

in 2001-02 (Table 5.1). Under the constraint imposed by the FRBMA, the fiscal deficit as well as the revenue deficit have fallen to 4.1 per cent and 2.5 per cent respectively in 2004-05 (provisional figures). The increasing share of the revenue deficit as a proportion of the fiscal deficit (which was 49.4 per cent in 1990-91 but has increased to 79.7 in 2003-04) indicates the rapid decline in the quality of the deficit.

Table 5.1: Receipts and Expenditures of the Central Government

(As per cent of GDP)	1990 -91	2000 -01	2001 -02	2002 -03	2003 -04
1. Revenue Receipts(a+b)	9.7	9.1	8.8	9.4	9.6
(a) Tax revenue(net of states' share)	7.6	6.5	5.9	6.5	6.8
(b) Non-tax revenue	2.1	2.7	3.0	3.0	2.8
2. Revenue Expenditure	12.9	13.2	13.2	13.8	13.1
(a) Interest payments	3.8	4.7	4.7	4.8	4.5
(b) Major subsidies	1.7	1.2	1.3	1.7	1.6
(c) Defence expenditure	1.9	1.8	1.7	1.7	1.6
3. Revenue Deficit(2-1)	3.3	4.0	4.4	4.4	3.6
4. Capital Receipts(a+b+c)	5.6	6.3	7.1	7.4	7.5
(a) Recovery of loans	1.0	0.6	0.7	1.4	2.4
(b) Other receipts(mainly PSU disinvestment)	0.0	0.1	0.2	0.1	0.6
(c) Borrowings and other liabilities	4.6	5.6	6.2	5.9	4.5
5. Capital Expenditure	4.4	2.3	2.7	3.0	4.0
6. Total Expenditure [(2+5=6(a)+6(b))]	17.3	15.4	15.9	16.9	17.1
(a) Plan expenditure	5.0	3.9	4.4	4.6	4.4
(b) Non-plan expenditure	12.3	11.5	11.4	12.3	12.6
7. Fiscal Deficit [6-1-4(a)-4(b)]	6.6	5.6	6.2	5.9	4.5
8. Primary Deficit [7-2(a)]	2.8	0.9	1.5	1.1	0.0

Source: Economic Survey, 2005-06

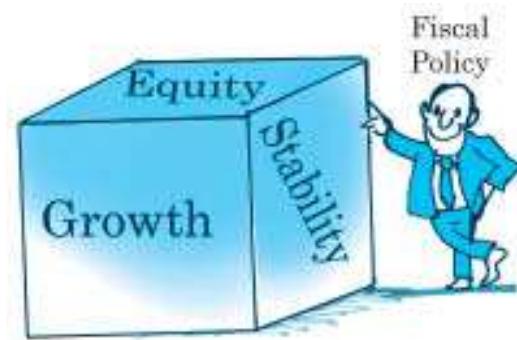
Primary Deficit: We must note that the borrowing requirement of the government includes interest obligations on accumulated debt. To obtain an estimate of borrowing on account of current expenditures exceeding revenues, we need to calculate what has been called the primary deficit. It is simply the fiscal deficit minus the interest payments

$$\text{Gross primary deficit} = \text{Gross fiscal deficit} - \text{net interest liabilities}$$

Net interest liabilities consist of interest payments minus interest receipts by the government on net domestic lending.

5.2 FISCAL POLICY

One of Keynes's main ideas in *The General Theory of Employment, Interest and Money* was that government fiscal policy should be used to stabilise the level of output and employment. Through changes in its expenditure and taxes, the government attempts to increase output and income and seeks to stabilise the ups and downs in the economy. In the process, fiscal policy creates a *surplus* (when total receipts exceed expenditure) or a *deficit budget* (when total



How does the Fiscal Policy try to achieve its three basic objectives?

expenditure exceed receipts) rather than a *balanced budget* (when expenditure equals receipts). In what follows, we study the effects of introducing the government sector in our earlier analysis of the determination of income.

