Chapter 2

Accumulation of Domestic Public Debt: Alternative Views

Accumulation of domestic debt, its macroeconomic implications and the incidence of debt burden have been debated in fiscal economics. Early literature on the subject considered accretion of domestic debt as transitory in nature arising out of war and other national emergencies. However, over time, the role of and views on public debt have changed. In recent years, the large-scale accumulation of domestic debt in both developed and developing countries only confirms that it has emerged as one of the principal instruments of financing public expenditure programmes. The literature on public debt also substantially advanced and addressed wide-ranging issues which included the theoretical analysis of the conditions under which debt finances 'matters' for the real economy and / or the price level; the importance of domestic versus external debt and issues in the measurement of deficits. Besides there is a large body of empirical literature analyses the effects of deficits and debt on real economic activity and sustainability of large deficits.

In the present chapter, we shall undertake a critical review of public debt theories. The section 2.1 analyses the role of debt in financing government expenditure programmes. The issues related to debt burden and intergenerational equity is discussed in section 2.1.

---

1 Rising debt and deficits are the phenomenon noted in both developed and developing countries during the 1980s. Arrow and Boskin (1988, p. xiii) noted that 'rising government deficits and public debt in both advanced and developing economies are one of the dramatic structural changes in the world economy in the 1980s.' Dornbusch and Draghi (1990, p. 1) also noted that in the 1980s US public debt has grown rapidly and in Europe except Luxembourg and the UK, other Countries had the higher debt ratios at the end of the decade than at the beginning.

2 The major criticisms against summary indicators of deficits are that conventionally measured government deficits are not sufficiently broadly defined and they are meaningless because they do not reflect the changes in the distribution of wealth among generations. As for the coverage, ideally, any measurement of government deficit should consider the deficit of the public sector as a whole instead of sectoral deficit of different public sector entities. But problem lies in covering the public sector as a whole for a comprehensive measurement of public sector deficit because there are exhaustive lists of government entities and there are intra public sector transactions for which data is not readily available.

The point to be noted here is that even the comprehensive measure of public sector borrowing requirement (PSBR) is not capable of capturing the macroeconomic implications of fiscal policy. With a given level of PSBR, the impact of deficit may differ depending on the composition of variety of revenue expenditure o the government. Thus, purpose specific measures of deficits assume importance. The major purpose specific measures of deficits are current deficit, domestic deficit and foreign deficit, structural and cyclical deficit, primary deficit, aggregate demand deficit and operational deficit. (For a detailed discussion on the measurement of deficits refer, Boskin (1982), Boskin (1988), Tanzi and Blejer (1988), Blejer and Cheasty (1991).)
2.2. The section 2.3 examines the theoretical issues related to the debt sustainability. The constraints to the conduct of monetary policy arising from growing debt are analysed in section 2.4. The section 2.5 discusses the constraints that fiscal policy may have in the face of rising debt burden. The section 2.6 summarises the major issues that emerged from the literature.

2.1 Financing Public expenditure Debt versus Taxes

A given public expenditure programme can be financed through taxes, borrowing or by money creation or through a combination of these three. The choice of the level of taxation and the tax structure, which comprises of the nature of taxes (direct tax, indirect tax), would depend on the nature of the economy and the degree of progression. The debt financing includes the characteristics of debt instruments, viz., interest bearing or non-interest bearing, maturity, degree of indexation, etc. The money financing can be considered as the residual mode of finance because the level of money financing largely depends on the private sector's capacity and willingness to absorb debt. If the private sector absorbs issuance of new debt fully, government does not have to resort to money financing. Also, the private sector's willingness to hold debt depends largely on the attractiveness of the debt instrument reflected in the interest rate, maturity structure etc. and credibility of the government reflected in the solvency of the exchequer.

Different financing modes of government expenditure have got their advantages and disadvantages. In a system of progressive taxation, tax financing of government expenditure redistributes income from rich to poor between the same generations at a point of time or between generations intertemporally. However, in the face of increasing government expenditure, taxes cannot be raised to a level which adversely affects the incentive to work and thereby growth. Debt financing assumes importance in this context.

