Chapter 5: Government Budget and the Economy

Exercises — Exercises

Q1 Explain why public goods must be provided by the government.

Public goods such as national defence, roads and government administration differ from private goods in two ways. First, they are non-rivalrous: one person's consumption does not reduce what is available to others, so many people enjoy the benefit together. Second, they are non-excludable: there is no feasible way to keep anyone from enjoying the benefit, so non-payers (free-riders) cannot be shut out. Because people will not voluntarily pay for what they can get free, the link between producer and consumer that works through payment breaks down, and private firms cannot recover their costs. The market therefore will not supply these goods in adequate quantity. The government must step in and provide them, financing them through the budget so that they can be used without direct payment. This is the allocation function of the budget. Provision by the government does not mean it must produce them itself; the private sector may produce them under public provision.

Q2 Distinguish between revenue expenditure and capital expenditure.

Revenue expenditure is spending that does not create physical or financial assets of the government. It covers the normal running of government departments and services, interest payments on debt, and grants to state governments and other parties (even if some grants are meant for creating assets). It is recurring and mostly committed, so it is hard to cut. Capital expenditure is spending that creates physical or financial assets or reduces financial liabilities. It includes acquiring land, buildings, machinery and equipment, investing in shares, and giving loans and advances to states, union territories, PSUs and other parties. Revenue expenditure is part of the revenue account (revenue budget), whereas capital expenditure belongs to the capital account (capital budget). Both are classified into plan and non-plan items in the budget documents.

Q3 'The fiscal deficit gives the borrowing requirement of the government'. Elucidate.

Fiscal deficit is the excess of the government's total expenditure over its total receipts excluding borrowing: Gross fiscal deficit = Total expenditure - (Revenue receipts + Non-debt creating capital receipts). Non-debt creating capital receipts, such as recovery of loans and proceeds from the sale of PSUs, do not give rise to debt. Since the gap between spending and these receipts cannot be met from revenue, it has to be financed by borrowing, so the fiscal deficit shows the total borrowing the government needs from all sources. From the financing side, Gross fiscal deficit = Net borrowing at home + Borrowing from the RBI + Borrowing from abroad. Net borrowing at home includes funds raised directly from the public (for example small savings schemes) and indirectly from commercial banks through the Statutory Liquidity Ratio. Hence the fiscal deficit equals the government's total borrowing requirement.

Q4 Give the relationship between the revenue deficit and the fiscal deficit.

Revenue deficit is the excess of revenue expenditure over revenue receipts. Fiscal deficit is total expenditure minus revenue receipts and non-debt creating capital receipts. Since total expenditure is revenue expenditure plus capital expenditure, the two are linked by: Fiscal deficit = Revenue deficit + Capital expenditure - Non-debt creating capital receipts. Thus revenue deficit is a part of fiscal deficit. The share of revenue deficit in fiscal deficit shows how borrowing is used. A large share means a large part of borrowing is meeting consumption (revenue) expenditure rather than creating assets through investment. This indicates a deterioration in the quality of government expenditure and lower capital formation.

Q5 Suppose that for a particular economy, investment is equal to 200, government purchases are 150, net taxes (that is lump-sum taxes minus transfers) is 100 and consumption is given by C = 100 + 0.75Y. (a) What is the level of equilibrium income? (b) Calculate the value of the government expenditure multiplier and the tax multiplier. (c) If government expenditure increases by 200, find the change in equilibrium income.

SOLUTION

Net taxes are given, so consumption is taken to depend on disposable income: C = 100 + 0.75(Y - 100). So c = 0.75.

(a) Y = C + I + G = 100 + 0.75(Y - 100) + 200 + 150

Y = 100 + 0.75Y - 75 + 350 = 375 + 0.75Y

0.25Y = 375, so Y = 375 / 0.25 = 1500

(b) Government expenditure multiplier = 1/(1 - c) = 1/(1 - 0.75) = 1/0.25 = 4

Tax multiplier = -c/(1 - c) = -0.75/0.25 = -3

(c) Change in income = 4 x 200 = 800

Answers: (a) Y = 1500; (b) government expenditure multiplier = 4, tax multiplier = -3; (c) equilibrium income rises by 800

Q6 Consider an economy described by the following functions: C = 20 + 0.80Y, I = 30, G = 50, TR = 100. (a) Find the equilibrium level of income and the autonomous expenditure multiplier in the model. (b) If government expenditure increases by 30, what is the impact on equilibrium income? (c) If a lump-sum tax of 30 is added to pay for the increase in government purchases, how will equilibrium income change?