The government directly affects the level of equilibrium income in two specific ways – government purchases of goods and services (G) increase aggregate demand and taxes, and transfers affect the relation between

income (Y) and disposable income (YD) – the income available for consumption and saving with the households.

We take taxes first. We assume that the government imposes taxes that do not depend on income, called **lump-sum taxes** equal to T . We assume throughout the analysis that government makes a constant amount of transfers, $\bar{T}R$. The consumption function is now

$$C = \bar{C} + cYD = \bar{C} + c(Y - T + \bar{T}R) \quad (5.1)$$

where YD = disposable income.

We note that taxes lower disposable income and consumption. For instance, if one earns Rs 1 lakh and has to pay Rs 10,000 in taxes, she has the same disposable income as someone who earns Rs 90,000 but pays no taxes. The definition of aggregate demand augmented to include the government will be

$$AD = \bar{C} + c(Y - T + \bar{T}R) + I + G \quad (5.2)$$

Graphically, we find that the lump-sum tax shifts the consumption schedule downward in a parallel way and hence the aggregate demand curve shifts in a similar fashion. The income determination condition in the product market will be $Y = AD$, which can be written as

$$Y = \bar{C} + c(Y - T + \bar{T}R) + I + G \quad (5.3)$$

Solving for the equilibrium level of income, we get

$$Y^* = \frac{1}{1-c} (\bar{C} - cT + c\bar{T}R + I + G) \quad (5.4)$$

5.2.1 Changes in Government Expenditure

We consider the effects of increasing government purchases (G) keeping taxes constant. When G exceeds T , the government runs a deficit. Because G is a component of aggregate spending, planned aggregate expenditure will increase. The aggregate demand schedule shifts up to AD' . At the initial level of output, demand exceeds supply and firms expand production. The new equilibrium is at E' . The multiplier mechanism (described in Chapter 4) is in operation. The government spending multiplier is given by

$$\Delta Y = \frac{1}{1-c} \Delta G \quad (5.5)$$

or

$$\frac{\Delta Y}{\Delta G} = \frac{1}{1-c} \quad (5.6)$$

In Fig. 5.1, government expenditure increases from G to G' and causes equilibrium income to increase from Y to Y' .

5.2.2 Changes in Taxes

We find that a cut in taxes increases disposable income ($Y - T$) at each level of income. This shifts the aggregate expenditure schedule upwards by a fraction c of the decrease in taxes. This is shown in Fig 5.2.

