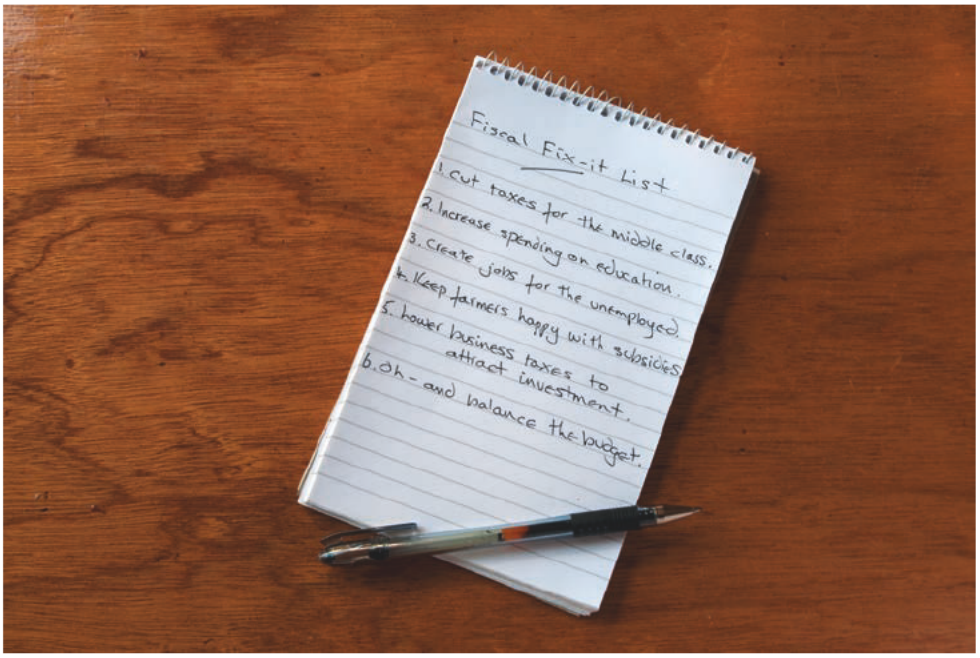
17 FISCAL POLICY

17.1 The government budget

Learning outcomes

- Explain that the government earns revenue primarily from taxes (direct and indirect), as well as from the sale of goods and services and the sale of state-owned (government-owned) enterprises.
- Explain that government spending can be classified into current expenditures, capital expenditures and transfer payments, providing examples of each.
- Distinguish between a budget deficit, a budget surplus and a balanced budget.
- Explain the relationship between budget deficits/surpluses and the public (government) debt.



Every government has a fiscal fix-it list.

Governments and central banks in modern industrialized economies are charged with enacting policies to help an economy achieve the four objectives of macroeconomic policy (Chapters 13–16): a healthy economy is one in which employment levels are high, the price level is stable, output of goods and services increases over time, and national income is distributed in an equitable manner.

In their efforts to achieve their macroeconomic objectives, policymakers are equipped with three types of macroeconomic tool:

- fiscal policy
- monetary policy
- supply-side policies.

In this chapter, you will explore the tools of fiscal policy. Monetary policy and supply-side policies are the topics of Chapters 18 and 19 respectively.

Definition of fiscal policy

Fiscal policy refers to the government's use of taxes and spending to influence the overall level of aggregate demand in the economy to promote the macroeconomic goals of full employment, stable prices and economic growth.

Fiscal policy is a government's manipulation of taxes and expenditures with the goal of increasing or decreasing the level of aggregate demand (AD) in an economy. As one of the four components of a nation's AD, government spending can have powerful effects on the level of economic activity in a nation. By increasing or decreasing the level of government spending on goods and services, overall demand can be directly influenced through fiscal policy. By changing the level of taxation on households and firms, the level of consumption and investment can be indirectly influenced through fiscal policy.

Whether aimed at reducing AD to reduce inflation or increasing AD to reduce unemployment, fiscal policy is used regularly by government to manage the overall level of economic activity of a nation.

Government budget concept

To understand the effect changes in government spending and taxes may have on a nation's economy, you need to grasp the concept of the government's budget. A nation's government must, in principle, finance its expenditures through the collection of taxes from households and firms, through borrowing from the public, or through the sale of state-owned enterprises to the private sector. The types of project that make up a government's expenditure depend on the country's public priorities. As an example, the projected expenditures and projected sources of government revenue of the UK in 2010 are shown in Figure 17.1.