The debt financing is criticised in a classical system on the ground that debt finance reduces private capital formation. Adam Smith (1910: p.47) and Ricardo (1951a: p.247; 1951b: pp. 187-9) argued that taxes reduce current consumption while internal

---

3 The choice between two alternative modes of financing, i.e., the taxes and borrowing goes back to the classical economists.
borrowing results in reduced private capital formation. Musgrave (1959, ch.23) provided a comprehensive discussion of the tax and debt financing in a classical system, where full employment is ensured and the price stability is maintained if the money supply is held constant. In such a system “the choice between tax and loan finance remains important because it determines the way in which the resource withdrawal from the private sector will be divided between consumption and capital formation” (Musgrave: 1959, p. 556). In other words, in a classical system, the choice between tax and loan financing does not alter the level of aggregate demand; it may affect the way in which output is divided between current consumption and capital formation in so far the equilibrium rate of interest changes.

The classical concern of the effect of choice between tax and debt financing on the private consumption-investment mix had hardly any significance in the Keynesian paradigm as in the Keynesian system full employment was not automatic. Keynesian regarded the choice between the two modes of financing as a matter of controlling the level of aggregate demand and employment. The argument is the so-called principle of functional finance enunciated by Learner (1943) and later on summarised by Modigliani (1961). Modigliani's exposition is the following:

Consider the full employment output $\bar{X}$. The share of government in full employment output is $G$. The output available for private sector is $\bar{P} = \bar{X} - G$. If it is assumed that the private sector's demand for output is a function of income and taxes, i.e.,

$P = P(X, T)$, with $\frac{\delta P}{\delta T} = 0$, then taxes are to be fixed at a level say $\bar{T}$, which satisfies the equation $\bar{P} = (\bar{X}, T)$. A higher level of taxes would generate unemployment and a lower level would generate inflation both evils, which it is the task of the government to avoid.

This functional finance doctrine is based on the assumption that monetary policy is ineffective as a means of controlling aggregate demand. However, once it is assumed that aggregate demand depends not only on the level of income and taxes but also on the monetary policy, then there will not be any unique level of taxation that is capable of producing full employment without inflation. The proportion in which a given level of government expenditure tax financed or debt financed may vary, while monetary policy is used as compensatory tool to keep aggregate private demand at its desired level.

Thompson (1967) using the assumption that all taxes, present and future are lumpsum in nature and are perfectly foreseen, and the market in present bond is perfectly
competitive strongly contests the widely held Classical and post-Keynesian view of short run macroeconomic effect of debt versus tax financing. According to Thompson it would be inappropriate to think that an increase in current aggregate consumption expenditure results from the increase in current aggregate disposable income from the current tax reduction involved in debt financing ... for it completely disregards the equal decrease in the aggregate wealth due to the increased future tax liabilities.

Bailey (1971, 1972) also made a similar argument. According to him 'if indeed households foresee their own and their heirs' future taxes, then given government expenditures have the same effect on private consumption whether they are financed by taxes or borrowing. The rate of money creation can be kept independent of this decision, and, in particular, the monetary growth that is consistent with a stable price level is unaffected by it. The equilibrium rate of interest is also unaffected, whether or not there is a real cash balance effect on consumption. These implications follow from the lack of tax effect on private consumption' (Bailey: 1972, p. 652). In other words, neither the consumption function nor the investment function is affected by the substitution of borrowing for taxation, the IS curve remains the same whether the government expenditures are tax or debt financed, so that the equilibrium remains undisturbed. This view of debt neutrality is dealt in greater detail when we discuss the Ricardian Equivalence Theorem later in this chapter.

2.2 Debt Burden and Intergenerational Equity

The modern justification of public debt emerged with development of theories arguing that there is no shifting of public debt burden to future generation. The idea of no burden put forward by Larner (1943), Hansan (1941), Pigou (1949) and others remained unchallenged till 1950s. However, Buchanan (1958) challenged the validity of Pigou’s thesis that public debt imposes no burden on future generation.