From equation 5.3, we have

$$\Delta Y^* = \frac{1}{1-c} (-c) \Delta T \quad (5.7)$$

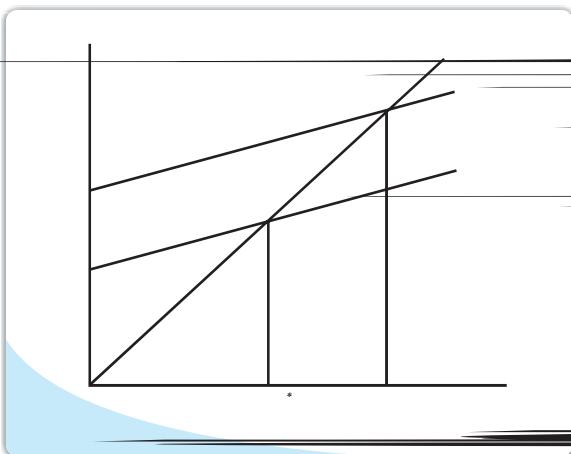
The tax multiplier

$$= \frac{\Delta Y}{\Delta T} = \frac{-c}{1-c} \quad (5.8)$$

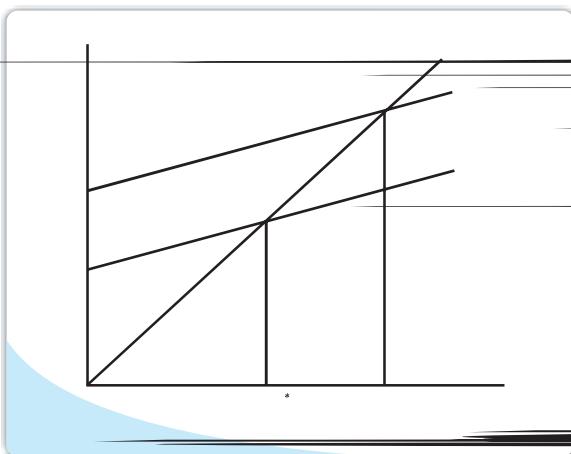
Because a tax cut (increase) will cause an increase (reduction) in consumption and output, the tax multiplier is a negative multiplier. Comparing equation (5.6) and (5.8), we find that the tax multiplier is smaller in absolute value compared to the government spending multiplier. This is because an increase in government spending directly affects total spending whereas taxes enter the multiplier process through their impact on disposable income, which influences household consumption (which is a part of total spending). Thus, with a ΔT reduction in taxes, consumption, and hence total spending, increases in the first instance by $c\Delta T$. To understand how the two multipliers differ, we consider the following example.



Why is the poor man crying? Suggest measures to wipe off his tears.



Effect of Higher Government Expenditure



Effect of a Reduction in Taxes

EXAMPLE 5.1

Assume that the marginal propensity to consume is 0.8. The government expenditure multiplier will then be

$\frac{1}{1-c} = \frac{1}{1-0.8} = \frac{1}{0.2} = 5$. For an increase in government spending by 100, the equilibrium income will increase by 500 ($\frac{1}{1-c} \Delta G = 5 \times 100$). The tax multiplier is

given by $\frac{-c}{1-c} = \frac{-0.8}{1-0.8} = \frac{-0.8}{0.2} = -4$.

A tax cut of 100 ($\Delta T = -100$) will increase

equilibrium income by 400 ($\frac{-c}{1-c} \Delta T = -4 \times -100$). Thus, the equilibrium income increases in this case by less than the amount by which it increased under a G increase.

Within the present framework, if we take different values of the marginal propensity to consume and calculate the values of the two multipliers, we find that the tax multiplier is always one less in absolute value than the government expenditure multiplier. This has an interesting implication. If an increase in government spending is matched by an equal increase in taxes, so that the budget remains balanced, output will rise by the amount of the increase in government spending. Adding the two policy multipliers gives

$$\text{The balanced budget multiplier} = \frac{\Delta Y^*}{\Delta G} = \frac{1}{1-c} + \frac{-c}{1-c} = \frac{1-c}{1-c} = 1 \quad (5.9)$$

A balanced budget multiplier of unity implies that a 100 increase in G financed by 100 increase in taxes increases income by just 100. This can be seen from Example 1 where an increase in G by 100 increases output by 500. A tax increase would reduce income by 400 with the net increase of income equal to 100. The equilibrium income refers to the final income that one arrives at in a period sufficiently long for all the rounds of the multipliers to work themselves out. We find that output increases by exactly the amount of increased G with no induced consumption spending due to increase in taxes. To see what must be at work, we examine the multiplier process. The increase in government spending by a certain amount raises income by that amount directly and then indirectly through the multiplier chain increasing income by

$$\Delta Y = \Delta G + c\Delta G + c^2\Delta G + \dots = \Delta G(1 + c + c^2 + \dots) \quad (5.10)$$

But the tax increase only enters the multiplier process when the cut in disposable income reduces consumption by c times the reduction in taxes. Thus the effect on income of the tax increase is given by

$$\Delta Y = -c\Delta T - c^2\Delta T + \dots = -\Delta T(c + c^2 + \dots) \quad (5.11)$$

The difference between the two gives the net effect on income. Since $\Delta G = \Delta T$, from 5.10 and 5.11, we get $\Delta Y = \Delta G$, that is, income increases by the amount by which government spending increases and the balanced budget multiplier is unity. This multiplier can also be derived from equation 5.3 as follows

$$\Delta Y = \Delta \bar{G} + c(\Delta Y - \Delta T) \text{ since investment does not change } (\Delta I = 0) \quad (5.12)$$