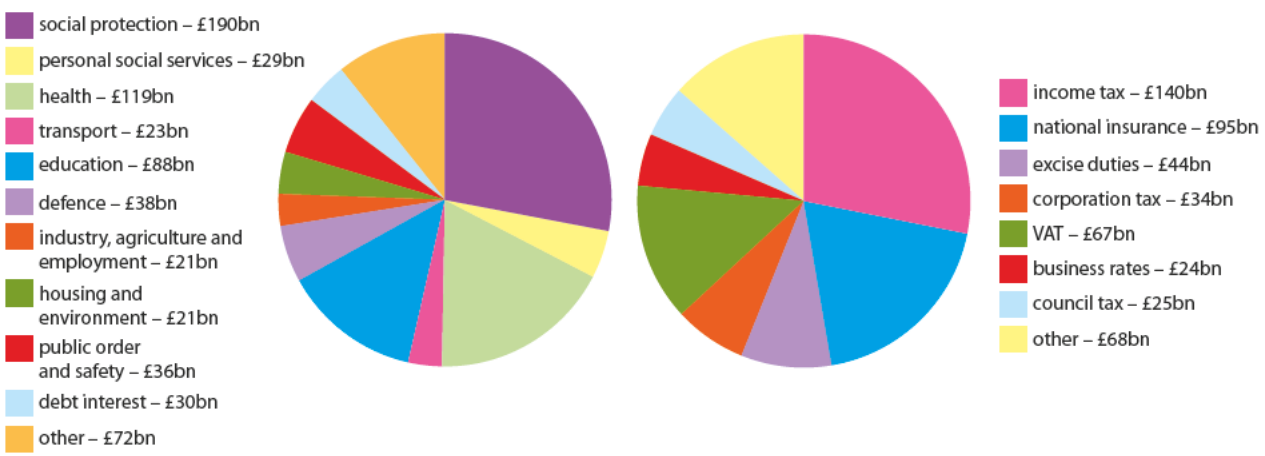
These charts show that in 2010 the UK will spend £676 billion on public goods and services (e.g. infrastructure, health, education, defence), while it will collect only £498 billion in taxes (e.g. household income tax, corporate tax, indirect taxes such as value added tax (VAT), excise tax).

An increase in any of the expenditures or a decrease in any of the taxes would lead to an increase in AD and be considered expansionary fiscal policy. Such policies might be enacted to reduce unemployment and move the UK economy towards its full-employment level of output during a recession.

On the other hand, a decrease in any of the expenditures or an increase in any of the taxes would lead to a decrease in AD and therefore be considered contractionary fiscal policy. Such a policy could be used to reduce inflation and slow down an over-heating British economy.

Figure 17.1
The UK government budget.

HM Treasury,
2009 Pre-budget Report



Deficits, surpluses and debt

When a government's total expenditure exceeds its total tax revenue in a particular year (Figure 17.1), the government is running a budget deficit. The projected deficit for the UK in 2010 would be £178 billion (total expenditure minus total revenue = 676 billion – 498 billion = 178 billion). In order to pay for this deficit, the UK government must borrow from the public. The effects of government borrowing are examined later in this chapter.

Whenever a government borrows to finance a budget deficit (i.e. pay for the difference between its expenditure and its tax revenue), the government increases its national debt, which is the accumulation of the deficits from past years.

If, in a given year, a government's tax revenue exceeds its expenditure, the government's budget is in surplus. A budget surplus reduces the national debt, since surplus tax revenue can be used to pay down what the government owes the public from past deficits. If a government's expenditure exactly equals its tax revenue, the government has a balanced budget.

To learn more about the national debt, visit www.pearsonhotlinks.com, enter the title or ISBN of this book and select weblink 17.1.

A government's budget is in deficit if the total government expenditure in a given year exceeds the total revenue brought in from taxes in that year.

The national debt is the accumulation of all past years' deficits.

If a government's total spending in a year is less than the tax revenue collected, it experiences a budget surplus.

In a deficit year, the national debt grows by the amount of the budget deficit. In a surplus year, the size of the surplus is subtracted from the national debt.

EXERCISES

1 Examine the table below and answer the questions that follow.

Year	US national debt/billions of $
2000	5674
2001	5807
2002	6228
2003	6783
2004	7379
2005	7933
2006	7933
2007	9008
2008	10025
2009	11910
2010	13562

based on data from US Dept of the Treasury, Bureau of the Public Debt, 2010

a In how many years between 2000 and 2010 did the US federal government run a budget surplus? Justify your answer.

b In which year was the US budget deficit the largest? Justify your answer.

c What must be true of the level of government spending relative to the total tax revenues collected in the United States during the period represented by this table?

d Discuss one possible explanation for the continuous growth in the US national debt between 2000 and 2010.

