are cointegrated [see Hakkio and Rush (1991), Haug (1991), Afonso (2005)]. Later, Quintos (1995) expanded this approach by introducing the concept of "strong" and "weak" fiscal sustainability.

The concept of strong sustainability differs largely from weak sustainability in the sense that the former assumes a situation in which no future problems are expected in the behavior of deficits and consequently there is no need to change fiscal policy. In the latter, the governments may face future problems in marketing their debt that is accompanied by considerable risk of an increase in interest rates which may have adverse implications on the economic growth and public budget. In this situation, governments are urged to make fiscal reforms or at least should bring about a consolidated effort to address the situation.

Trehan and Walsh (1988) applied the stationarity test under the assumption of a constant real interest rate and demonstrated that it is equivalent to the test for cointegration between government expenditures inclusive of interest payments and revenues. Wilcox (1989) extended Hamilton- Flavin analysis by allowing for a non-constant real interest rate in the study. Hakkio and Rush (1991), tested the cointegrating vector under the assumption that the real interest rate is stationary. Quintos (1995) expanded on Hakkio and Rush (1991) and introduced "strong" and "weak" conditions for fiscal sustainability.

4.3.1 The Model:

The analytical framework of this study has been guided by the work of Quintos (1995). The government's one period budget constraint following the dynamic budget constraint by Hakkio and Rush (1991) may be written as,

$$\Delta D_t = E_t^r - R_t \tag{4.15}$$

where D_t the market value of debt of the central government, $E_t^r = E_t + r_t E_{t-1}$ is government expenditure inclusive of interest payments, and R_t is revenues. The interest rate, r_t is assumed to be stationary around the mean *r* and (equation 4.15) can be written as,

$$D_t - (1+r)D_{t-1} = e_t - R_t \tag{4.16}$$

where $e_t = E_t + (r_t - r)D_{t-1}$ is E_t^r with interest rates taken around a zero mean. Because (4.16) holds for every period, forward substitution yields,

$$D_t = \sum_{j=0}^{\infty} \lambda^{j+1}(R_{t+j} - e_{t+j}) + \lim_{j\to\infty} \lambda^{j+1} D_{t+j} \tag{4.17}$$

where $\lambda = (1+r)^{-1}$. the Representation of (Equation 4.17) in terms of the difference ΔD_t is written as,

$$E_t^r - R_t = \sum_{j=0}^{\infty} \lambda^{j-1}(\Delta R_{t+j} - \Delta e_{t+j}) + \lim_{j\to\infty} \lambda^{j+1} \Delta D_{t+j} \tag{4.18}$$

where equation (4.18) is derived by applying the difference operator Δ in equations (4.17) and using (4.15). In equations (4.17) or (4.18) to impose a constraint analogous to the inter temporal budget constraint faced by an individual, it must hold that

$$e_t \lim_{j\to\infty} \lambda^{j+1} \Delta D_{t+j} = 0 \qquad (4.19)$$

If (4.19) is satisfied, then inter temporal budget balance or deficit sustainability holds because this would require that the government run future surplus equal, in expected present-value terms, to its current market value of debt.

To test the condition given in equation (4.19), the procedure in the literature has been to test for the stationarity of ΔD_t, or alternatively to test for the stationarity of $E_t^r - R_t$ [if they are each I(1)] with cointegrating vector (1, -1) imposed. An equivalent procedure is to test for cointegration in the regression equation,

$$R_t = \mu + bE_t^r + \varepsilon_t \qquad (4.20)$$

and test that $b = 1$.

Hakkio and Rush (1991) relaxed this condition by showing that cointegration and $0 < b \leq 1$ are necessary conditions for a strict interpretation of deficit sustainability [i.e., equation (4.19) holds]. But Quintos (1995) argued that the condition $0 < b \leq 1$ is a necessary and sufficient condition for deficit sustainability and that cointegration is only a sufficient condition. He further suggested that, although $0 < b < 1$ is sufficient for the deficit to be sustainable, it is inconsistent with the government's ability to market its debt in the long run. In other words, the condition $0 < b < 1$ has serious

policy implications because a government that continues to spend more than it earns has a high risk of default and would have to offer higher interest rates to service its debt.

On the basis of the value of the coefficient *b* in the regression of equation (4.20), Quintos (1995) suggested two kinds of debt sustainability namely, 'strong' and 'weak' sustainability. He argues that if $0 < b < 1$ and Revenues (R_t) and Government expenditure (E_t^r) are $I(1)$, debt is sustainable in its weak form, no matter whether ε_t is $I(0)$ or $I(1)$. Thus, cointegration between the two variables plays no role in this case. Whereas if $b = 1$ and cointegration between these two variables holds, i.e. both variables are $I(1)$ and ε_t are $I(0)$, then debt is said to be strongly sustainable. Further, if $b = 1$ and the cointegration between these two variables does not hold but they are $I(1)$, in this case debt will be sustainable in its weak form. On other hand if $b = 0$ and both variables are $I(1)$, then debt is unsustainable and cointegration does not have any affect. All the above mentioned possibilities by Quintos may be put in the following tabular form. Quintos (1995) classification of 'strong' and 'weak' sustainability based on the value of coefficient.

Table-4.1
Sustainability Conditions

Value of b	**Cointegration in (6)**	**Order of integration of E_t^r and R_t**	**Conclusion for Sustainability**
b = 1	holds	I(1)	Strong sustainability
b = 1	Does not hold	I(1)	Weak Sustainability
0 < b < 1	Has no role	I(1)	Weak Sustainability
b = 0	Has no role	I(1)	Unsustainable

4.3.2 Empirical Results*:*

To assess the debt sustainability in Indian case over the period 1989-90 -2009-10, we have adopted the previously presented model of Quintos (1995). The relation presented in equation (4.21) is used in real variables,

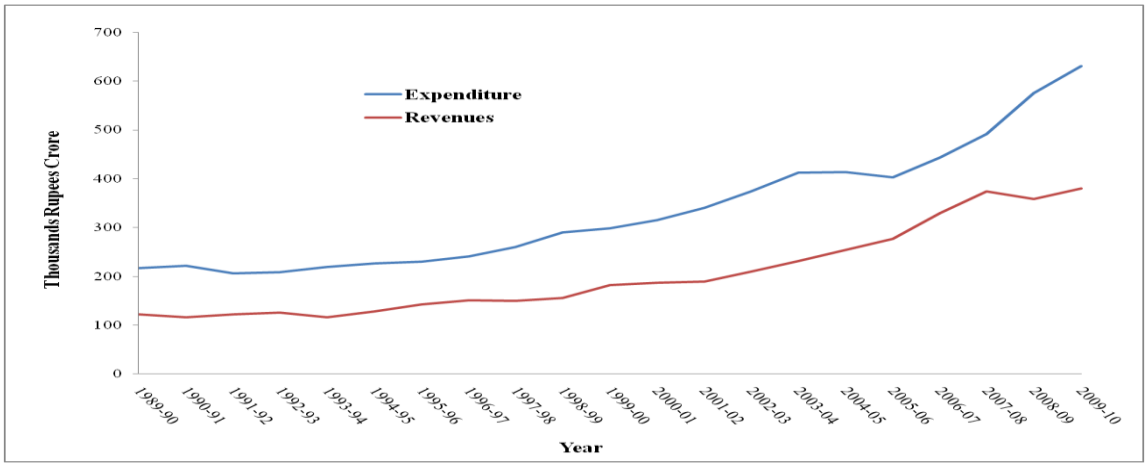
$$RR_t = \mu + bRE_t^r + \varepsilon_t \qquad (4.21)$$

where RR and RE denote real revenues and real government expenditures inclusive of interest paid on debt, respectively. Annual data over the period 1989-90 to 2009-10 is used; data for central government revenues and expenditure are extracted from the *Hand Book of Statistics on Indian Economy*, Reserve Bank of India. Real variables are constructed by deflating nominal variables using Gross Domestic (GDP) deflator.

4.3.2.1 Stationarity Tests*:*

Figure 4.2 plots the real government revenues (RR) and real government expenditures (RE) series.

Figure 4.2



The above graph indicates more or less a consistent growth in both government revenues and expenditures till the year 1997 and thereafter exhibits widening gap as governemnt expenditures have markedly increased on account of pay revision, subsidies and growth in non-plan expenditure. This situation was somewhat corrected by 2004-05, as the economy started to grow at 9 per cent with revenue buoayancy increasing and with falling real interest rates and most importantly fiscal restructuring and consolidation through the enactment of FRBM Act 2003 and the introduction of subsequent fiscal rules. However, with increasing demands on non-plan as well plan expenditures owing to infrastructure bottlenecks, expenditures have swayed widely after 2007 and again the gap between revenues and expenditures widened considerably as shown above.

As a test for stationarity of the data, conventional unit root tests such as ADF and Phillips Perron (PP) have been performed. But it is well known that the ADF test has low power with short time spans of data, and hence we use the other tests namely, KPSS test developed by Kwiatkowski et al. (1992) and DF-GLS test. Unlike the ADF test, the KPSS test has stationarity as the null and a unit root as the alternative hypothesis. The results of Augmented Dickey fuller (ADF), Phillips Perron (PP), Dickey-Fuller with GLS de-trending (DF-GLS), and KPSS tests for revenue and expenditure are reported in Table 4.2. The optimal lag length has been chosen using SBC information criterion.

Table 4.2

Unit Root Test Statistics at Level(with intercept and trend)

Variables	**RE**		**RR**	
	Value	lags	value	lags
ADF	-1.6818	4	0.4936	2
DF-GLS	-1.8410	1	-1.3645	0
PP	0.0378	-	-1.2656	-
KPSS	0.1893**	-	0.1667**	-

Unit Root Test Statistics at 1st Difference(with intercept and trend)

	RE		**RR**	
Tests	Value	lags	value	lags
ADF	-3.3450***	3	-5.6985*	1
DF-GLS	-3.1320***	0	-5.3030*	1
PP	-3.0341	-	-6.2754*	-
KPSS	0.0962	-	0.5000	-

*, **, *** denotes rejection of null at 1%, 5%, and 10% levels of significance respectively.

Based on the above tests performed for the stationarity of the data we can infer that all the variables are integrated of order one [I (1)].