Since $\Delta \bar{G} = \Delta T$, we have

$$\frac{\Delta Y}{\Delta G} = \frac{1-c}{1-c} = 1 \quad (5.13)$$

Case of Proportional Taxes: A more realistic assumption would be that the government collects a constant fraction, t , of income in the form of taxes so that $T = tY$. The consumption function with proportional taxes is given by

$$C = \bar{C} + c(Y - tY + \bar{T}) = \bar{C} + c(1-t)Y + c\bar{T} \quad (5.14)$$

We note that proportional taxes not only lower consumption at each level of income but also lower the slope of the consumption function. The mpc out of income falls to $c(1-t)$. The new aggregate demand schedule, AD' , has a larger intercept but is flatter as shown in Fig. 5.3.

Now we have

$$AD = \bar{C} + c(1-t)Y + c\bar{TR} + I \\ + G = \bar{A} + c(1-t)Y \quad (5.15)$$

Where \bar{A} = autonomous expenditure and equals $\bar{C} + c\bar{TR} + I + G$. Income determination condition in the product market is, $Y = AD$, which can be written as

$$Y = \bar{A} + c(1-t)Y \quad (5.16)$$

Solving for the equilibrium level of income

$$Y^* = \frac{1}{1-c(1-t)} \bar{A} \quad (5.17)$$

so that the multiplier is given by

$$\frac{\Delta Y}{\Delta \bar{A}} = \frac{1}{1-c(1-t)} \quad (5.18)$$

Comparing this with the value of the multiplier with lump-sum taxes case, we find that the value has become smaller. When income rose as a result of an increase in government spending in the case of lump-sum taxes, consumption increased by c times the increase in income. With proportional taxes, consumption will rise by less, ($c - ct = c(1-t)$) times the increase in income.

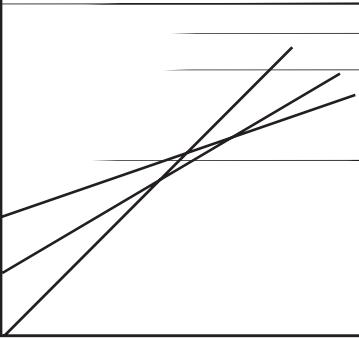
For changes in G , the multiplier will now be given by

$$\Delta Y = \Delta \bar{G} + c(1-t)\Delta Y \quad (5.19)$$

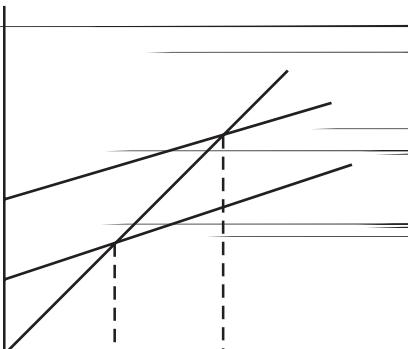
$$\Delta Y = \frac{1}{1-c(1-t)} \Delta \bar{G} \quad (5.20)$$

The income increases from Y^* to Y' as shown in Fig. 5.4.

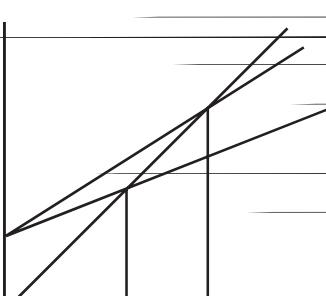
The decrease in taxes works in effect like an increase in propensity to consume as shown in Fig. 5.5. The AD curve shifts up to AD' . At the initial level of income, aggregate demand for goods exceeds output because the tax reduction causes increased consumption. The new higher level of income is Y' .