17.2 Automatic fiscal policy and the impact of automatic stabilizers

Learning outcomes

- Explain how factors including the progressive tax system and unemployment benefits, which are influenced by the level of economic activity and national income, automatically help stabilize short-term fluctuations.

Fiscal policy can be thought of as happening in two ways: automatically and at the discretion (i.e. based on the decisions) of policymakers.

Periods of economic growth

Automatic fiscal policy arises due to the nature of many of the expenditures made and tax revenues received by governments. An economy that is producing at or beyond its full-employment level of national output, in which unemployment is very low and household and firms' incomes and revenues are high, will experience an automatic decrease in the government's expenditures on certain items.

For example, if the UK economy were producing at a high level of gross domestic product (GDP) with very low unemployment, government spending on social protection, personal social services and health should automatically decrease. This is simply because when employment and incomes are high, fewer people will be collecting government benefits such as unemployment benefit, housing subsidies, welfare payments, subsidized food assistance, and so on.

To learn more about government spending, visit www.pearsonhotlinks.com, enter the title or ISBN of this book and select weblink 17.2.

In some countries, such as the US, where health insurance is provided by both the private and the public sector, low unemployment relieves the government's need to spend on healthcare for low-income or unemployed members of the workforce since more people receive health insurance from their employers. During periods of economic growth, when output and employment increase, government spending is automatically reduced.

With regard to tax revenues, a growth in a nation's GDP automatically leads to increases in tax revenues, which are based primarily on incomes and expenditures of households and firms. Since both incomes and expenditures rise during periods of economic growth, tax revenues automatically grow. The decrease in government spending and increase in tax revenues that occur during periods of expansion have the effect of automatically reducing AD and offsetting the inflationary pressures that often accompany expansions.

Periods of recession

During recessions and periods of high unemployment, the exact opposite occurs. If a nation's GDP falls, government spending on welfare, unemployment benefits, healthcare and subsidies for the victims of recession automatically increase as more of the nation's workforce receive social benefits from the government. At the same time, tax receipts decrease as incomes and expenditures by the nation's households and firms decline. The fall in AD is, therefore, counteracted through an automatic increase in government spending and decrease in taxes, keeping recession at bay. Figure 17.2 shows the effects of automatic fiscal stabilizers during growth and recession.

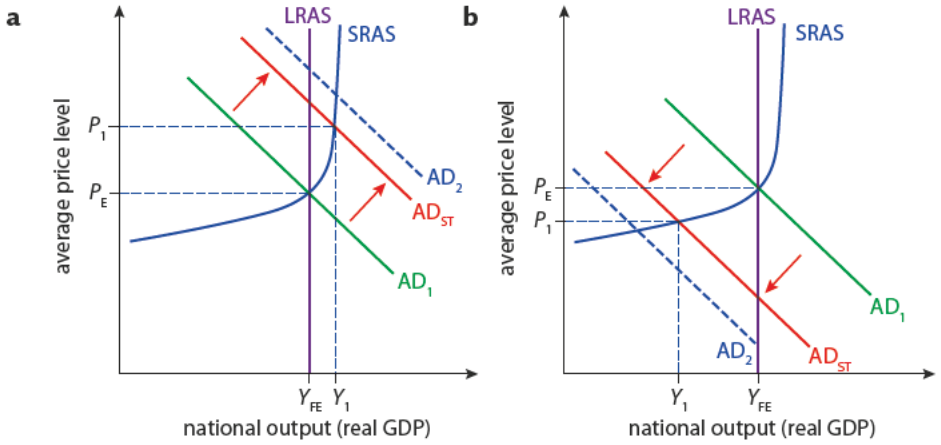


Figure 17.2
Automatic fiscal policy: changes to taxes and government spending happen automatically.
a During periods of growth; **b** during periods of recession.

In Figure 17.2a, AD has risen beyond the full-employment level; at this high level of employment, the government's need to provide social benefits to the population falls so such government expenditures decline. In addition, businesses pay more in taxes to the government as their level of output rises. Therefore, an increase in AD that would normally increase demand from AD_1 to AD_2, causing significant inflation, is mitigated by the automatic stabilizers and grows only to AD_{ST}. Higher taxes and lower government spending have the effect of reducing the rate of growth in AD, moving the economy back towards its full-employment level (Y_{FE}).

In Figure 17.2b, the economy has entered a demand-deficient recession. Employment has fallen, so more workers are eligible to receive government benefits. Taxes on firms also automatically fall during a recession because firm revenues and profits decline. In this case, an AD decline that would normally result in AD_2 instead results in a recession that is less severe, to AD_{ST}. The increase in government benefit spending and the decrease in taxes paid have an expansionary effect on AD, moving the economy back towards full employment (or at the very least slowing the economy's decline into recession).