4.3.2.2 Tests for the Debt Sustainability

To test for deficit sustainability, the conventional practice has been to first test for cointegration between revenues and expenditures. However, as shown by Quintos (1995), the necessary condition to be tested is whether $0 < b < 1$ [See Equation (4.20)]. The test for cointegration is important only if $b = 1$. If $b = 1$ and revenues and expenditure are cointegrated, then the strong form of deficit sustainability is satisfied. Otherwise, the lack of cointegration with $b = 1$ indicates that the weaker condition holds.

Therefore following Quintos (1995), we have performed the fully modified regression (FMOLS) of Phillips and Hansen (1990) on [equation (4.21)]. We use a test on b which follows Chi-Squared distribution. First we tested the null condition that $b = 0$ against the alternative that $b \neq 0$. If the null condition is rejected, we then again tested for the null condition that $b = 1$ against the alternative that $b \neq 1$. If the null condition is again rejected, then $0 < b < 1$, which implies that the deficit could be sustainable.

The results clearly reject the nulls of b = 0 and b = 1. Since the value of b is positive and significant, we may conclude that b lies between 0 and 1 (0 < b < 1). This implies that the deficit is sustainable in the full sample although not in the "strong" sense.

Further, for the parameter stability of equation (4.21) has been tested over the sample period, using the CUSUM and CUSUM squares recursive residual tests (due to Brown, Durbin, and Evans, 1975). The recursive residual plots are presented in figures 4.3 and 4.4.

Table-4.3

Results of FOMLS Estimation

Regression : Revenue on Expenditure				
Variable	Coeff.	Std Error	T-Stat	Sig. level
Constant	-32120.926	18360.223	-1.749	0.080
Expenditure	0.709	0.051	13.950	0.000

Tests on the parameter b with $\chi^2(1)$

Hypotheses			
Null	Alternate	Test statistics	Significance level
b=0	*b≠0*	194.604	0.000
b=1	*b≠1*	32.8697	0.000

Figure-4.3

Plot of Cumulative Sum of Squares of Recursive Residuals

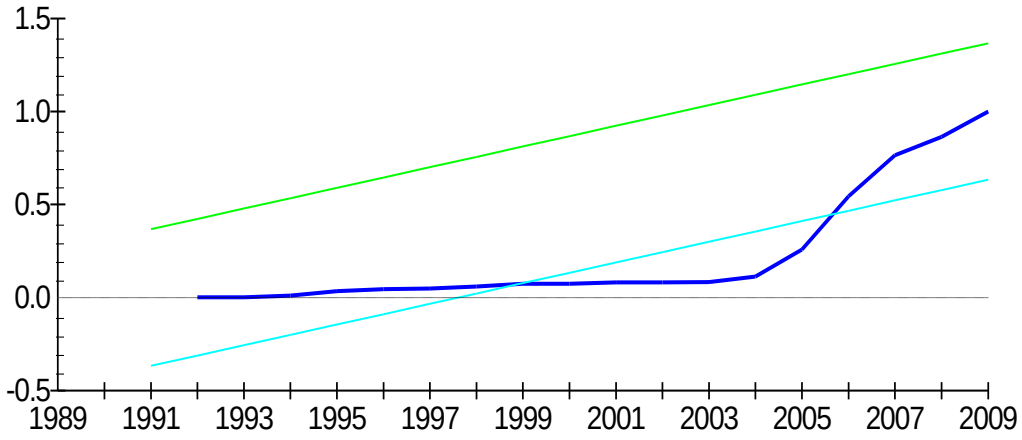
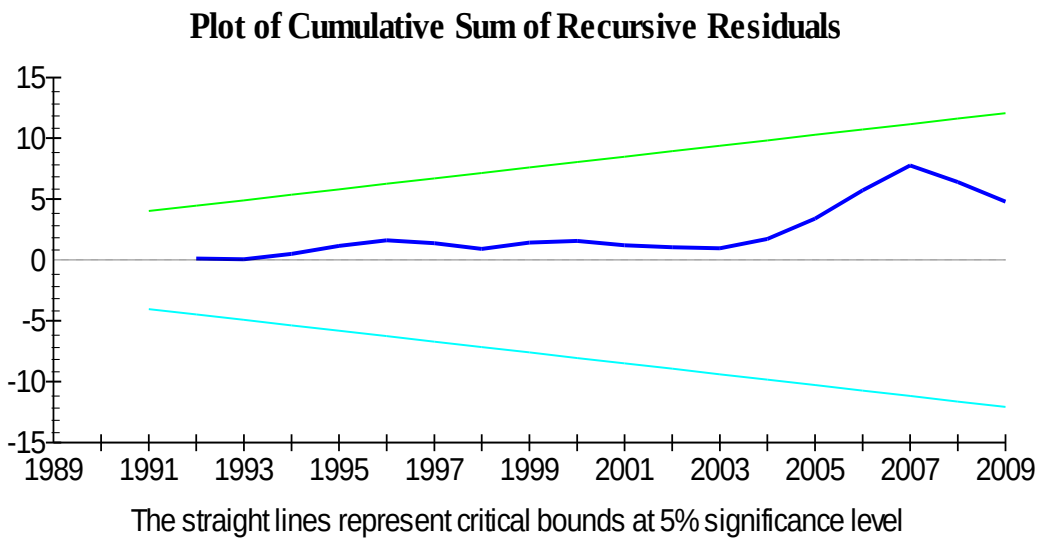


Figure-4.4



The plots of CUSUM statistics, presented in figure 4.4 lies within the 95 percent critical bounds, but the CUSUMSQ statistics lie outside the 95 percent critical bounds (See figure 4.3). Whereas the CUSUM statistics take account only the stability of the parameters, CUSUMSQ statistic also takes into account the variability of the variances.

Inference from the Plots

The plot of CUSUM statistics suggest that both government revenue and government expenditure appear to be moving steadily indicating broad stability. Further, the plot of CUSUMSQ explains variability of variances in both the parameters and the variances seem to be non-significant as indicated in Figure 4.4. Based on the plots and the results obtained it is clearly established that the parameters during the study period are stable.

4.4 Concluding Remarks

In the context of assessing debt sustainability, the behavior of some of the macroeconomic variables such as interest rate on the debt, growth rate of the economy, government expenditure, revenues and debt ratio are tested. There are several sustainability indicators closely reflecting their relationships to the intertemporal budget constraint whether they take account of the future evolution of the key variable of sustainability or not. In other approaches, a target value of debt is set. One of the most widely used indicators for assessing debt sustainability is the primary gap indicator, which measures the difference between the actual primary deficit and the primary balance required to stabilize the debt-to-GDP ratio.

Based on the data for the period 1991-2010, the sustainability of debt has been analyzed with respect to the sensitivity of government expenditures and revenues as well as other key fiscal parameters such as fiscal deficit and interest payments. The results suggested that the recent path of public debt followed in India appear to be weakly sustainable. For the debts to remain sustainable in future, substantial fiscal reforms are needed and policies should be oriented towards maintaining an increasing growth-interest rate differential.

An appropriate approach to analyze the growth effects of public debt in India would therefore seem to consist in studying the effect within the well-established framework of econometric growth model. Unit root test (test of stationary), co-integration analysis are used with a view to estimating the short run and the long-run dynamics of public domestic debt on government expenditure and revenues. Unsustainable debt would have

an impact on fiscal sustainability parameters such as primary deficit, fiscal deficit, interest payments and economic growth, in the sense that an unsustainable path would lead deterioration of these key macroeconomic parameters in the long-run.

Given the current trend of economic growth and fiscal deficit of around 6 per cent of GDP and debt to GDP ratio of 68 per cent, the co-integration results show moderate level of sustainability which can be further strengthened provided the future debt path gets regulated by the goals set by the FRBM Act 2003 and the rules set forth for the medium term fiscal stability.

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CHAPTER - V

DEBT SUSTAINABILITY WITH FISCAL RESPONSIBILITY AND BUDGET MANAGEMENT

5.0 Introduction

This chapter begins with an overview of the rules to sustain debt as part of the FRBM Act, 2003, and discusses the current scenario since the passing of the FRBM Act in 2003. It touches upon the global precedence to sustain debt - especially in New Zealand, EU, Australia and the US. Next, the different methods to define and assess debt sustainability including discussion on key variables and horizons are discussed. This is followed by a discussion on policy maker's interests in sustaining and managing debt. Finally, this chapter ends with interpretation of fiscal indicators before and after the passing of the FRBM Act 2003 in India.

5.1 An Overview of the FRBM Act 2003

The FRBM Act was enacted in 2003 by the Parliament of India to inculcate fiscal discipline. The FRBM Rules were notified in 2004. The FRBM Rules proscribe and enforce limits on fiscal and revenue deficits and encourage successive governments to set and meet deficit reduction targets. Since 2004, the government was supposed to reduce the revenue deficit to 0.5 percent of GDP by 2010 and fiscal deficit to 3.0 percent of GDP by 2010.

The following FRBM Rules enable governments to rein in deficits – fiscal and revenue:

- Defining “Fiscal Deficit” as the excess of disbursements (excluding the debt repayment) over the total receipts (excluding the debt receipts) from the Consolidated Fund of India in a given financial year.
- Defining “Revenue Deficit” as the difference between revenue expenditure and revenue receipts, which indicates increased liabilities of the Government without a corresponding increase in the assets
- Defining “Total Liabilities” as the liabilities under the Consolidated Fund of India and the Public Account of India.
- Defining Fiscal indicators as quantitative measures such as numerical ceilings and proportions as compared to gross domestic product utilized for evaluating fiscal position of the Central Government.
- The Government shall present before the Legislature the following fiscal information – Medium Term Policy Statement (MTPS); Fiscal Policy Strategy Statement (FPSS); and Macro-Economic Framework Statement (MEFP).
- The MTPS would set a 3-year rolling Target for the pre-defined fiscal indicators along with the underlying assumptions; assess sustainability w.r.t. balance between revenue receipts and revenue expenditure and use of capital receipts for generating productive assets.
- The FPSS shall contain Union Government policies relating to taxation, expenditure, borrowings and other liabilities, lending and investments, pricing and description of other activities that has budgetary implications; listing of Govt. priorities; key fiscal measures and rationale for any deviation from the prior set measures on taxation, subsidy, expenditure, administered prices and borrowings etc. and discussion on adherence of the current policies to those set forth in MTPS statement.