---

4 In fact, Keynesian revolution paved the way for changing the views on public debt from classical orthodoxy. To quote Harris (1947), "once the economists, in a realistic mood, allowed for unemployment, assumed elasticity in monetary supplies and argued that government expenditure could be productive, and need not necessarily be wasteful, the case for public borrowing is strengthened. Pigou (1949) argued that 'cost of any thing paid for out of loans fall on the future generation while the cost met out of taxes are born by the present generation; though 25 years ago this idea could claim respectable support it is now everywhere acknowledged to be fallacious....'"
Buchanan (1958) analysed two scenarios where in one case borrowing is used for financing wasteful project and in another case it is used for productive public expenditure. In these two alternative scenarios he had shown that debt burden gets shifted to future generation. In the first case 'the taxpayers in period t₀ does not sacrifice any thing since he had paid no tax for the wasteful project. The burden must set on the taxpayers on the future time periods and no one else. He must reduce his real income to transfer funds to the bondholder, and he has no productive asset in the form of public project to offset his genuine sacrifice. Thus, the tax payer in the future time periods, that is the future generation bear full primary burden of the public debt.' In the second case, i.e., 'if the debt is created for productive public expenditure, the benefits to future tax payer must of course be compared with the burden, so that, on balance, we may suffer a net benefit or a net burden. But a normal procedure is to separate the burden against the benefit, thus future tax payer is the only one to whom such burden may be attributed.'

Buchanan's thesis has been criticised by Bowen-Davis and Kopf (1960) (hereafter BDK). They defined burden in two ways: non-transferable and transferable. If the real burden of public borrowing is defined as the total amount of consumption given up at the point of time borrowed funds are spent, the cost of their public projects simply must be by the generation alive at the time the borrowing occurs. On the other hand they have argued 'if the real burden of debt to a generation is defined as the total consumption or private goods foregone during the life time of that generation as a consequence of public borrowing and attendant public spending, it may be argued that burden may be shifted to the future generation'.

According to (Vickrey: 1961, p.133) 'individuals pay no attention to their share in the liability represented by the public debt in determining how much of their income they will spend'. James Ferguson (1964a) argued that 'factors inherent in the institutions of public debt, which include uncertainty concerning future taxes and limited time horizons, cause people to treat, the government bonds as assets but to underestimate their liability as tax payers to pay additional taxes in future periods to service and retire the debt' (p. 220). This idea of 'public debt illusion' under which individuals do not pay any attention to their share in the liability represented by the public debt in determining how much their income they will spend was extensively investigated (see Buchanan: 1964, 1967, Ferguson: 1964a, Head: 1967, Shoup, 1969).
There are others like Johnson (1962) who asserted that 'the existence of government debt implies the levying of taxes to pay the interest on it, and in a world of reasonable certainty these taxes would be capitalised into liabilities equal in magnitude to the government debt' (p. 343). Mudell (1962) also came out with a similar line of argument while analysing the effect on the rate of interest changes in the government debt through open market operations.

If the debt financing of government burdens future generation, this can be a critique of borrowing (since it may be abused by burdening future generations with the cost of services which are enjoyed currently) and can also be an argument for borrowing (since it may be used to secure intergeneration equity by passing on part of the cost of capital outlays to the future) (Ihori: 1988). Following Ihori (1988), it can be argued that whether debt financing would be a burden for future generation or not would largely depend on the way the borrowed resources are being used.

However, Ihori (1996) mentioned that as fiscal regime differs across countries and changes over time, always there is an uncertainty regarding the fiscal policy approach of different regimes in the face of rising debt and deficits. If rising debt in the current period signals at future contraction of deficits, whether this contraction will be achieved through a cut in spending or through an explicit increase in tax rate is broadly unknown. In this context, Bertola and Drazen (1993) showed that if government spending follows upward trending stochastic process, which the public believes, may fall, then optimising consumption behaviour and simple budget constraint arithmetic imply a non-linear relationship between private consumption and government spending.

2.2.1 The Ricardian Equivalence

However, the debt neutrality argument of Ricardian Equivalence Theorem (RET), which is restated by Barro (1974), argued that a given public expenditure programme in whatever way it is financed would not have any real impact on the current generation as well as future generation. Rational individuals consider today's borrowing as tomorrow's taxes and accordingly they alter their intertemporal budget constraint. Barro (1974) had shown that 'debt-neutrality' could be obtained under three assumptions: (i) if the lending and borrowing terms of private agents are similar to that of government, (ii) if the private agents are able and willing to undo any government scheme to redistribute
spending power between generations, and (iii) all taxes and transfer payments are lumpsum, by which we mean that government’s basis of assessment of taxable capacity is independent of private agent’s decisions about production, labour supply, consumption or asset accumulation. Under these restrictive assumptions, any change in government financing (government savings or dissavings) is offset one-for one by the corresponding change in private saving.