Government and Aggregate Demand (proportional taxes make the AD schedule flatter)



Increase in Government Expenditure (with proportional taxes)



Effects of a Reduction in the Proportional Tax Rate

EXAMPLE 5.2

In Example 5.1, if we take a tax rate of 0.25, we find consumption will now rise by 0.60 ($c(1 - t) = 0.8 \times 0.75$) for every unit increase in income instead of the earlier 0.80. Thus, consumption will increase by less than before. The

government expenditure multiplier will be $\frac{1}{1 - c(1 - t)} = \frac{1}{1 - 0.6} = \frac{1}{0.4} = 2.5$ which is smaller than that obtained with lump-sum taxes. If government expenditure rises by 100, output will rise by the multiplier times the rise in government expenditure, that is, by $2.5 \times 100 = 250$. This is smaller than the increase in output with lump-sum taxes.

The proportional income tax, thus, acts as an **automatic stabiliser** – a shock absorber because it makes disposable income, and thus consumer spending, less sensitive to fluctuations in GDP. When GDP rises, disposable income also rises but by less than the rise in GDP because a part of it is siphoned off as taxes. This helps limit the upward fluctuation in consumption spending. During a recession when GDP falls, disposable income falls less sharply, and consumption does not drop as much as it otherwise would have fallen had the tax liability been fixed. This reduces the fall in aggregate demand and stabilises the economy.

We note that these fiscal policy instruments can be varied to offset the effects of undesirable shifts in investment demand. That is, if investment falls from I_0 to I_1 , government spending can be raised from G_0 to G_1 so that autonomous expenditure ($C + I_0 + G_0 = C + I_1 + G_1$) and equilibrium income remain the same. This deliberate action to stabilise the economy is often referred to as **discretionary fiscal policy** to distinguish it from the inherent automatic stabilising properties of the fiscal system. As discussed earlier, proportional taxes help to stabilise the economy against upward and downward movements. Welfare transfers also help to stabilise income. During boom years, when employment is high, tax receipts collected to finance such expenditure increase exerting a stabilising pressure on high consumption spending; conversely, during a slump, these welfare payments help sustain consumption. Further, even the private sector has built-in stabilisers. Corporations maintain their dividends in the face of a change in income in the short run and households try to maintain their previous living standards. All these work as shock absorbers without the need for any decision-maker to take action. That is, they work automatically. The built-in stabilisers, however, reduce only part of the fluctuation in the economy, the rest must be taken care of by deliberate policy initiative.

Transfers: We suppose that instead of raising government spending in goods and services, government increases transfer payments, \bar{TR} . Autonomous spending, \bar{A} , will increase by $c\Delta\bar{TR}$, so output will rise by less than the amount by which it increases when government expenditure increases because a part of any increase in transfer payments is saved. The change in equilibrium income for a change in transfers is given by

$$\Delta Y = \frac{c}{1 - c} \Delta TR \quad (5.21)$$

or

$$\frac{\Delta Y}{\Delta TR} = \frac{c}{1 - c} \quad (5.22)$$

EXAMPLE 5.3

We suppose that the marginal propensity to consume is 0.75 and we have lump-sum taxes. The change in equilibrium income when government purchases increase by 20 is given by $\Delta Y = \frac{1}{1-0.75} \Delta G = 4 \times 20 = 80$. When taxes increase by 30, equilibrium income will decrease by 90 because $\Delta Y = \frac{-0.75}{1-0.75} \Delta T = -3 \times 30 = -90$. An increase in transfers of 20 will raise equilibrium income by $\Delta Y = \frac{0.75}{1-0.75} \Delta TR = 3 \times 20 = 60$. Thus, we find that income increases by less than it increased with a rise in government purchases.