- The MEFS shall contain an assessment of Growth in GDP; the fiscal balance of Union Government as reflected in revenue balance and gross fiscal balance; and the external sector balance as reflected in current account balance and balance of payments.
- Inculcating fiscal management principles, the Act specifies the rules to reduce fiscal deficit in a specific time period and also to assume contingent liabilities as guarantees and also total liabilities as a percentage of GDP. It also, provides for exceptions where the fiscal deficit can exceed targets under specific important spending categories (defense, calamities etc.)
- The Govt. shall not borrow from RBI with the following exceptions – to meet cash disbursements; subscribe to Govt. of India Issues (both Primary and Secondary)
- The Govt. shall ensure fiscal transparency, minimize secrecy and increase disclosure and enforce compliance by increasing revenue and/or reducing expenditures and notifying and gaining approvals of any deviations in meeting obligations.
- The Act empowers the incumbent government to frame rules and present the rules before the Parliament and imparts protection from legal briefs by civilians on any acts/actions taken in good faith to enforce the rules of the FRBM Act 2003 and empowers the Govt. to remove any difficulties in implementing the provisions.

Since the passing of the Act in 2003, there was a marked improvement in transparency and disclosures in the process of budgeting and reporting of fiscal and monetary state of the nation.

The FRBM Act is unique in its form as it is aimed solely at curbing Government of India itself from doing things that Parliament does not want it to do. No party other than the government itself is legally bound by the Act. The rules are even more unusual - the Union Government is to issue them in order to constrain itself.

As far as the "Rules" are concerned, the legal consequences are largely cosmetic. The Government can itself amend them. If the 4 percent fiscal deficit target is found unrealistic, a notification from the Finance Ministry can change it to 5 per cent or any other figure. The FRBM Act 2003 can be amended routinely by simply adding a clause to the annual Finance Act, the way the Income Tax Act or Sales Tax Act is amended. In fact, the first amendment was immediately introduced by the Govt. of India within three days of the Act coming into force, to postpone the date for elimination of revenue deficit from March 2008 to March 2009.

The only legal restriction may be that a target which is higher than the level of deficit in the year the Act was passed, may be beyond ability as the Act uses the word `reduce.'

Though the stated goal of zero deficit before 2010 were never realized, the FRBM Act 2003 has acted as a deterrent against the possibility of irresponsible fiscal and revenue actions by successive governments in India and also ensured against runaway deficits. This act could also influence Government behavior and over a period of time make fiscal prudence a norm.

5.1.1 Precedence on Curbing Deficits Globally

During the 60s to 80s, most countries in the world followed the policy of spend and grow, which led to alarming deficits. Some countries recognized the problem and

there were specific instances where sovereign Governments had promulgated laws to curb and eliminate deficits in their countries. To reduce deficits, fiscal responsibility legislation was touted as a solution to fiscal profligacy by experts, based largely on four international examples of apparent success.

One of the earliest attempts was made in the US in the early 90s with the passing of the Budget Enforcement Act. This law does not impose any mandatory deficit target and distinguishes between mandatory expenditure (not subject to ceilings) and discretionary expenditure (subject to detailed and tight ceilings). This law also allows for the normal course of the business cycle to be an effective factor as there is no ceiling on the deficit itself.

In a time of boom, tax revenues increase and the deficit shrinks; in times of recession tax revenues decline; since there is no change in expenditure ceilings, the deficit will raise. The Act has been recognized as a qualified success and has helped in restraining discretionary government expenditure. But this was primarily because of the rigidity: in the American political and constitutional mechanisms - the Executive cannot pass fiscal legislation as it pleases. A mere Act of Congress can effectively restrain the government because the Executive cannot easily amend a law once passed - which is quite different from our Parliamentary system.

The next instance was New Zealand, which introduced a Fiscal Responsibility Act in 1994. This Act has been hailed by many experts as a model, and more effective in ushering and maintaining fiscal responsibility. From an economist's point of view, it is conceptually and theoretically elegant.

It is noteworthy that this enactment was passed by a government that gave up control over its central bank, and was already strongly committed to a tight fiscal policy and elements of proven conservative economic principles. The New Zealand Act provides a very large degree of flexibility (more than the Indian FRBM Act) but has induced the government to be fiscally responsible and achieve its aims. This act led to greater fiscal transparency, but whether fiscal transparency leads to fiscal prudence is extremely debatable.

The third example is that of Australia which followed its nearest neighbor – New Zealand to pass a law to rein in deficit and fiscal indiscipline. A study by Stanford University in March 2011 has named Australia as the top Nation in the Fiscal Responsibility Index with laws that "implemented strong fiscal rules have seen declining debt levels and reasonable government spending."

The next example is the European Union and the Growth and Stability Pact of 1997, which bound EU members to bring down and then keep their deficits below 3 per cent of GDP. Strictly, this is a `fiscal responsibility treaty' rather than an Act, but nevertheless legally binding. In the years before the introduction of the Euro in 1999, the Treaty appeared to have succeeded in achieving deficit reductions. Since then, however, its record has been awful. The decade of 2000s has seen the Treaty almost totally unravel, with the biggest Euro countries guilty of breach of the ceiling. The Treaty even had provisions for a penalty in the form of a non-interest bearing deposit of 0.2 per cent of GDP to be paid by defaulting countries, to be later treated as a fine if the problem was not remedied in two years.

However, the European Council of Ministers chose not to enforce the provisions, by disagreeing with the recommendation of the European Commission (the executive

wing). This decision was taken with full transparency (as required by the Pact) and detailed written reasons, even disclosing who voted for and against, indicating that transparency is an over-rated virtue. On July 12, 2004 the European Court of Justice held that countries could not simply waive the provisions, but the Council nevertheless does have the right to desist from collecting the penalty, converting the Treaty into more of a statement of good intentions than a binding legal obligation.

The evidence points to a clear `no' as to whether a government "not committed" to a particular level of fiscal prudence can be restrained by the passing of fiscal responsibility legislation.

The FRBM Act does have its "Fringe Benefits" which turn out to be useful during downturns. The benefits of the Act include influencing the sovereign rating agencies like Moody's and Standard & Poor's and international lenders with a credible commitment to fiscal responsibility, reducing borrowing costs.

5.2 Assessment of Debt Sustainability: Different Approaches

Debt sustainability, though an important policy objective, is a vexing and incompletely definable issue facing the globe today as debt sustainability cannot be (im)precisely measured directly. Debt sustainability tries to answer a deceptively simple question: when is a country's debt becoming so big that it will not be fully serviced? Based on this question, the more apt definition of Debt Sustainability can be that "sustainability requires that the net worth of an entity (the government or the country), defined as the present discounted value of net revenues *less* the current debt, be on a not-decreasing trend," provided by Arrow *et al* (2004). A synopsis of different definitions is provided in the table below:

5.2.1 Theoretical and Operational Definitions of Debt Sustainability

Let b_t be the debt-to-GDP ratio at time *t*. The various definitions can be summarized as follows. They are listed from the least to the most demanding.

S. No.	Definition	Type/Authors
1	Solvency *plus* no illiquidity. Illiquidity arises when the debt cannot be serviced at a particular point in time	Debt Serviceability
2	$b_t \leq \bar{b}$, where *b* is a threshold	DSA Definition
3	Solvency *plus* no need for major correction	IMF definition
4	The present value of b_t becomes negligible for long horizons ($lim\ b_t/(1+r)t = 0$ as $t \rightarrow \infty$), where *r* is the real interest rate. An equivalent definition is that the present value of primary balances $\geq b_t$.	Solvency
5	Net worth, i.e. the present value of primary balances *less* b_t, is not decreasing over time	Arrow *et al*
6	b_t does not grow without bounds. An alternative is that b_t be (weakly) declining	Debt-Stationarity

Debt sustainability is a forward-looking concept and it cannot be assessed with certainty. In that sense, Debt Sustainability Analysis (DSA) is an extremely difficult and inexact endeavor. At best, one can make educated guesses but it is important to recognize at the outset that these are just guesses, no matter how sophisticated they may be. The implications of this "impossibility" are far-reaching.

Given the large number of guesses that are required to reach any conclusion, at best, one can hope to make statements of the type: "there is a probability of x% that the debt is sustainable at a particular horizon". Two aspects need to be highlighted at this stage. First, DSA can only provide probability. In extreme cases, it can be 0% or 100%, but generally it will be somewhere in the middle, i.e. relatively not informative. It is evident that DSA is rarely black-and-white and therefore a poor

guide to policy. Second, the probability that a debt is sustainable (from IMF perspective) is bound to change over time. For example, a highly indebted government that runs a sizeable primary surplus will see its probability of debt sustainability rise over time. Conversely, a government that starts with a low debt but systematically runs large primary deficits will have a declining probability of debt sustainability. Thus any statement on sustainability is only valid for a particular horizon.

In theory, horizon should be infinite but, in practice, it is determined by the availability of reliable forecasts: if forecasts of primary balances, interest rates, GDP, etc. are extended to 10 years, the DSA will provide an answer at the 10 year horizon, much less than the infinite horizon that is logically required. Since 10 year forecasts are totally unreliable, the horizon is bound to be much shorter, but this undermines the rigor of the analysis and is a very serious problem.

5.2.2 Different Assessment Methodologies

One of the challengers for theorists and practitioners is that there is no single universal assessment methodology that is acceptable to all. This sometimes poses problems to practitioners while identifying the best one. We present the different Debt Sustainability Assessment Methodologies below.

5.2.2.1 The IMF Standardized Approach

The IMF approach attaches a standardized DSA to "program design and to Article IV consultations" to examine both the public and external debts. The stated intention is to

provide a simple, fully transparent and standardized tool that can be readily applied to all countries. The World Bank has adopted a similar procedure.

Simplicity is achieved at the cost of improbable assumptions; these assumptions are transparent, but they are less innocuous than they are made to be because the underlying complexity is concealed.

Focusing here on the external debt part of the exercise, the IMF approach includes the following four steps:

Step i. A five-year central forecast, or baseline, of the variables that affect the evolution of the external debt: the primary account, GDP, interest and exchange rates, and inflation.

Step ii. The resulting evolution of the debt, as a share of GDP, over the next five years. This evolution is uncontroversial as it follows from the following accounting identity:

$b_t - b_{t-1} = (r - g)\, b_{t-1} - primary\ balance_t$

Where b is the debt-to-GDP ratio, r is the real interest rate and g is the GDP growth rate.