However, the argument of debt-neutrality is contested and a large critical literature exists against the Ricardian Equivalence Theorem. A study by Kotlikoff, Samuelson and Johnson (1989) conducted an experiment to find out whether individuals who are placed in a controlled life cycle setting, are able to make coherent and consistent intertemporal consumption choices and to value future resources correctly. The study found that even in this setup with all relevant information in hand, individuals make significant and systematic errors in their consumption choices and a subset of the individuals either undervalue or overvalue their future resources. An obvious implication of an undervaluation of future relative to present is that a fiscal policy that changes the timing but not the present value of taxation will no longer be neutral.

According to Buiter (1985), change in public sector deficit in case of change in exhaustive public spending\(^5\) would definitely have real effects; the only exception would be where public consumption or investment is a perfect substitute of private consumption and investment. The argument of debt-neutrality is further criticised as it is based on extremely restrictive assumptions. According to Buiter, the first assumption of equal terms of borrowing for both private and government agents fail because credit rationing, liquidity constraints, large spreads between lending and borrowing rates of interest, and private borrowing rates well in excess of those enjoyed by the government are established empirical facts. The second assumption fails, as private decision horizons are finite and quite short. The third assumption fails because in practice taxes and subsidies are rarely lumpsum. Explicitly or implicitly, individuals can deduce the basis of the tax assessment and impute the relevant marginal tax rate to their decision on consumption, work and asset accumulation. Thus, the theoretical construct of 'debt-

---

\(^5\) Exhaustive public spending is defined as that part of the government expenditure on goods and services, which exhausts real resources. In other words, exhaustive public spending excludes transfer payments, which merely transfers purchasing power and can be regarded as negative taxes.
neutrality' appeared to be an inadequate tool of analysing the actual impact of public sector debt and deficit on the real economy and also across generations.


As RET generally does not hold good, the question remains how does debt burden affect intergenerational equity. According to Ihori (1988), the answer to the question of intergeneration equity depends on the definition of debt burden and he defined the debt burden as a decrease in utility level of future generations, which would not exist if the government debt were not issued, and instead taxes were collected. Based on this definition of debt burden, and estimating the private sector's consumption function based on the uncertain life time approach, the author found non-existence of 'debt neutrality' in Japanese economy and also found that public debt does possess some burden on the future generation.

Modigliani (1961) argued that each current generation 'burdens' the future generation by bequeathing them a smaller aggregate stock of capital. This happens because the author believed that a permanent increase in government debt would displace some amount of capital from private portfolio. By using the overlapping generation model, Diamond (1965) noted that current increase in debt decreased the long run utility level of the consumers. Gale (1973) using the consumption-loan model (a model without capital expenditure) showed that the long-run competitive equilibrium without government debt is stable, but long-run equilibrium with debt is unstable.
2.3 Debt Growth and Debt Sustainability

The classical view on debt finance was only with regard to the intergenerational equity (Musgrave: 1988). The issue of debt-finance should not be viewed in terms of intergenerational equity alone. The advancement of Keynesian idea has viewed debt finance as an instrument of fiscal policy, which can be varied contracyclically in order to reduce fluctuations in economic activity (Congdon: 1998).

Domar's formalisation of the relationship between debt burden and national income growth shifted the focus more on the use of debt and its consequent return instead of the worried concern of intergenerational equity. Domar (1944), argued that the burden of debt should not be judged by looking at the growing volume of debt. Rather, the focus of attention should be on the growth of public debt relative to national income. If national income is growing at a rate faster than public debt, then debt servicing should pose little problem because the additional tax burden required to be imposed to meet debt servicing need not be high. Domar also argued that the 'burden of debt', if it has any meaning, refers to the tax burden, which must be imposed to finance the service charges, and if only the required tax to meet interest charges is high, the question of sustainability of debt arises.

The proportion of national income required to be raised in taxation to service interest payment, according to Domar, can be worked out with the help of the following equation:

\[ t = \left( \frac{\alpha}{\rho} \right) \ast i \]

where 't' is the fraction of national income necessary to raise in taxation to service public debt, '\( \alpha \)' is the fraction of national income borrowed by the government, '\( \rho \)' is the rate of growth of national income and 'i' is the real rate of interest. The above equation "shows that the burden of debt is directly proportional to '\( \alpha \)' and 'i' and inversely to '\( \rho \)'. If the burden is to be light (with given '\( \alpha \)' and 'i') there must be a rapidly rising income. The problem of debt burden is a problem of an expanding national income".