5.2.3 Debt

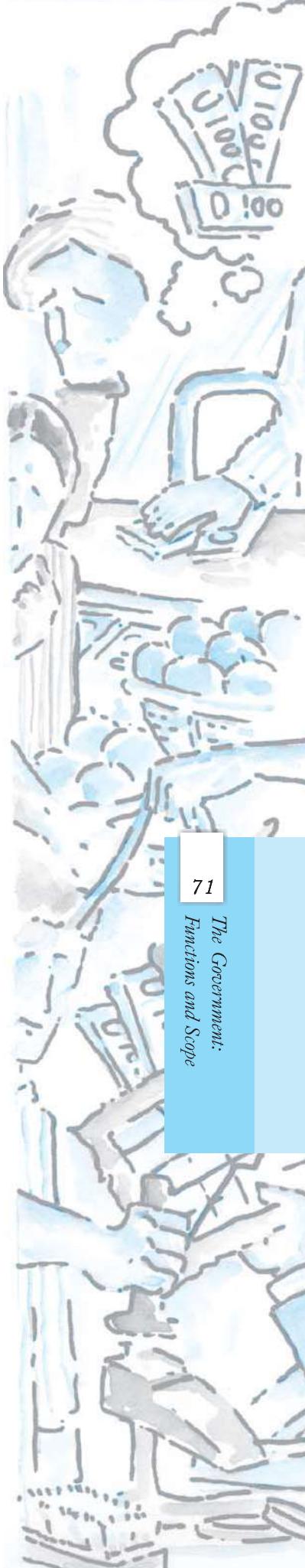
Budgetary deficits must be financed by either taxation, borrowing or printing money. Governments have mostly relied on borrowing, giving rise to what is called government debt. The concepts of deficits and debt are closely related. Deficits can be thought of as a *flow* which add to the *stock* of debt. If the government continues to borrow year after year, it leads to the accumulation of debt and the government has to pay more and more by way of interest. These interest payments themselves contribute to the debt.

Perspectives on the Appropriate Amount of Government Debt: There are two interlinked aspects of the issue. One is whether government debt is a burden and two, the issue of financing the debt. The burden of debt must be discussed keeping in mind that what is true of one small trader's debt may not be true for the government's debt, and one must deal with the 'whole' differently from the 'part'. Unlike any one trader, the government can raise resources through taxation and printing money.

By borrowing, the government transfers the burden of reduced consumption on future generations. This is because it borrows by issuing bonds to the people living at present but may decide to pay off the bonds some twenty years later by raising taxes. These may be levied on the young population that have just entered the work force, whose disposable income will go down and hence consumption. Thus, national savings, it was argued, would fall. Also, government borrowing from the people reduces the savings available to the private sector. To the extent that this reduces capital formation and growth, debt acts as a 'burden' on future generations.

Traditionally, it has been argued that when a government cuts taxes and runs a budget deficit, consumers respond to their after-tax income by spending more. It is possible that these people are short-sighted and do not understand the implications of budget deficits. They may not realise that at some point in the future, the government will have to raise taxes to pay off the debt and accumulated interest. Even if they comprehend this, they may expect the future taxes to fall not on them but on future generations.

A counter argument is that consumers are forward-looking and will base their spending not only on their current income but also on their expected future income. They will understand that borrowing today means higher taxes in the future. Further, the consumer will be concerned about future generations because they are the children and grandchildren of the present generation and the family which is the relevant decision making unit, continues living. They would increase savings now, which will fully offset the increased government dissaving so that national savings do not change. This



view is called **Ricardian equivalence** after one of the greatest nineteenth century economists, David Ricardo, who first argued that in the face of high deficits, people save more. It is called ‘equivalence’ because it argues that taxation and borrowing are equivalent means of financing expenditure. When the government increases spending by borrowing today, which will be repaid by taxes in the future, it will have the same impact on the economy as an increase in government expenditure that is financed by a tax increase today.

It has often been argued that ‘debt does not matter because we owe it to ourselves’. This is because although there is a transfer of resources between generations, purchasing power remains within the nation. However, any debt that is owed to foreigners involves a burden since we have to send goods abroad corresponding to the interest payments.

Other Perspectives on Deficits and Debt: One of the main criticisms of deficits is that they are inflationary. This is because when government increases spending or cuts taxes, aggregate demand increases. Firms may not be able to produce higher quantities that are being demanded at the ongoing prices. Prices will, therefore, have to rise. However, if there are unutilised resources, output is held back by lack of demand. A high fiscal deficit is accompanied by higher demand and greater output and, therefore, need not be inflationary.