Step iii. Several stress tests are simulated that look at the effect on debt of adverse shocks affecting the variables forecasted in step (i). The shocks are as follows: first, each of three variable (the interest rate, real GDP growth and the primary current account) is changed one by one by one-half standard deviation over the same five-year horizon; then all the variables are simultaneously shocked by one quarter standard deviation each over five years; finally the exchange rate is assumed to be depreciated once by 30% at the beginning of the simulation period. The user can also define a different set of scenarios and simulation

paths. If the debt dynamics appear unfavorable, then an alternative adjustment scenario is prepared which will typically define a path for the debt ratio which results in stability over the medium-term and favorable developments in macroeconomic indicators[4]. Attention is then focused on the adjustment in the primary balance required to meet the debt target, and the fiscal measures that can generate this adjustment. In the process, an attempt is made to account for the effect of fiscal adjustment on other economic variables (most notably growth and interest rates, since these directly influence sustainability calculations), so that the final adjustment scenario may only be reached after a process of iteration which could require a re-specification of the debt target[5].

Step iv. The DSA concludes with a judgment on whether the debt levels implied by any or all of the stress tests are too high for the debt to be considered sustainable.

Analysis of IMF approach

Steps (i) and (ii) are mechanical implications of the IMF's forecasts. If the forecasts are accurate, the implied debt level is a reasonably safe prevision. The Fund reports on its own studies that show that the forecasts tend to err on the optimistic side, with equally optimistic debt predictions.

Probability of worst case scenarios

[4] *Quite often, a scenario with policies that are weaker than those currently in place is prepared to illustrate the costs of relaxing the fiscal policy stance. In the context of assessing fiscal vulnerability, Hemming and Petrie (2000) also propose stress-testing of the baseline fiscal scenario by examining the impact of extremely adverse developments on fiscal outcomes.*

[5] *Under usual circumstances in countries with a debt problem, fiscal adjustment is expected to have beneficial effects on both growth and interest rates via confidence effects, lower country risk premia etc. However, excessively harsh adjustment could have the opposite effect, which might justify a different target (normally specified as reaching the original debt target at a later date).*

To mitigate the above issue, "in order to impose discipline" on the analysis, step (iii) looks at some worst case scenarios. Since "worst" can be virtually anything, the procedure attempts to be reasonable and transparent. To that effect, the shocks are precisely calibrated. How likely are 0.5 standard deviation shocks? The IMF argues that the probability of the debt exceeding the worst case on the fifth year is between 15% and 30%, "which seems a reasonable balance between capturing the medium-term risks to debt dynamics without being so extreme as to be irrelevant for policy discussions" (IMF, 2005). The emphasis is rightly put on policy implications, which raises the general question of what can be learnt from stress tests.

Borrowing and growth

An important linkage that is missing concerns the possible growth-enhancing effect of external borrowing. In theory, a country with low levels of human and physical capital stands to benefit from external borrowing. If the borrowing is wisely invested, the returns should more than cover the costs. The benefits come in terms of accelerated growth and better debt ratings.

This linkage is explicitly ignored in the stress tests. Of course, if debt distress occurs along the way, the expected growth bonus from external borrowing would be dissipated; this still does not justify ignoring the link.

Country Policy and Institutional Assessment (CPIA)

The IMF definition of debt sustainability, that debt levels not be 'too large', naturally leads to the need to establish thresholds. The IMF-IDA response has been to look for statistical links between various causes of debt distress and the debt level. The CPIA index is found to exert a significant effect on the probability of external debt distress, and it is reasonably precisely estimated. On the basis of this analysis, it is possible to

assert that an improvement in the CPIA index reduces the probability of distress – which provides some support to the index – and even to compute by how much. This is not how CPIA is used in DSA, however.

The procedure instead uses the estimation to answer a different question: what debt level implies a 25% probability of debt distress? The answer cannot be based on the partial effect of the CPIA index only, it involves the whole estimation. If the estimation does a good job at explaining debt distress episodes, the answer will be precise and a good candidate to establish a threshold for each country.

Debt Sustainability Analysis (DSA) of IMF attempts to answer whether traditional debt relief mechanisms are sufficient to allow a country to service its debt under plausible assumptions about future export and output growth. The DSA involves choosing a fixed time horizon, projecting forward key economic indicators such as GDP growth, growth of exports, exchange rates, and budget aggregates and looking at the behavior of the stock of external debt and of debt service payments. To qualify for the HIPC relief of IMF (and for debt to be regarded as unsustainable), the net present value (NPV) of external debt as a ratio to exports under the baseline scenario needs to be above 150 percent[6]. What the DSA looks at primarily is external debt sustainability; the HIPC also includes a "fiscal window." This responds to the concern that, particularly for very open economies, ratios of debt or debt service to exports may belie the underlying fiscal sustainability of a country's debt profile. For countries with exports above 30 percent of output and revenues above 15 percent of output, a NPV of public external debt in-excess of 250 percent of central government revenue

[6] *The NPV of external debt is used in order to best capture the concessionality of the debt structure.*

is regarded as unsustainable[7]. The aim of this fiscal criterion is to ensure that debt sustainability is achieved both from an external and fiscal standpoint.

The DSA approach, though widely applied has a glaring shortcoming - it relies on the arbitrary nature of indicators of sustainability. But the main advantage of the DSA approach in the assessment of fiscal sustainability in the context of a broader medium-term macroeconomic scenario is that debt targets that are not sufficiently ambitious will usually be revealed by weakness in one or more key macroeconomic indicators. Lastly, the link between fiscal and external sustainability warrants further consideration, with a view to developing an integrated analytical framework that combines both aspects of sustainability and from which fully consistent indicators of fiscal and external sustainability can be derived.

5.2.2.2 The Debt-Stabilizing Primary Balance Approach

The classic approach asks what is the current account required to stabilize the debt. The objective is to stabilize debt at its current level or at any other level deemed more desirable. This approach is simple, transparent and easily implementable because it requires few assumptions. In its simplest form, it looks at the current debt to GDP ratio and computes the primary balance which would permanently keep this ratio unchanged. It requires two assumptions: what will be the evolution of the real interest rate and what is the potential growth rate? Typically, past trends are assumed to remain stable over the indefinite future but shocks can be factored in, just as in the IMF's DSA. The formula is PCA = (interest rate – growth rate)*debt.

[7] *The criterion on revenues is included to prevent the moral hazard problem of having a country actually reducing its fiscal revenues (and increasing its debt-revenue ratio) in order to receive debt relief.*

Looking at the debt stabilizing primary balance, not just at the effect on the debt path, provides a different outlook on stress tests. First, it de-dramatizes the shock effects. It shows that sustained but moderate primary balance corrections can insure sustainability – here defined as debt stabilization – in the face of even unusual shocks. Given the low probability of the shock, it would make sense to allow a slower return – improbable shocks do occur, but infrequently. Lengthening the horizon would clearly allow for small primary account corrections. In addition, adverse shocks are likely to be compensated sooner or later by favorable shocks.

Second, this approach also de-dramatizes the inherent instability of the debt accumulation process. Even very large debt shocks can be dealt with through moderate primary account corrections. The reason is that a moderate sustained primary account correction produces a large cumulative effect as the shock itself.

Third, this approach brings to the fore the policy implications. Obviously, "Stabilized" is more palatable, economically and politically; it avoids a massive spending contraction which is bound to result in a severe recession. It is a general principle that temporary shocks should be met with smoothing policies, i.e. policies that spread over time.

A rigorous assessment performed by Bank of International Settlements (BIS) in 2010 on the debt sustainability of multiple countries utilizing the Debt Stabilizing Primary Balance approach has shown fiscal problems confronting industrial economies are bigger than suggested by official debt figures that show the implications of the financial crisis and recession for fiscal balances. As frightening as it is to consider public debt increasing to more than 100% of GDP, an even greater danger arises from

a rapidly ageing population. The related unfunded liabilities are large and growing, and should be a central part of today's long-term fiscal planning. The relevant figures are given in table 5.1. The table shows the average primary balance required to stabilize the debt – GDP ratio at 2007 price level.

Table-5.1

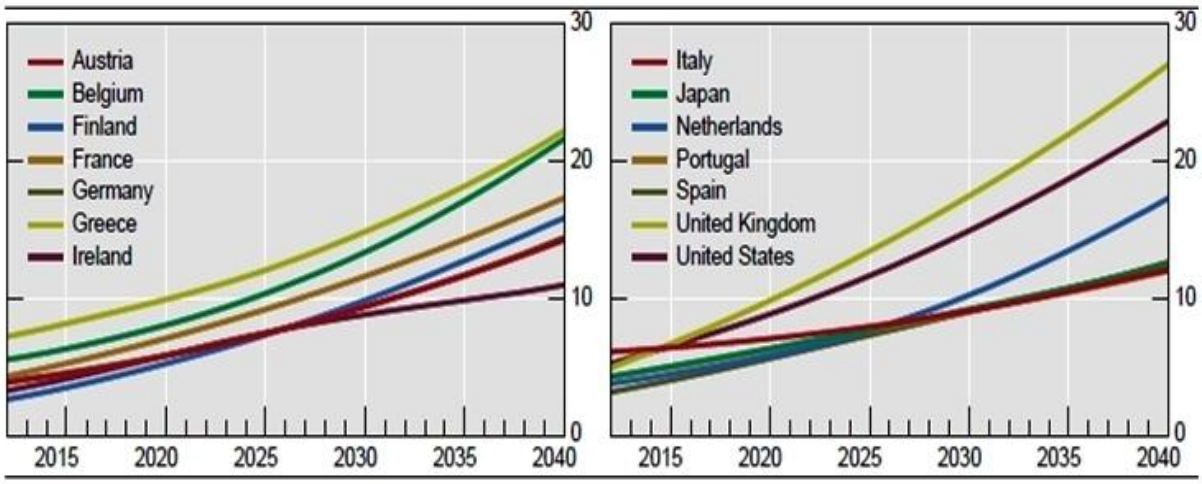
Average primary balance required to stabilise the public debt/GDP ratio at 2007 level*

Countries	Over 5 years	Over 10 years	Over 20 years	Memo: Primary Balance in 2011 (forecast)
Austria	5.1	3.0	2.0	-2.9
France	7.3	4.3	2.8	-5.1
Germany	5.5	3.5	2.4	-2.0
Greece	5.4	2.8	1.5	-5.3
Ireland	11.8	5.4	2.2	-9.2
Italy	5.1	3.4	2.5	0.0
Japan	10.1	6.4	4.5	-8.0
Netherlands	6.7	3.7	2.3	-3.4
Portugal	5.7	3.1	1.8	-4.4
Spain	6.1	2.9	1.3	-6.6
United Kingdom	10.6	5.8	3.5	-9.0
United States	8.1	4.3	2.4	-7.1

** As percentage of GDP Source: Mohanty, M.S. and F. Zampolli,(2010)*

Figure-5.1

Projected interest payments as a fraction of GDP (in percent)



Source: Mohanty, M.S. and F. Zampolli,(2010)

It is essential that governments not be lulled into complacency by the ease with which they have financed their deficits thus far. In the aftermath of the financial crisis, the path of future output is likely to be permanently below where we thought it would be just several years ago. As a result, government revenues will be lower and expenditures higher, making consolidation even more difficult. But, unless action is taken to place fiscal policy on a sustainable footing, these costs could easily rise sharply and suddenly.