SOLUTION

No tax is levied initially (T = 0), so disposable income = Y + TR. Hence C = 20 + 0.8(Y + 100) = 100 + 0.8Y, with c = 0.8.

(a) Y = 100 + 0.8Y + 30 + 50 = 180 + 0.8Y

0.2Y = 180, so Y = 180 / 0.2 = 900

Autonomous expenditure multiplier = 1/(1 - c) = 1/0.2 = 5

(b) Change in income = 5 x 30 = 150, so new equilibrium income = 900 + 150 = 1050

(c) Tax multiplier = -c/(1 - c) = -0.8/0.2 = -4

Effect of the tax = -4 x 30 = -120

Net change = 150 - 120 = 30 (equal to the balanced budget multiplier of 1 times 30), so income becomes 930

Answers: (a) Y = 900, multiplier = 5; (b) income rises by 150; (c) income rises by 30 in net

Q7 In the above question, calculate the effect on output of a 10 per cent increase in transfers, and a 10 per cent increase in lump-sum taxes. Compare the effects of the two.

SOLUTION

Here c = 0.8, so c/(1 - c) = 0.8/0.2 = 4. Transfers multiplier = +4; tax multiplier = -4.

10 per cent increase in transfers: TR rises from 100 to 110, so change in TR = 10.

Change in output = 4 x 10 = +40

10 per cent increase in lump-sum taxes: taking the tax of 30 introduced in part (c) of the previous question, change in T = 0.10 x 30 = 3.

Change in output = -4 x 3 = -12

Comparison: per unit, the two multipliers are equal in size (4) but opposite in sign. Output rises by 40 with the transfer increase and falls by 12 with the tax increase because the transfer base (100) is larger than the tax base (30), so the same 10 per cent change is a bigger rupee change in transfers.

Answers: transfers +10% raises output by 40; lump-sum taxes +10% lowers output by 12

Q8 We suppose that C = 70 + 0.70YD, I = 90, G = 100, T = 0.10Y. (a) Find the equilibrium income. (b) What are tax revenues at equilibrium income? Does the government have a balanced budget?

SOLUTION

Disposable income YD = Y - T = Y - 0.1Y = 0.9Y

(a) Y = C + I + G = 70 + 0.7(0.9Y) + 90 + 100

Y = 70 + 0.63Y + 190 = 260 + 0.63Y

0.37Y = 260, so Y = 260 / 0.37 = 702.70 (approx.)

(b) Tax revenue T = 0.1 x 702.70 = 70.27 (approx.)

Government purchases G = 100 > tax revenue 70.27, so the budget is not balanced; there is a deficit of 100 - 70.27 = 29.73 (approx.)

Answers: (a) Y is approximately 702.70; (b) tax revenue is approximately 70.27, and the budget is in deficit of about 29.73, not balanced

Q9 Suppose marginal propensity to consume is 0.75 and there is a 20 per cent proportional income tax. Find the change in equilibrium income for the following (a) Government purchases increase by 20 (b) Transfers decrease by 20.

SOLUTION

With proportional tax, mpc out of income = c(1 - t) = 0.75 x (1 - 0.2) = 0.75 x 0.8 = 0.6
1 - c(1 - t) = 1 - 0.6 = 0.4
(a) Government expenditure multiplier = 1/0.4 = 2.5
Change in income = 2.5 x 20 = +50
(b) Transfers multiplier = c/[1 - c(1 - t)] = 0.75/0.4 = 1.875
Change in income = 1.875 x (-20) = -37.5
Answers: (a) income rises by 50; (b) income falls by 37.5

Q10 Explain why the tax multiplier is smaller in absolute value than the government expenditure multiplier.