Automatic fiscal policy refers to the notion that, in most nations, tax and government spending systems have an element of built-in stability through which an increase in GDP is automatically accompanied by a decrease in government spending and an increase in taxes. A fall in total output and income, on the other hand, automatically results in an increase in government spending and a decrease in taxes.

Built-in stability

Figure 17.3 shows the concept of built-in stability in fiscal policy. As GDP rises, tax revenues automatically increase and government spending falls. During a recession, when GDP declines, government spending on social benefits increases while tax revenues fall. In theory, there is a level of GDP at which a government could achieve a balanced budget where tax receipts equal government spending. This level of GDP is likely to be around the nation's full-employment level of output.

The government is best which governs least. This aphorism is sometimes used to argue against the active role of government in an economy. Do you agree that society is better off with less government? Would we all be better off without any government in our lives? What do governments do that contributes to our well-being? What do they do that detracts from our well-being?

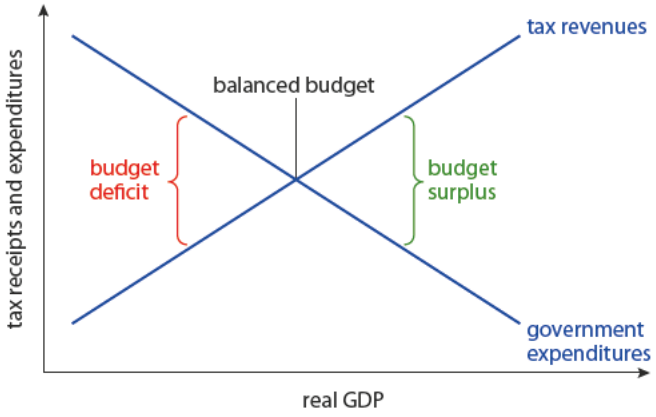


Figure 17.3
Built-in stability in fiscal policy.

To learn more about fiscal policy, visit www.pearsonhotlinks.com, enter the title or ISBN of this book and select weblink 17.3.

17.3 Discretionary fiscal policy and its effect on potential output

Learning outcomes

- Explain how changes in the level of government expenditure and/or taxes can influence the level of aggregate demand in an economy.
- Describe the mechanism through which expansionary fiscal policy can help an economy close a deflationary (recessionary) gap.
- Construct a diagram to show the potential effects of expansionary fiscal policy, outlining the importance of the shape of the aggregate supply curve.
- Describe the mechanism through which contractionary fiscal policy can help an economy close an inflationary gap.
- Construct a diagram to show the potential effects of contractionary fiscal policy, outlining the importance of the shape of the aggregate supply curve.
- Explain that fiscal policy can be used to promote long-term economic growth (increases in potential output) indirectly by creating an economic environment that is favourable to private investment, and directly through government spending on physical capital goods and human capital formation, as well as provision of incentives for firms to invest.

The effects of the automatic adjustments in government spending and taxes that occur as a nation's GDP increases or decreases may be enhanced through a government's discretionary fiscal policies. During a deep recession, such as that which began in the US and Europe in early 2008 and lasted until mid-2009, governments may decide to increase expenditures on public goods and services such as roads, defence, education and health, while simultaneously reducing the level of taxation on households and firms in order to stimulate consumption and investment.

Such a fiscal stimulus package was implemented in 2009 under US President Barack Obama in the form of the American Recovery and Reinvestment Act (ARRA), which included over $200 billion in tax cuts and $500 billion in new government spending aimed at stimulating AD in the US.

Two of the goals of ARRA are to:

- *create new jobs and save existing ones*
- *spur economic activity and invest in long-term growth*

The Recovery Act intends to achieve these goals by:

- *providing $288 billion in tax cuts and benefits for millions of working families and businesses*
- *increasing federal funds for education and healthcare as well as entitlement programs (such as extending unemployment benefits) by $224 billion*
- *making $275 billion available for federal contracts, grants and loans*