5.2.2.3 Value at Risk Stress Tests

Financial institutions have developed procedures to explore the risks associated with portfolios, - the Value at Risk (VaR) approach. For financial firms, the issue is that they can go bankrupt. At the heart of this approach are two main ideas: that history allows evaluating the probability of various events or combinations of events, and that reactions should take into account both the possible severity of each event and its likelihood.

The techniques used to measure the plausibility of various risks can be applied to the debt sustainability question. The IMF's approach takes a partial step in this direction when it shakes some variables on the basis of their previous behavior but, as noted above, it ignores how these variables react to each other. In principle, it is possible to go much further in this direction but at the cost of adding considerable complexity and opacity.

5.2.2.4 Reaction Functions

It is a fact that policies do matter. Adequate policy reactions can deal with shocks and these reactions need not be drastic - given time and commitment, small policy actions can do. This observation leads to the idea that debt sustainability is achieved as long as the authorities adequately react to shocks. Debt sustainability, therefore, can be seen as a consequence of the demonstrated behavior of the authorities.

Viewed this way, debt sustainability can be assessed by observing how each country's authorities behave. This leads to the estimation of policy reaction functions. In the area of monetary policy, such functions are known as Taylor reaction functions and have become routine. The approach has started to be applied to public debts more recently.

The key question is whether the primary surplus is systematically raised when the debt level rises. It is possible to estimate the strength of this reaction and to determine a threshold beyond which the debt accumulation process is stable, which provides an alternative definition of sustainability.

The advantage of this approach is that it does not require the estimation of likely shocks and their respective probabilities. Nor does it require passing judgment on what is an acceptable debt level, avoiding the contentious CPIA process. The limit of the approach is, once again, a consequence of *the impossibility principle*. Debt sustainability is a forward-looking concept; future governments are not bound by past government behavior. Evidence of past sustainability, or the lack thereof, is not guarantee that future governments will continue to react in the same way. All that can be concluded is whether past practices are delivering, or not, debt sustainability.

One benefit of this approach is that it attracts attention to the issue of policy-making institutions. The best guarantee that the authorities will always react to shocks in a debt stabilizing way is that their decisions be embedded in a framework that constrains them to do so. Put differently, sustainability requires that the debt level be systematically treated as a policy objective. This can be done in many ways.

5.2.3 Discussion on Assessment Approaches

The foregoing overview of the IMF's DSA and alternative approaches yields a number of conclusions:

- The various approaches to debt sustainability differ from one another in two main respects: the definition of sustainability and the way they attempt to deal with *the impossibility principle*.
- Strict definitions of sustainability start from the solvency condition, sometimes strengthening them – the IMF adds a no major adjustment condition – sometimes relaxing them – the Arrow et al. (2004) suggests eventually achieving solvency. Weaker definitions focus on stationarity of the debt level, usually scaled by GDP or exports.
- One way or another, implementation of these definitions requires making guesses about the future evolution of some variables. This gives rise to the impossibility principle: because the future is unknown, any debt sustainability assessment is only valid within the bounds of the underlying guesses.
- There is no way to escape impossibility principle. Any approach is based either on an analysis of the past, whose relevance is unknown, or on

simulations of what the future might be, which is unknown by definition. Some approaches – e.g. value at risk stress tests – combine both procedures.

- The IMF approach combines simple and transparent procedures (computing debt paths based on scenarios) with more elaborate procedures (CPIA). The former are somewhat arbitrary and lay emphasis on debt thresholds. The latter attempt to extract information from the past but are of a "black box" nature.
- The impossibility principle does not provide support for the view that added complexity allows for more precise assessments. Value at risk stress testing, for instance is state-of the-art and technically clean but, as far as policy-making is concerned, the benefits are illusory.
- Debt sustainability is intimately related to credibility. Credible authorities may adopt weaker definition of debt sustainability, eschewing the serious economic and political costs inherent to strict definitions. Credibility, in turn, emphasizes the role of policymaking institutions.

- Policy conclusions drawn from DSA exercises must be considered with care. Sacrificing growth – in the short and even in the long run – to imprecisely known debt sustainability risks can be very costly. Trading off growth and debt sustainability will always remain more art than science.

5.2.4 Implementation Approaches

As any guide to policy-making, DSA must be both simple and transparent. Simplicity is needed to allow every country – especially the less developed countries where growth crucially depends on external borrowing – to be able to produce its own analysis.

Transparency is important because the range of possible debt distress causes is infinite. Vague and low probability threats cannot inform policy choices. Hence, DSA ought to rely on a number of principles.

Accept the Impossibility Principle

Except for obvious but extreme cases, it will never be possible to assert that a debt is unsustainable as defined by the IMF. Its own definition requires checking for solvency, which is impossible. It also requires passing judgment of what is a major adjustment, which involves assessing the willingness and political ability to carry out unpopular policies. This in turn calls for an evaluation of the impact of these policies and of the likely reaction of various segments of society, which depends on the political regime and, in democratic countries, on the electoral calendar. Finally, except for concessional loans, DSA is directly influenced by market sentiment, a source of unpredictable vicious – or virtuous – cycles.

No Trade-off between Impossibility and Simplicity

The impossibility principle rests on the uncertainty inherent in predicting the future. While eliminating this uncertainty is plainly not an option, a natural temptation is to reduce uncertainty by adopting sophisticated instruments. Most users are unlikely to grasp how these instruments function, however. Complexity means opacity. It is an illusion to think that some degree of opacity is worthwhile because even the most sophisticated instruments do not break the impossibility principle. Opacity, on the other hand, may result in the mistaken use of the instruments. Simplicity, which lays bare our lack of knowledge of the future, is a virtue in and by itself.

Adopt a Workable Definition of Debt Sustainability

Too many definitions do not just make life uncomfortable. They reveal that debt sustainability is and will remain a vague concept. In addition, there is a huge gap between theory and implementation. From an operational viewpoint, two main approaches are possible: the first one rests on debt thresholds, the second one on the evolution of debt levels. Given the impossibility, at least for the time being, to establish uncontroversial debt thresholds, DSA should rest on the second approach: a debt is sustainable if it is on a non-increasing trend.

Replace Debt Sustainability with Debt Distress Avoidance

That a debt level be trend-decreasing is neither necessary nor sufficient to avoid debt distress, however. Numerous debt crises occurred while the debt-GDP ratio was declining while many countries with long-rising debt levels have not run into trouble. In the end, the main reason for paying attention to the evolution of debts is the concern with debt distress. At the practical level, this distinction makes little difference but, at least, the concept of debt distress is clear.

Recognize that Debts are not Necessarily Bad

Many countries and virtually all governments are quasi-permanently indebted, for good and bad reasons. The view that debts should always be reduced assumes that all debts are bad, which cannot be generally true. Separating good from bad debts is another hopeless undertaking, but it is important to move away from the presumption that debt accumulation is to be avoided under any circumstance.

Open the Process to Determine whether Debts are Excessive

How to assess whether a debt is excessive? When the debt is traded, the risk premium provides a reasonable guide. It also provides the right incentive for governments to

lower their debt levels. When the country does not have market access, there is no such gauge. Yet, the lenders are naturally entitled to have a view. Given that any assessment is bound to be controversial, as the CPIA exercise well illustrates, the multilateral institutions should have a procedure to assess excessive indebtedness that is open and involves external experts.

Time Horizon is to be Appropriate

When current debt levels are considered excessive, debt distress avoidance calls for a declining trend. How steep should the rate of decline be? Obviously, bringing the debt down to a safe level before debt distress occurs is highly desirable, but it can also be costly in terms of growth and employment. There is a trade-off between a fast debt rollback and the associated costs. This trade-off must be carefully assessed, taking due account of each country specificities.

Accept Risk

Unless current debt levels are considered excessive, keeping them stable is likely to avoid debt distress under most plausible conditions. To be sure, there will always be exceptional events that will result in debt distress. Like all disastrous events, this risk must be accepted as a fact of life. Full guarantee that debt distress will never occur is illusory and a high level of protection is bound to be very costly.

5.2.5 Possible Implementation Suggestions

Debt Sustainability Assessment is a complex process and a methodical implementation process is a necessity for successful results. The following guidelines could be useful:

Use Multiple Approaches Simultaneously

DSA rests on the debt accumulation process, which is nothing more than an accounting identity: $b_t - b_{t-1} = (r - g)\, b_{t-1} - primary\ balance_t$. At the operational level, one approach is to make assumption about the evolution of the primary balance, interest rate *r* and growth rate *g* in order to track down the debt path. This is the IMF's DSA approach.

The other approach is to ask what should happen to the primary balance to achieve a desirable debt path, given assumptions about the evolution of the interest rate *r* and growth rate *g*. This is the debt-stabilizing primary account approach. How to choose which approach is more appropriate?

Parameter Settings

A baseline projection, such as carried out by the IMF, shows how the debt accumulation unfolds on the basis of the currently foreseen primary balance, exchange, interest and growth rates. Associated to this projection, it is straightforward to compute the primary balance that would stabilize the debt under current conditions, as well as the primary balance required to lower the debt to GDP ratio when the current level is perceived excessive or when the authorities find it uncomfortable.

The baseline should not mean to be a forecast, only a statement of where current conditions lead to. Currently the IMF provides two baselines: one that is based on Staff forecasts and one that is based on historical trends. None of them is adequate. Staff forecasts introduce a degree of arbitrariness.