Domar's emphasis was clearly on the relationship of current public borrowing or fiscal deficit, with the growth of income. Domar discusses a number of possible scenarios and
demonstrates how important it is for the burden of servicing public debt to remain within a reasonable limit and how this limit is set by the rate at which the economy grows. He shows that if the current rate of borrowing \(a\) increases without a proportional increase in the rate of economic growth \(r\), the ratio \((a/r)i\), and hence the burden of debt, \(t\) will increase. From Domar's equation, it can also be seen that if the current borrowing rate \(a\) is lower than income growth \(r\), then the required \(t\) will be lower than interest rate \(i\). If however the borrowing rate is higher than the rate of income growth, the opposite will be the case. Domar does not dilate much on the level of, or change in interest rate \(i\), except when he discusses the case when \(r\) is declining but \(a\) remains constant; in this case, for the burden of debt servicing \(t\), not to increase "the interest rate on bonds must be continuously reduced".

Recent literature (Spaventa: 1987, Masson: 1985) carry forward Domar's proposition and argued that for the sustainability of fiscal deficit, the real rate of growth of the economy must be higher than the real rate of interest. To quote Masson (1985):

'If the real rate of interest is above the real growth rate of the economy, then an expansionary fiscal policy at present, whether in the form of expenditure increases or tax reductions, must involve either contractionary fiscal policy at some time in the future or an increase in the seigniorage from money creation. Otherwise the increase in government debt will feed upon itself as the government borrows to finance the interest payments on debt it previously incurred, and debt eventually becomes excessively large relative to other macroeconomic variables'.

In fact, Domar's equation itself shows that given the rate of borrowing, the rate at which taxation has to be mobilised will be higher or lower depending on how much lower or higher the rate of interest is compared to the rate of income growth. The important point of agreement between Domar and recent developments in literature is that public borrowing is sustainable so long as the economy is growing robustly keeping the rate of interest lower than the rate of economic growth. Then, meeting interest obligations of the government should not impose excessive burden on the community, whatever the form in which the government chooses to mobilise revenue for the purpose.

Domar's proposition that growth rate is expected to be higher than the rate of interest or equal to rate of interest proved correct as developed economies achieved sustained
growth of 3 per cent or more, while throughout the world real interest rates were barely positive, and rarely exceeded 2 per cent till the oil shock of 1970s (Eltis: 1998).

In developed countries, oil shock slumped the rate of growth to around 2 per cent, recovery of which required public expenditure to grow at a higher rate despite the slowing down of their tax revenues. This has contributed to the increase in the deficit. The gross public debt of OECD countries increased from 40 per cent of their combined national income in 1979 to 50 per cent in 1983, 60 per cent in 1991, more than 70 per cent in 1995 and 74 per cent in 1996 [Eltis: 1998, OECD Economic Outlook, Annex Table 34]. In these 17 years, in which OECD debt almost doubled as a ratio of the national income, the rate of growth of real GDP fell to 2.4 per cent from 3.7 per cent in 1970-79 and real interest rate rose to 4 per cent or more. The rise in the real interest rates was partly because of the sharp increase in the government borrowing and partly because of the universal trend towards deregulation of financial markets through which investible resources were allocated by price rather than through administrative decisions (Eltis: 1998). With the decline in growth rate and the increase in the real interest rate due to oil price shock and financial deregulation, the Domar formula no longer remained to be the adequate tool to explain the problem of debt and debt burden.

The implications of such a scenario where debt grows explosively with the violation of the sustainability condition (where real rate of interest exceeding the rate of growth of the national income) are of two kinds depending on the composition of debt. Firstly, if the share of external debt in total debt is too high in that case countries have to reschedule their debt and if they still fail to contain their escalating deficit, it might lead to default. Secondly, if the share of internal debt is too high, government may resort to large-scale monetisation leading to hyperinflation.

2.4 Debt Growth, Debt Burden and Monetisation

The possibility of eventual monetisation of deficit was formalised by Sargent and Wallace (1981) as 'unpleasant monetarist arithmetic' where they apprehended that public sector deficit would eventually be monetised and thus would lead to inflation (See also Buiter: 1982 and Sargent: 1983). Even with a restrictive monetary policy, inflationary
expectation may remain high because the public believes that even an independent central bank may ultimately give in and create enough money in order to prevent the government from going bust (Winckler et al: 1998)\(^6\).