Government spending is a direct component of aggregate demand, so a rise of dG raises total spending by the full dG in the first round, and the multiplier process then builds on it. The government expenditure multiplier is 1/(1 - c). Taxes, by contrast, do not enter spending directly; they affect it only through disposable income, which influences household consumption. A cut in taxes of dT therefore raises consumption, and hence total spending, only by c times dT in the first round, because part of the extra disposable income is saved. The tax multiplier is therefore -c/(1 - c), negative because a tax cut raises output and a tax rise lowers it. Since c is less than 1, its absolute value c/(1 - c) is always exactly one less than 1/(1 - c). For example, with c = 0.8 the expenditure multiplier is 5 and the tax multiplier is -4.

Q11 Explain the relation between government deficit and government debt.

Budgetary deficits have to be financed by taxation, borrowing or printing money, and governments have mostly relied on borrowing, which creates government debt. Deficit is a flow, while debt is a stock: each year's deficit adds to the stock of debt. If the government keeps borrowing year after year, debt accumulates and the government must pay more and more by way of interest. These interest payments themselves add to expenditure and hence to the deficit and further debt. Thus deficits and debt are closely related: a persistent deficit raises debt, and a larger debt raises interest burden and the future deficit. This is why the primary deficit, which excludes interest payments, is used to see the present fiscal imbalance.

Q12 Does public debt impose a burden? Explain.

Debt can be a burden in some ways. By borrowing, the government may shift the burden of reduced consumption onto future generations: it sells bonds to people today and repays them later by raising taxes on the young, which lowers their disposable income, consumption and national savings. Government borrowing from the people also reduces savings available to the private sector, and to the extent this lowers capital formation and growth, debt is a burden. Debt owed to foreigners is a burden since goods must be sent abroad to pay interest. Against this, debt owed to ourselves involves a transfer within the nation, so purchasing power stays in the country. If borrowing is invested in infrastructure whose return exceeds the rate of interest, future generations may be better off and growth can pay off the debt. So public debt is burdensome if it reduces future growth in output.

Q13 Are fiscal deficits inflationary?

A main criticism is that deficits are inflationary. When the government raises spending or cuts taxes, aggregate demand increases. If firms cannot produce the larger quantities demanded at ongoing prices, prices must rise. However, this holds mainly when the economy is at or near full employment. If there are unutilised resources, output is held back by lack of demand, so a high fiscal deficit, accompanied by higher demand, raises output rather than prices and need not be inflationary. Further, if deficits succeed in raising production, income and saving rise too, so both government and industry can borrow more. Thus fiscal deficits are inflationary only when output cannot expand to meet the extra demand.

Q14 Discuss the issue of deficit reduction.

Deficit can be reduced by raising taxes or cutting expenditure. In India, the government has tried to raise tax revenue with greater reliance on direct taxes (indirect taxes are regressive as they impact all income groups equally), and to raise receipts by selling shares in PSUs. The main thrust, however, has been to reduce expenditure by making government activities more efficient through better planning of programmes and administration. A Planning Commission study found that to transfer Re 1 to the poor the government spends Rs 3.65 on food subsidy, suggesting cash transfers would raise welfare. The scope of government can also be reduced, but cutting programmes in vital areas such as agriculture, education, health and poverty alleviation would harm the economy. Many governments adopt self-imposed limits, as India did through the FRBMA. Also, larger deficits do not always mean a more expansionary policy: in a recession tax revenue falls and the deficit rises even without a policy change.

Q15 What do you understand by G.S.T? How good is the system of G.S.T as compared to the old tax system? State its categories.

Goods and Services Tax (GST) is a single comprehensive indirect tax on the supply of goods and services, from manufacturer or service provider to consumer, operational from 1 July 2017. It is a destination-based consumption tax with Input Tax Credit and has subsumed many Central and State taxes and cesses. Compared with the old system, under which taxes fell on the total value of a commodity, causing cascading, GST taxes only value addition at each stage because credit for tax paid earlier is set off. It standardises laws, procedures and rates across the country, creates a common market, lowers business and production costs, makes Indian goods more competitive, widens the tax base, improves transparency, eases compliance through the online portal, and is expected to raise GDP by about 2 per cent. Categories: there are six standard rates of 0%, 3%, 5%, 12%, 18% and 28% on goods and services.