Producing a baseline on the basis of these forecasts has the merit of consistency, but this comes at the cost of a self-inflicted lack of realism. In addition, the baseline

should extend over a longer horizon (see below), which goes beyond the ability to make forecasts.

Historical trends have the advantage over current values of providing some stability, but this stability is illusory. Trend is adequate for GDP growth, which tends to fluctuate around a reasonably stable level, with good years making up for bad years; this is the only historical trend that should be used.

The other variables, the exchange and interest rates and the primary balance are potentially volatile and, partly at least, controlled by the authorities. Exploring the debt implication of the current settings is more informative than relying on historical averages that are often outdated.

The horizon should be long, say ten years. Debt corrections are best carried out slowly, with small changes in the primary account maintained over a long period. Debt corrections are inherently costly, the costlier the sharper they are. The same effect, if sustained, can be achieved at a much lower cost if it is spread on many years.

Policy Implications

In policy discussions, many questions can be asked and easily answered. It is straightforward to produce charts showing the mechanical effects on debt and the stabilizing primary account of changes in the interest or growth rates, whether they are permanent or temporary. It is important to keep in mind that such effects are purely mechanical, because they ignore the linkages among the variables that drive the debt accumulation process. For example, changes in the primary current account may require acting on the exchange rate, which in turns will not only affect the debt-GDP ratio but may also imply different interest rate levels.

Institutions Matter

Credibility is an essential component of DSA, yet it is largely hidden. Credibility affects the exchange and interest rate and it can trigger virtuous or vicious circles. The CPIA is one way of recognizing the importance of credibility, but it takes institutions as given.

Policy making is not just about setting macroeconomic variables; it should give a prominent role to shaping policy-making institutions. A number of countries have taken steps to improve their policy-making institutions in the area of fiscal policy, with much success so far. Brazil and Chile, for instance, have adopted formal procedures that bind policy actions within a framework that put debt sustainability at the forefront. Most East Asian countries have informally done so, relying on norms instead of legal arrangements. Mechanical DSA, implicitly take institutions as given, while CPIA does so explicitly. It would seem important to downplay the mechanical part of DSA and bring up forcefully the contributions that adequate institutions can make to avoiding debt distress.

5.3 Policy Makers' implications

History is replete with examples of fiscal irresponsibility in democratically ruled countries, with informed legislative scrutiny, voter sensibilities and mature markets. Carefree fiscal mismanagement created the crisis in New York City and State in the 1970s, The Failures in Brazil in 70s, the bankruptcy of Belgium and Victoria in Australia in 80s and many more. These experiences have compelled countries to recognize that the financial decisions that impact the future – borrowing, asset

creation and arrangements like guarantees which create contingent liabilities – should be guided by relevant medium-term and long term objectives such as mitigation and avoidance of excessive financial risk, sustenance of long term equity and market discipline etc. Countries have also recognized that fiscal discipline is a critical pre-condition for financial and monetary stability and a safeguard against external vulnerabilities and have designed legislation to formulate fiscal rules as an institutional mechanism to enforce prudent fiscal policy.

Prudent Fiscal Management is about making fiscal decisions that address long term interests over immediate short-term gains. It encompasses different mechanisms like expenditure limits, balanced budget requirements, targets for reduction/elimination of debt, debt ceilings, debt amortization rules and net-worth targets The failure of ruling class all over to agree upon a single or a complementary set of mechanisms is a key problem and limitation staring at fiscal responsibility legislation advocates.

Legislation cannot compel fiscal responsibility as evidence has shown us from the US, Australia and the Europe. Legislation can encourage and sustain fiscal responsibility and policy makers could work within political and governance frameworks.

Most constraints could be minimized with legislation that

- defines fiscal targets -
  - which are clearly and unambiguously specified;
  - ready to be validated by outside of Government analysts;

- give teeth to fiscal policy without trading off with other effective and prudent policy elsewhere in the governance framework.

Dealing with uncertainty arising out of fiscal responsibility policy is the single most important step in successful policy execution. Though this is extremely tough as evidence has shown us globally, policy makers could

- anticipate and mitigate shocks to public – trading and financial enterprise
- Mitigate cuts to needed entitlement and social sector.
- Mitigate volatility in valuation of debt due to changes in interest rates and FX rates.
- Appreciate the linkages among the variables that drive the debt accumulation process. For example, changes in the primary current account may require acting on the exchange rate, which in turns will not only affect the debt-GDP ratio but may also imply different interest rate levels.

Performance Measurement is a critical challenge that hinders successful implementation of Fiscal Responsibility Legislation and has to be dealt with by policy makers very effectively. Evidence has shown us that it is impossible to come up with a set of accurate and precise accounting measures that capture the fiscal targets and that are readily verifiable, because, the accounting measures are by nature imprecise and ambiguous, and their usefulness is compromised by the availability of substitute transactions that that achieve almost the same effect as the 'regulated' transactions while falling out of scope of fiscal responsibility legislation. The complexity of micro-decisions and transactions in the fiscal domain lends to multiple micro-level transactions whose classification and aggregation into accounting measures that describe the targets and the fiscal rules ensures that external monitoring is not straight forward.

Given all the inherent opportunity to circumvent the fiscal responsibility legislation by reckless and opportunistic governments, one could explore the option of legal enforcement through sanctions. Legal enforcement could be achieved through literal interpretation of the legislation or an interpretive approach to provide effective execution of the spirit of the law. Both approaches present structural pitfalls – literal interpretation results in damaging inflexibility and the inability to deal with even the simplest of avoidance strategies as bone out by the US experience, where narrow interpretations by US courts negated the usefulness of debt limitations while driving up the use of substitute debt transactions which were beyond the purview of effective monitoring and measurement of debt legislation; and courts interpreting the spirit of fiscal responsibility legislation ended up using their discretionary power and prejudices. The legal pitfalls arise out of constraints in legislation, uncertainty arising out of fiscal effectiveness policy implementation and ineffective measurement of legislation implementation. Additionally, legal enforcement clauses included in the legislation would lull constituents and electorate into a false sense of security and abuse by crafty politicians.

It is impossible to compel fiscal-prudent behavior through legislation as there are too many potential evasion strategies available to government and too many disastrous results waiting to happen as outcomes of those evasive actions. Legislation could however promote fiscal transparency and independent analysis and measurement of fiscal policy leading to fiscal prudence ultimately.

5.3 Effectiveness of FRBM Act 2003 in India based on Data

Based on the leading metrics mandated by legislature to assess the effectiveness of FRBM Act 2003, the following table 5.2 shows the mild effectiveness of the act in slowing deficits and encouraging fiscal responsibility at the Union Government.

The key indicators, as analyzed, are

i. Debt as a percent of GDP – The metric shows a decreasing trend from 2004-2005, since the FRBM Act 2003 was passed with a 13 percent decrease (estimated) in 2009-2010.
ii. Fiscal deficit as a percent of GDP – decreasing trend 2004-2005, since the FRBM Act 2003 was passed to 63 percent decrease in 2007-2008, the decrease amounting to about 63 percent
iii. Fiscal deficit as a percent of total revenue receipts - decreasing trend 2004-2005, since the FRBM Act 2003 was passed with a 43 percent decrease (estimated) in 2007-2008, the decrease amounting to about 43 percent
iv. Interest payments as a percent of GDP - decreasing trend 2004-2005, since the FRBM Act 2003 was passed with a 16 percent decrease (estimated) in 2007-2008, the decrease amounting to about 16 percent
v. Interest payments as a percent of total revenue receipts - decreasing trend 2004-2005, since the FRBM Act 2003 was passed with a 31 percent decrease (estimated) in 2007-2008, the decrease amounting to about 31 percent

Table-5.2
DEBT SUSTAINABILITY INDICATORS

Years	Debt	Fiscal Deficit (FD)	Interest Payments (IP)	Total Revenue Receipts (TRR)	GDP	Debt as % of GDP	FD as % of GDP	FD as % of TRR	IP as % of GDP	IP as % of TRR
1	2	3	4	5	6	7	8	9	10	11
1989-90	268192	35632	17757	52296	442134	60.66	8.06	68.14	4.02	33.95
1990-91	314558	44632	21498	54954	515032	61.08	8.67	81.22	4.17	39.12
1991-92	354662	36325	26596	66031	594168	59.69	6.11	55.01	4.48	40.28
1992-93	401923	40173	31075	74128	681517	58.97	5.89	54.19	4.56	41.92
1993-94	477968	60257	36741	75453	792150	60.34	7.61	79.86	4.64	48.69
1994-95	538611	57703	44060	91083	925239	58.21	6.24	63.35	4.76	48.37
1995-96	606232	60243	50045	110130	1083289	55.96	5.56	54.7	4.62	45.44
1996-97	675676	66733	59478	126279	1260710	53.59	5.29	52.85	4.72	47.1
1997-98	778294	88937	65637	133886	1401934	55.52	6.34	66.43	4.68	49.02
1998-99	891806	113348	77882	149485	1616082	55.18	7.01	75.83	4.82	52.1
1999-00	1021029	104716	90249	181482	1786526	57.15	5.86	57.7	5.05	49.73
2000-01	1168541	118816	99314	192605	1925016	60.7	6.17	61.69	5.16	51.56
2001-02	1366409	140955	107460	201306	2097726	65.14	6.72	70.02	5.12	53.38
2002-03	1559201	145072	117804	230834	2261415	68.95	6.42	62.85	5.21	51.03
2003-04	1736678	123273	124088	263813	2538170	68.42	4.86	46.73	4.89	47.04
2004-05	1994421	125794	126934	305991	2877701	69.31	4.37	41.11	4.41	41.48
2005-06	2260145	146435	132630	347077	3282386	68.86	4.46	42.19	4.04	38.21
2006-07	2538596	142573	150272	434387	3779384	67.17	3.77	32.82	3.98	34.59
2007-08	2897037	126912	171030	541864	4540987	63.8	2.79	23.42	3.77	31.56
2008-09 (RE)	3062912	326515	192694	562173	5228650	58.58	6.24	58.08	3.69	34.28
2009-10 (BE)	3463908	400996	225511	614497	5791268	59.81	6.92	65.26	3.89	36.7

Note: Figures in column 2-6 are in rupee crores
Source: Government of India Budget Documents of various years and CSO

5.4.1 Assessment at Mid-Year versus FRBM Benchmarks

Under Rule 7 of the FRBM Rules, 2004, Government is required to take appropriate corrective measures in case the outcome of the second quarter review shows that:

I. The total amount of non-debt receipts are less than 40 per cent of budget estimates for that year; or

II. The fiscal deficit is higher than 45 per cent of the budget estimates for that year; or

III. The revenue deficit is higher than 45 per cent of the budget estimates for that year.

The performance in the first half of the fiscal year 2010-11 meets all (see table 5.3) the targets in respect of the benchmark of non-debt receipts, fiscal deficit and revenue deficit. This is the first time after the implementation of FRBM Act, 2003 and FRBM Rules, 2004 that outcome of the Q2 in respect of the above mentioned targets are within the prescribed limits.