In case of developed countries, the rationale behind the choice of instruments to control the nexus of debt-deficit-inflation are different from that of developing countries. For example, in Britain, since the Second World War, income velocity of money has increased from 5.00 in 1946 to 20.24 in 1983 (Buiter: 1985). The estimate of Buiter revealed that with a constant velocity of 20 and rate of interest two percentage points higher than the trend growth rate of output, an extra ten percentage points increase in debt-output ratio would require a four percent increase in the money growth and thus in the long run inflation. On the other hand, financing of increased debt service at an unchanged rate of inflation by raising taxes would require an increase in taxes (or cut in transfers) equal to 0.2 percent of GNP only. For a developed economy like UK, with developed financial system, and reasonably broad tax base it is quite unlikely to choose money financing to tax financing.

However, in the case of developing countries, financial system is not well developed which is reflected among other things, lower money base velocity. At the same time fiscal policy decisions like rising of taxes may not be sufficient enough to cover the increase in debt burden as developing countries have narrow tax base or the rate at which taxes are to be raised may not be politically feasible, or reduction in transfer payments or cutting down of public spending may not be possible given the nature of the economy where public spending plays a major role in shaping the growth trajectory. Thus, the role of money financing of deficit assumes importance in the context of developing countries.

\(^6\) Buiter (1985) pointed out that deficit-debt-inflation nexus starts from the government budget identity where excess of government spending and debt service must be financed by base money creation or sales of debt of any maturity or by running down the foreign exchange reserves. According to Buiter, after a certain point of time, \(T\), there would be an automatic limit on debt-output ratio, which is \(b\), as there is a limit on the private sectors willingness to absorb debt. Under such a situation real primary deficit becomes exogenous and money financing becomes endogenous. The money growth \(\mu\) after date \(T\) is given by:

\[
\mu = v \left[ d + (r - n) b \right]
\]

where \(r\) is the real interest rate which is fixed and \(n\) is the trend growth rate of real output, \(v\) is the income velocity of circulation of money and \(d\) the primary deficit as a proportion of output. The conclusion that can be drawn from equation (1) is that if the real interest rate exceeds the real growth rate, a higher debt-output ratio will be associated with a higher proportional rate of growth of money stock, unless income velocity of money falls.
Apart from the fiscal induced monetary expansion, the large debt is seen as a standing invitation for big inflation designed to reduce the debt burden (see Alesina: 1988, Dornbusch and Draghi: 1990, Giavazzi and Spaventa: 1988, Matsushita: 1929 and Young: 1925). The extreme link between debt and monetary policy occurs in the context of hyperinflation. The full elimination of debt by dramatic inflation occurs in the context of an exceptional situation. However, the more plausible is the possibility of liquidation of part of the debt through moderate inflation.

In the face of high debt and debt burden, pursuing tight monetary policy is extremely difficult. Tightness means increase in the real interest rate. Thus, for any level of debt that means higher debt servicing obligation and hence more rapid growth of debt. Tighter monetary policy means a reduction in seigniorage and greater proportion of the deficit financing through non-monetised debt thus increasing further pressure on the rate of interest. Higher real interest rate would slow down the growth rate of the economy and hence tend to speed up the rise in the debt-GDP ratio.

2.5 Debt Growth, Debt Burden and Fiscal Policy

Accumulation of public debt and corresponding increase in debt burden poses certain constraint on the functioning of fiscal policy. In the face of large scale accumulation of public debt and corresponding increase in the interest burden, the freedom of the fiscal authority might get restricted in setting the non-interest expenditure priorities of the government. However, the interest burden need not pose any problem if the debt-servicing ratio, viz., interest payment/ revenue receipts does not increase. To keep this ratio under check, the revenue needs to grow at sufficiently high rate. As the growth of revenue is intimately linked with the rate of growth of national income, the national income must grow and so also the income elasticity of revenue.

If revenue does not grow, government’s attempt to finance persistent deficit through borrowing would lead to a debt-deficit spiral in which the interest payments on even larger debt grow explosively, leading to the bankruptcy of government exchequer and repudiation of public debt. This phenomenon of 'doomsday scenario' although is an

7 In standard macroeconomics, the objective of fiscal policy is to arrive at a combination of choice about expenditure, taxes and debt issue (Barro: 1998).
extreme case, the solvency of the government needs to be preserved for the effective functioning of both fiscal and monetary policies. In a 'doomsday scenario' when further borrowing would no longer be available, it will force the government either reduce non-interest spending or to increase in taxes. Tanzi and Blejer (1988: p. 237) commented that such a constraint is a major problem for the fiscal policy that may have important implications for the potential growth of the economy.