It has been argued that there is a decrease in investment due to a reduction in the amount of savings available to the private sector. This is because if the government decides to borrow from private citizens by issuing bonds to finance its deficits, these bonds will compete with corporate bonds and other financial instruments for the available supply of funds. If some private savers decide to buy bonds, the funds remaining to be invested in private hands will be smaller. Thus, some private borrowers will get ‘crowded out’ of the financial markets as the government claims an increasing share of the economy’s total savings. However, one must note that the economy’s flow of savings is not really fixed unless we assume that income cannot be augmented. If government deficits succeed in their goal of raising production, there will be more income and, therefore, more saving. In this case, both government and industry can borrow more.

Also, if the government invests in infrastructure, future generations may be better off, provided the return on such investments is greater than the rate of interest. The actual debt could be paid off by the growth in output. The debt should not then be considered burdensome. The growth in debt will have to be judged by the growth of the economy as a whole.

Deficit Reduction: Government deficit can be reduced by an increase in taxes or reduction in expenditure. In India, the government has been trying to increase tax revenue with greater reliance on direct taxes (indirect taxes are regressive in nature – they impact all income groups equally). There has also been an attempt to raise receipts through the sale of shares in PSUs. However, the major thrust has been towards reduction in government expenditure. This could be achieved through making government activities more efficient through better planning of programmes and better administration. A recent study⁴ by the Planning Commission has estimated that to transfer Re1 to the poor, government spends Rs 3.65 in the form of food subsidy, showing that cash transfers would lead to increase in welfare. The other way is to change the scope of the government by withdrawing from some of the areas where it

⁴“Performance Evaluation of the Targeted Public Distribution System” by the Programme Evaluation Organisation, Planning Commission.

operated before. Cutting back government programmes in vital areas like agriculture, education, health, poverty alleviation, etc. would adversely affect the economy. Governments in many countries run huge deficits forcing them to eventually put in place self-imposed constraints of not increasing expenditure over pre-determined levels (Box 5.1 gives the main features of the FRBMA in India). These will have to be examined keeping in view the above factors. We must note that larger deficits do not always signify a more expansionary fiscal policy. The same fiscal measures can give rise to a large or small deficit, depending on the state of the economy. For example, if an economy experiences a recession and GDP falls, tax revenues fall because firms and households pay lower taxes when they earn less. This means that the deficit increases in a recession and falls in a boom, even with no change in fiscal policy.

1. Public goods, as distinct from private goods, are collectively consumed. Two important features of public goods are – they are non-rivalrous in that one person can increase her satisfaction from the good without reducing that obtained by others and they are non-excludable, and there is no feasible way of excluding anyone from enjoying the benefits of the good. These make it difficult to collect fees for their use and private enterprise will in general not provide these goods. Hence, they must be provided by the government.
2. The three functions of allocation, redistribution and stabilisation operate through the expenditure and receipts of the government.
3. The budget, which gives a statement of the receipts and expenditure of the government, is divided into the revenue budget and capital budget to distinguish between current financial needs and investment in the country's capital stock.
4. The growth of revenue deficit as a percentage of fiscal deficit points to a deterioration in the quality of government expenditure involving lower capital formation.
5. Proportional taxes reduce the autonomous expenditure multiplier because taxes reduce the marginal propensity to consume out of income.
6. Public debt is burdensome if it reduces future growth in output.

Public goods

Automatic stabiliser

Discretionary fiscal policy

Ricardian equivalence

Box 5.1: Fiscal Responsibility and Budget Management Act, 2003 (FRBMA)

In a multi-party parliamentary system, electoral concerns play an important role in determining expenditure policies. A legislative provision, it is argued, that is applicable to all governments – present and future – is likely to be effective in keeping deficits under control. The enactment of the FRBMA, in August 2003, marked a turning point in fiscal reforms, binding the