Table-5.3
Outcome versus Mid-Year Benchmarks under FRBM Rules

Variable	Performance benchmarks under FRBM Rules	April - September			
		2010	2009	2008	2007
Total Non-Debt Receipts	Not less than 40 per cent	55.6	40.5	39.9	44.7
Fiscal Deficit	Not more than 45 per cent	34.9	49.3	77	53.8
Revenue Deficit	Not more than 45 per cent	27.1	58.4	141.9	85.5

Source: Government of India, Budget Documents of various years and CSO

5.4.2 Mid Year Report of the Govt. of India, August 2011,

The following highlights from the mid-year report are worthy of our attention:

- Fiscal performance during the first half of 2010-11 has been in line with the budget estimates presented in February 2010. The uncertainties prevailing in the global economy at that point of time was a risk factor, while government embarked on the fiscal consolidation path. Better than estimated performance during the first half has reinforced the belief in the strategy adopted for fiscal consolidation with calibrated exit from expansionary measures.

- Based on the latest trends in receipts and expenditure, government has tweaked the market borrowing program for the second half of 2010-11 and the overall market borrowings from dated securities have been reduced by Rs. 10,000 Crores from the estimated level of BE 2010-11. In a developing country like India, the need for further investment in physical and social infrastructure is immense. However, the provisions in Budget for the same have to factor in the availability of resources. It was in this context that allocations for expenditure in BE 2010-11 were made without exceeding the fiscal deficit target of 5.5 per cent of GDP. Initially, the Budget for 2010-11 had estimated the level of non-tax revenues on the lower side. With greater resource availability from this source, headroom for higher outlays on certain priority sectors was available and consequently the government has decided to increase allocation for certain sectors in the First Supplementary Demands for Grants which include rural infrastructure (Rs.7,000 crore for PMGSY); Implementation of Right to Education Act (Rs.4,000 crore); Plan Assistance to States (Rs.6,379 crore) etc. But this should not give the impression that the government has deviated from the committed path of fiscal consolidation. The government is fully committed to gradual reduction in fiscal deficit and accordingly fiscal deficit for 2010-11 will not exceed 5.5 per cent of GDP.

5.5 Evolution of Financial Policies in Light of FRBM Act 2003

Fiscal policies pursued by the Central government result in shifting of priorities and allocations to various sectors of the economy such as Health, Education, Welfare, Maintenance, Energy, Transport, etc. Rising fiscal deficits lead to curtailing of expenditure from critical heads such as social and infrastructure sectors so as to meet

high debt service costs (interest payments, debt repayments). This results in poor allocation of scarce resources leading to inefficiency in the economy, thereby affecting growth and development. Considering the important role that public debt could play in the country's economic development and the need for adopting measures for making the borrowing program successful, the Planning Commission stated in the First Five Year Plan Report that "Techniques of borrowing, in particular, have to be adopted so as to convey to the people the larger purpose for which the loans are being raised and to facilitate their participation in the development program or the largest possible scale."[8]

In India public debt was viewed as an important resource for the overall economic planning and was supposed to fulfill the objectives of planning, i.e., achievement of faster economic growth, maintaining stability of prices, financing the plan budgets and an efficient expansion of money and capital markets. In India public debt has not only supplied the sufficient resources needed for the successful implementation of Five Year Plans but also contributed to the growth of money and capital markets. Table 5.4 gives the funding of first eight Five Year Plans which clearly shows the manner of financing them.

While public debt has been very helpful in mobilizing resources for the creation of economic infrastructure in the form of irrigation works, hydroelectric projects, roads, railways, posts and telegraphs, shipping and air transport, the resultant steep increase in public indebtedness has led to several fiscal problems in India. Though public borrowing is an easy way to finance economic development, it cannot be used to an unlimited extent because debt creates increasing expenditure obligations for the

[8] *Planning Commission, Government of India, Report of First Five Year Plan, p. 55.*

government both in terms of payment of interest charges and repayment of the principal and these obligations have generally to be met from current revenues or from additional/fresh borrowings leading to further indebtedness.

Table-5.4
Financing Pattern of the First Eight Five Year Plans

S. No.	Particulars	First Plan	Second Plan	Third Plan	Fourth Plan	Fifth Plan	Sixth Plan	Seventh Plan	Eight Plan*
1	Mainly through Own Resources	752	1230	2908	5475	20443	40673	42847	91886
		(38.3)	*(26.3)*	*(33.9)*	*(33.9)*	*(52.0)*	*(36.7)*	*(18.9)*	*(23.9)*
2	Domestic Borrowings	687	1439	2133	6538	11672	45935	124538	207178
		(35.0)	*(30.8)*	*(24.6)*	*(40.4)*	*(29.6)*	*(41.4)*	*(54.9)*	*(53.9)*
3	Deficit Financing	333	954	1133	2060	1354	15684	38545	33037
		(16.9)	*(20.4)*	*(13.2)*	*(12.7)*	*(3.4)*	*(14.1)*	*(17.0)*	*(8.5)*
4	External Assistance	188	1049	2423	2087	5834	8529	20708	19234
		(9.5)	*(22.4)*	*(28.2)*	*(12.9)*	*(14.8)*	*(7.7)*	*(9.1)*	*(5.0)*
5	Total Borrowings (2+4)	875	2488	4536	8625	17506	54464	145246	226412
		(44.6)	*(53.2)*	*(52.8)*	*(53.3)*	*(44.5)*	*(49.1)*	*(64.0)*	*(58.9)*
6	Total Resources (4+5)	1960	4672	8577	16160	39303	110821	226638	384272

** Based on 1991-92 prices*
Source: *Compiled and computed from RBI, Reports on currency and Finance and Planning Commission, Reports of Planning Commission*.

Trends in Government Expenditure

Total Expenditure of the Central Government fell from 17.11 per cent of GDP in 2003-04 to 14.13 per cent of GDP in 2006-07, mainly on account of reduction in capital expenditure as it declined from 3.96 per cent of GDP in 2003-04 to 1.67 per cent of GDP in 2006-07. However, in the recent years Central Government expenditure increased considerably, as it registered 16.93 per cent of GDP in 2008-09. Centre's Revenue Expenditure mainly consists of interest payments, defense, pay and

allowances, pensions and subsidies which account for 65 per cent of the total expenditure. As per the Thirteenth Finance Commission (TFC) Report; "Expenditure on pay and allowances of Central government staff excluding defense personnel, after moderating from 1.21 per cent of GDP in 2003-04 to 0.97 per cent of GDP in 2007-08, jumped to 1.33 per cent of GDP in 2008-09 and is estimated to go up even further to 1.50 per cent in 2009-10, the highest since 2000-01."

Debt would become unsustainable, if fiscal deficits follow a course that leads to a self-perpetuating rise in the debt-GDP ratio, which affects negatively the growth rate and positively the interest rate, such that the existing levels of primary government expenditures cannot be sustained, given the configuration of growth and interest rates. A sustainable debt-deficit combination would be stable in terms of debt- GDP ratio and fiscal-deficit GDP ratio consistent with the permissible levels of primary expenditures.

5.6 Conclusion

Debt Management has gained significant prominence in the wake of failed policies of "spend and grow" and surging deficits in many countries globally. Fiscal prudence was inculcated in policies and financial activity by a good number of countries which were facing external and/or internal debt pressures and constituents' anger.

In light of rising deficits in India after the ushering of reforms, FRBM Act 2003 was enacted to control fiscal and revenue deficits and eliminate them in a time-bound manner. In Practice, the deficits were NOT eliminated as mandated by the FRBM Act 2003, but their runaway growth was reined in. Additionally, the External Ratings

Organizations cast a benevolent rating in the wake of enactment and implementation of FRBM Act 2003. Runaway growth of deficits was also mitigated to a certain level.

Though Debt Sustainability Assessment is a critical component of Fiscal Sustainability, it is a significantly difficult exercise in practice to assess debt sustainability. Many methodologies and frameworks were formulated, but an optimal combination of multiple methodologies accompanied with a right policy framework would be the key to assess manage the effect of debt on a country.

However fleeting, the financial policies of Govt. of India have been more effective since the implementation of the FRBM Act 2003. The trends in revenue, taxes and expenditure have been on the prescribed path of fiscal and revenue prudence even though the pace of travel could be excruciatingly slow.

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Chapter-CHAPTER - VI

SUMMARY, FINDINGS AND POLICY IMPLICATIONS

Growing public debt path presents major risks and challenges for both fiscal and monetary policy. When a country starts from an already high level of public debt, the probability that any macroeconomic shock will trigger unstable debt dynamics would be higher. This risk is increased when public debt is already on a steep upward trajectory, as it is now in several countries, such as Ireland, Italy, Greece, US, Portugal and Spain. Another major risk associated with high levels of public debt comes from potentially lower long-term growth. A higher level of public debt implies that a larger share of society's resources is permanently being spent servicing the debt. This means that a government intent on maintaining a given level of public services and transfers must raise taxes as debt increases. Taxes distort resource allocation, and can lead to lower levels of growth.

The distortionary impact of taxes is normally further compounded by the crowding-out of productive private capital. In a closed economy, a higher level of public debt will eventually absorb a larger share of national wealth, pushing up real interest rates and causing an offsetting fall in the stock of private capital. This not only lowers the level of output but also results in reduced rate of capital accumulation and thus can lead to a persistent slowdown in the rate of economic growth. In an open economy, international financial markets can moderate these effects so long as foreign investors remain confident in a country's ability to repay. But, even when private capital is not crowded out, larger borrowing from abroad means that domestic income is reduced by interest paid to foreigners, increasing the gap between GDP and GNP.