According to Tanzi and Blejer (1988), reduction in non-interest spending or increase in taxes may have adverse impact on the growth potential of the economy. Tanzi and Blejer (1988) observed that non-interest-spending reduction in many countries often does not follow efficiency considerations. Thus, the countries that have to adjust their non-interest public spending (i) reduces wages rather than public employment, (ii) reduces capital rather than current expenditure, (iii) reduces domestically financed investment while maintaining investment projects financed by foreign sources, even though these may have lower productivity and (iv) reduces maintenance costs rather than entitlements. These in turn result in a structure of public spending less conducive to growth.

They also noted that countries that have tried to accommodate the increased spending associated with higher interest payment by raising taxes but generally they have not been very successful. Countries in general have increased indirect taxes, import duties, excise and fuel taxes and export taxes. The increase in foreign trade taxes often increases distortions and thus reduces the growth potential of the country.

Another major problem associated with large debt for the functioning of fiscal policy is the problem of large-scale amortisation. If amortisation payments could be fully refinanced through an equal borrowing obtained at similar conditions, those amortisation payments would not create problems for the fiscal policy. However, when the cost of borrowing goes up, the borrowing to pay amortisation often increases interest payments.

2.5.1 Statutory Limits to Debt: Alternative Views

In view of the constraints large debt can pose on the conduct of monetary and fiscal policies, in recent years the idea is mooted in several countries to impose statutory limits
on public debt. In the face of rising debt and deficits during the 1980s, among others, Canada and Italy introduced the deficit and debt reduction act. In UK medium term financial strategy was worked out during the 1980s, and in 1985, USA introduced 'Balanced Budget and Emergency Deficit Control Act' (Gramm Rudman Holling Act). In the 1990s, such act was introduced in several other countries. To start with, the Maastricht Treaty (1991) required a ceiling on the 'general government debt' at a reference value of 60 per cent of GDP. The New Zealand government also required promulgating a Fiscal Responsibility Act (1994) where they have announced a medium term plan of reducing the public debt ratio to a prudent level. A similar legal option is being considered in Australia (1998) to contain the general government debt and other contingent liabilities at a prudent level. Among the developing countries, Indonesia, since 1996, enforced rule based balanced budgeting, which is applicable not only to the central government but also provincial and local governments. In Argentina also such moves were taken in 1999.

In India the government has initiated a process of introducing legal framework to have prudent management of public finance. A Committee, which was set up to draft the Fiscal Responsibility Bill, submitted its report to the government on February 2000. The principal objective of the 'Fiscal Responsibility and Budget Management Bill' (hereafter only bill) 2000 was to bring down the fiscal deficit to GDP ratio to 2 per cent within a span of five years, between 1st April 2001 and March 31st 2006. The yearly target of pruning down the fiscal deficit was kept at 'one-third of one per cent or more of the estimated gross domestic product at the end of each financial year commencing on the 1st day of April, 2001.' Secondly, the committee recommended a ceiling on revenue deficit by 'half per cent or more of the estimated GDP at the end of each financial year commencing on the 1st day of April 2001' and eliminate it by the end of March 2006.

---
8 "A statutory limit on public debt implies a normative level or ratio to which the public debt has to be frozen, and the rationale for the specified normative limit has to be judged with reference to what may be called the economic limit of public debt in the economy" (RBI-Bulletin, December, 1997, p. 998).
9 It has been noted that 'until the early 1980s, fiscal deficits in the United States and most other developed nations had been relatively small except during wars or deep economic downturns' (Poterba: 1997, p.55). However, the substantial tax cuts of 1981 and failure to contain government spending led to sharp increase in the peacetime deficit. (For a detailed discussion see Poterba: 1994). The rise of such deficits was the proximate cause of the discussion, beginning in the mid 1980s, of the federal balanced budget amendments and of the related enactment of the Gramm-Rudman-Hollings anti deficit legislation' (Poterba: 1997, p.56).
10 For a detailed discussion on the fiscal rules to budget management refer Kopits Symansky (1998).
The committee also recommended that '...the Central Government shall not borrow from the Reserve Bank of India.'