More importantly, the existence of a higher level of public debt is likely to reduce both the size and the effectiveness of any future fiscal response to an adverse shock. Since fiscal policy cannot play its stabilizing role, a more indebted economy will be more vulnerable to shocks. This was evident during the latest global financial crisis. Countries saddled with very high levels of public debt did not expand fiscal policy as much as other countries. And, although these countries benefited somewhat from the effects of foreign fiscal expansion, a larger domestic fiscal stimulus could have helped to reduce the severity of the recession actually experienced.

Traditionally, debt management policy was not considered a separate macroeconomic policy. It was always viewed as a part of either fiscal or monetary policies, Of late**,** there is a growing consensus among economists and practitioners that debt management should be treated as a separate macroeconomic policy with its own policy objectives and assignment of a separate policy instrument.

One of the key policy implications of debt management is that the initial debt to GDP ratio should be lower, or the desired primary surplus should be higher. The higher the risk premium charged and/or higher the vulnerability arising from poor debt structures, given greater vulnerability of emerging market economies.

In the Indian context, there are certain important gaps in analysis of debt sustainability. These include: lack of sustainability assessment of public debt in different scenarios, lack of a comprehensive debt sustainability assessment of debt held by the Government of India, lack of studies on assessment of sustainability of

debt in the light of FRBM Act 2003. There are also no empirical studies which have attempted to test the sustainability of debt.

The key focus of the present study is to partially fill the gaps identified above. Accordingly, the study attempts to examine the macro economic implications of growing Debt/GDP ratio and Fiscal Deficit (FD) of both central government and state government on government revenues and expenditure, and the manner in which the long term fiscal policy, especially the rule based fiscal monitoring through Fiscal Responsibility and Budget Management Act (FRBM) Act 2003 is executed / implemented in trying to bring in stability to the fiscal profile of the nation. The study also focuses on the role of medium term fiscal strategy in controlling the growing debt and fiscal deficits.

Against the backdrop of introduction of FRBM in 2003 and the subsequent amendments and changes brought out by the Union government, the study attempts a deeper analysis of fiscal effects of expenditure and revenue. Further, the sequential changes brought out by Government of India in its fiscal policy after the implementation of FRBM Act 2003 are also studied with respect to their impact on the public debt and other key macroeconomic parameters such as GDP growth and interest rates.

Additionally, the study has also examined the level of indebtedness of the Government of India from 1990-91 till the enactment of FRBM Act in 2003 and to study its impact on fiscal sustainability after 2003 until 2010, the current level of economic growth and inflation. Also, there is a need to study focuses specifically on the implementation of FRBM Act 2003 to reduce public debt in India.

The analysis pertains to the period 1990-91 to 2002-03 which is referred to as post liberalization phase, and that of post FRBM phase starting from 2003-04 to 2009-10. The study also analyses various fiscal policy changes and other economic reform measures during both the phases and their consequent effects on fiscal and debt sustainability during those periods.

The statistical tools utilized for carrying out the empirical analysis of this study include: ratio analysis, trend analysis, regressions, recursive residual stability tests, unit roots and co-integration analysis. The datasets utilized for this study include the historical economic data on taxes, expenditure, revenue and public and external debt published by the Ministry of Finance, Government of India and the Reserve bank of India**.**

Major Findings:

The study considers the following debt convergent possibilities:

i. A country that runs higher primary budget surplus can have a higher initial debt stock and still manage to maintain long-term sustainability;
ii. A country with higher real growth rate can afford to have a lower budget surplus and still obtain sustainability; and
iii. A country that runs persistent primary budget deficits worsens its debt sustainability position.

The above debt convergence analysis is applied to public debt in India to ascertain the trend and level of debt position during the period 1989-90 to 2009-10 and it is found that possibility (ii) mentioned above is applicable to India as the average growth rate

of India during the past 10 years is around 8 per cent. In case of India, revenue deficit declined considerably during the past five years and resulted in ease of pressure on government expenditures.

This study had done an empirical analysis based on the modified Quintos model taking into account data on fiscal parameters (debt/GDP ratio, revenues, expenditure, interest payments, etc.) from the year 1990-91 to 2009-10 and tried to find out whether the variables revenue and expenditure are co-integrated or not. It was found to be co-integrated and also it is identified that debt is moderately sustainable in Indian case. Further, it is clearly established through the ratio as well as trend analysis that fiscal consolidation did take place consequent to the promulgation of FRBM Act, 2003. However, there were slippages during the past two years owing to fiscal stimulus measures initiated by the Government of India as a consequence of global financial crisis.

Some of this study's conclusions are corroborated by the findings of Thirteenth Finance Commission (TFC) in their report which outlined the main trends in the Centre's findings in recent years. The TFC's analysis of these trends is given below:

i) The fiscal correction path, following the enactment of FRBM Act was more or less on track till 2007-08, after a pause in 2005-06. A number of developments, particularly the slowdown of the economy and its adverse impact on revenue growth, increasing commodity prices, anti-recessionary measures, farm loan waiver and implementation of the recommendations of the Sixth CPC, have resulted in a worsening, going beyond the reversal of the fiscal correction achieved till 2007-08.

ii) Despite deterioration in all fiscal indicators in 2008-09 and 2009-10, the debt-GDP ratio remained stable, or even declined marginally. This was because of the growth of nominal GDP remaining higher than the average nominal interest rate.

iii) Though the tax-GDP ratio has come down in 2008-09, it is still higher than the level reached in 2004-05. The fall in the aggregate tax-GDP ratio in 2008-09 would have been sharper but for buoyant revenues from corporation tax and service tax. There has been a continuous increase in the tax-GDP ratios of these taxes till 2008-09. While the tax-GDP ratio in respect of corporation tax is expected to be maintained even in 2009-10, that of service tax is expected to witness a marginal fall. With buoyant revenues from corporation tax, revenue from direct taxes has, for the first time, overtaken that from indirect taxes in 2007-08.

iv) Total expenditure of the Centre relative to GDP witnessed a significant contraction between 2003-04 and 2006-07, after which it started rising again, despite moderation in capital expenditure. Rising revenue expenditure, particularly in 2008-09 and 2009-10, contributed to growth in total expenditure. Within revenue expenditure there was sharp increase in expenditure on pay and allowances, as well as subsidies.

v) Resumption of the path of fiscal correction is crucial to achieving a sustainable fiscal situation at the Centre. Though softening of international oil prices has provided some relief, reverting to the high growth path and a strategy to exit from the expansionary fiscal stance put in place as a countercyclical measure will hold the key to fiscal correction. In recent years, off-budget liabilities of the Centre have assumed alarming proportions. In 2008-09, off-budget bonds

issued to oil marketing and fertilizer companies amounted to Rs. 95,942 crore or 1.80 per cent of GDP.

Implications:

After analyzing the nature of existing debt stock and suggesting a debt reduction roadmap for the Government over the medium term, it is necessary to look at issues related to debt sustainability debate around the globe. While assessing the health of economy, public debt is always an important parameter in the matrix of economic theory. The discussions on the optimum level of public debt in any economy, whether developed or developing, have generated large interests among various stakeholder groups and individuals.

Year 2008 represents a watershed in the policy design for public finance management. Economies across the globe have undertaken massive fiscal out from the adverse impact of global economic meltdown relatively fast, but it cannot be construed that it was not affected during the crisis period. During 2008-09 and 2009-10, various fiscal and monetary measures were undertaken to insulate Indian economy from the adverse impact of global expansionary measures to mitigate the adverse impact of global economic slowdown. While this shift in policy had helped global economy to move towards recovery, the future outlook for the global economic growth is still not the same as it was before the advent of the financial crisis in 2007.

While implementing the expansionary fiscal policy during 2008 and 2009, most of the countries have contracted very high level of debt in order to provide stimuli to protect

their economies and to finance higher level of public expenditure with lower revenues. This in turn has resulted in significant increase in the level of public debt and liabilities as percent of GDP for most of the countries. This has made the debate on sustainable public debt level all the more relevant in the present context and this issue has become the fulcrum of discussion for designing future fiscal policy.

During the period of financial crisis, the decoupling theory has been called into question. Emerging market economies felt the impact of this crisis and the degree of adverse effect on a particular country was the function of existing policies in that country. Indian economy has come out from the adverse impact of global economic meltdown relatively fast, but it cannot be construed that it was not affected during the crisis period.

During 2008-09 and 2009-10, various fiscal and monetary measures were undertaken to insulate Indian economy from the adverse impact of global slowdown. These measures resulted in the reversal of fiscal consolidation trend witnessed during the period 2004-05 to 2007-08. While Central Government debt as percentage of GDP improved during this period from 53.4 per cent to 46.2 per cent, the same has deteriorated to 50.5 per cent of GDP at the end of 2009-10. Similarly, the consolidated debt of general government improved from 79.3 percent of GDP in 2004-05 to 68.7 percent in 2007-08 and subsequently worsened to 73 percent in 2009-10. This reversal in trend has generated worries about the sustainability of government debt in India. At the same time, the developments in Euro Zone have further intensified the debate on the sustainability issues.

The present crisis in Euro Zone has brought into focus that sustainability analysis in classical terms may not be the sole tool to gauge the fiscal health of the country. Some of the important parameters for determining the stability and vulnerability level of public debt for example could be maturity profile, composition, carrying cost, external or domestic investor base along with savings rate, potential and realized tax to GDP ratio, etc.

In the case of India, the gradually declining level of general government debt estimated over the medium term does answer the sustainability issue positively. At the same time the following characteristics of existing debt stock and economic parameters put India in a distinct category when compared to the developed as well as other emerging market economies.

This study also treats the clear disconnect between the theoretical work that has been done on fiscal sustainability and assessment of fiscal sustainability in practice. In particular, country work undertaken by the IMF and others generally pays less attention to the PVBC, focusing instead on indicators of sustainability that are not grounded in theory. Our study has reinforced the limitations of PVBC approach - most notably some fiscal policies that in no obvious sense appear unsustainable can satisfy the PVBC while some other fiscal policies appear sustainable but do not satisfy the PVBC.

The measures of sustainability have considerable intuitive appeal though the measures are highly inconclusive and arbitrary. One advantage of the IMF approach to assessing fiscal sustainability in the context of a broader medium-term

macroeconomic scenario is that debt targets that are not sufficiently ambitious will usually be revealed by weakness in one or more key macroeconomic measures.

Finally, the link between fiscal and external sustainability warrants further consideration, with a view to developing an integrated analytical framework that combines both aspects of sustainability and from which fully consistent indicators of fiscal and external sustainability can be derived.

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