As mentioned in the chapter-1, there is no universal rule to decide on a prudential level of debt-GDP ratio; the question of numerical ceiling remains ambiguous. In fact, many public finance economists have traditionally viewed budget rules as institutional details that do not warrant substantial research attention (Poterba: 1997, p.53). However, there are notable exceptions of economists who commented on the issue of budget rules. Hansen (1941) and Learner (1961) argued that there should be no arbitrary limit to public debt and it should be allowed to rise till it reaches its natural limit at the full employment level. Musgrave (1939), Colm and Wagner (1963), and Kotlikoff (1986) argued that the discussion on budget rules has to focus on optimum levels of expansionary and contractionary policy, or the design of tax and expenditure programme. According to Poterba (1997: p.53) 'arbitrary budget constraints such as balanced budget rules or tax and expenditure limits represents constraints that cannot improve, and may reduce social welfare.' Barro (1979) also argued that a balanced budget rule, which requires taxes to equal spending, might reduce welfare by preventing the social planner from choosing the optimal path of taxation.

While commenting on the Gramm Rudman Holling Act, Tobin (1987) mentioned that if the act takes effect, fiscal policy tool would be an ineffective instrument for demand management. He further mentioned that given the high share of structural deficit\textsuperscript{11} in total budget deficit, counter-cyclical fiscal policy to combat recession through added fiscal stimulus would be impossible under this act. Bagchi (1991, p.7) noted that "(A) constitutional cap on deficits not only undermines the potency of the fiscal policy for macro-management of the economy but also weakens the ability of the government to face emergencies like external threat". He further argued that across the board cut in government expenditure to achieve numerical limits of deficits and debt might slow down growth. Instead, a consensus should be evolved on the items of expenditure that can be cut.

\textsuperscript{11} A discussion on structural deficit is undertaken in Chapter 4. The estimates of structural and cyclical deficits in India are also reported there.
On the Fiscal Responsibility and Budget Management Bill in India, the 'Parliamentary Standing Committee' in its observation categorically mentioned that bill should not fix any numerical targets of yearly reduction in fiscal and revenue deficits. As per committee's observations, '.... the numerical ceilings and the time frame prescribed for the revenue and fiscal deficit do not seem to be pragmatic and induce excessive rigidity into decision making.' The committee also disagrees with the provision of closing the access of central government's borrowing from the Reserve Bank of India.

2.6 Summing Up

On the basis of the review of literature, following important points emerges:

Firstly, RET argued that there is complete debt-neutrality whatever way a given public expenditure-financing pattern is chosen. However, RET is criticised as it is based on restrictive assumptions.

Secondly, the literature on intergenerational equity argued that debt financing of government expenditure does affect intergenerational equity. In what way, i.e., whether it burdens future generation or spread over the burden equally across generation, largely depends on the way borrowed resources are being used. If it is used for current expenditure purposes, it is an abuse of the instrument of borrowing as it does not add to the productive capacity but taxes the future generation to service the debt. But if the borrowed resources are used for capital expenditure purposes it only passes on the tax liability to future generation that enjoys the benefit of this project as well.

Thirdly, with regard to the debt burden literature argued that debt burden is a problem associated with the growth of national income. If the national income growth increases and the real rate of interest remains to be lower than the real rate of growth, debt-GDP ratio converges and the tax rate required to be imposed to meet debt burden need not increase.

Fourthly, the literature also argued that if the debt sustainability condition is violated, there would be fiscally induced monetary expansion, which would undermine the objective of monetary policy. Also large debt may lead to more inflation to reduce the debt burden and also act as constraint to pursue tight
monetary policy, as it would lead to an increase in the interest rate, which in turn would again propel the growth of deficit.

Fifthly, it acts as constraint in setting the fiscal policy issues such as the volume of non-interest expenditure, tax structure and the use of debt instruments.

Finally, the effect of debt would also depend on its composition. If the share of external debt in total debt is too high it might adversely affect the balance of payment situation. On the other hand, if the share of internal debt is too high that has to be financed either through money creation or issuance of bonds. As mentioned earlier, if the share of money financing increases, it might undermine the monetary policy objective. Similarly, if the share of bond financing increases, it might exert pressure on the rate of interest, crowd out private investment and thereby growth.