Recovery.gov, the official website for data related to the Recovery Act

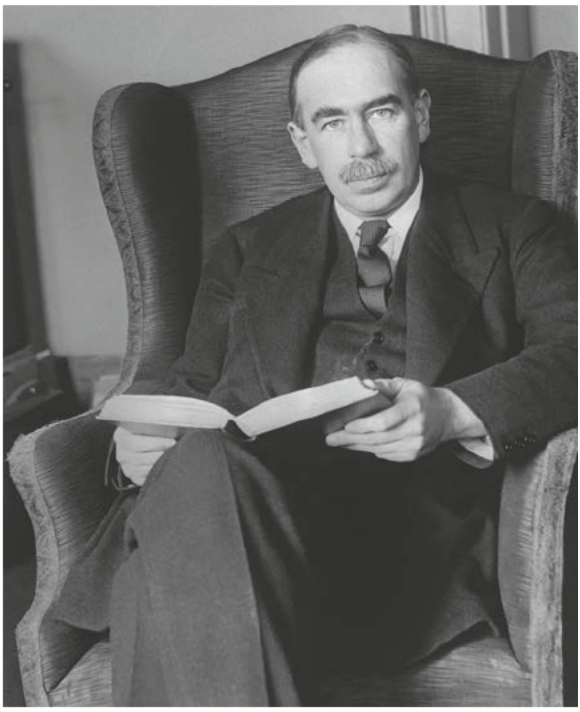
Discretionary fiscal policy is a change in taxes and spending undertaken by government with the explicit aim of either stimulating or contracting the overall level of demand in the economy to promote economic stability and full employment.

The ARRA is one example of discretionary fiscal policy. The difference between such a policy and the automatic stabilizers is that discretionary policies require action by government whereas automatic stabilizers do not.

Keynes, the demand-siders and fiscal policy

The regular use of discretionary fiscal policy to battle recessions was first advocated by John Maynard Keynes during the Great Depression of the 1930s when he argued that government's manipulation of taxes and spending could have powerful effects on AD in a nation, and thus move it towards full employment during recessions or periods of high inflation. Keynes's demand-side theories are rooted in the belief that economies will not necessarily self-correct (return to the full-employment level of output on their own) during periods of fluctuating AD, as the classical economic theory suggests.

Keynes's advocacy for an active role for government in promoting macroeconomic stability is based on his observations of the inflexible nature of wages and prices in an economy during recession. Since firms find it hard to lower the wages they pay their workers (due to long-term contracts and the influence of labour unions), they cannot simply lower their products' prices to keep demand high during recessions. As a result they must fire workers to keep their costs low, which leads to an increase in unemployment during periods of weak AD.



John Maynard Keynes, a depression-era economist, argued that government should play an active role in managing the level of aggregate demand in a nation to help achieve the macroeconomic objectives.

Keynes believed the government could make up for a decrease in private spending and reverse the corresponding rise in unemployment by cutting taxes and increasing government expenditures during recession, thereby shifting AD out towards its full-employment level. The automatic adjustments in spending and taxes, however, may not be enough to make up for the fall in private spending that often occurs during recessions, thus the need for fiscal stimulus packages such as the 2009 ARRA in the US.

The major argument against the use of expansionary fiscal policy during recession comes from the neo-classical supply-side school of economists and is based on the fact that an increase in spending accompanied by a decrease in taxes requires a government to run a budget deficit. Financing such a deficit requires the government to borrow from the public, which in turn could drive up interest rates and lead to a fall in consumption and investment, thus negating the intended expansionary effects of the fiscal policy. This concept is explained in depth later in this chapter.

To learn more about the budget deficit, visit www.pearsonhotlinks.com, enter the title or ISBN of this book and select weblink 17.4.

Keynes believed that private individuals are driven as much by their animal spirits as they are by rational thought. He therefore believed that free market theory was flawed because it assumed humans always act rationally.

Even apart from the instability due to speculation, there is the instability due to the characteristic of human nature that a large proportion of our positive activities depend on spontaneous optimism rather than mathematical expectations, whether moral or hedonistic or economic. Most, probably, of our decisions to do something positive, the full consequences of which will be drawn out over many days to come, can only be taken as the result of animal spirits – a spontaneous urge to action rather than inaction, and not as the outcome of a weighted average of quantitative benefits multiplied by quantitative probabilities.

John Maynard Keynes, *The General Theory of Employment, Interest and Money*, 1936

- Discuss with your class examples of decisions you or people you know have made that were decided more by emotion than by rationality.
- How can the actions of society as a whole, when driven by emotion and rationality, result in economic instability and ultimately recession and unemployment?

Demand-side policies are the macroeconomic policies of government aimed at stimulating or reducing the overall level of aggregate demand to promote the short-run achievement of the three macroeconomic objectives of full employment, price stability and economic growth. Fiscal policy is one tool for demand management, monetary policy is the other (Chapter 18).

Fiscal policy and short-term demand management

Closing a recessionary gap

During times of recession, a government may choose to implement an expansionary fiscal stimulus package, such as the $774 billion ARRA in the US or China's $585 billion fiscal stimulus launched in late 2008 to combat falling demand for its exports and slowing economic growth.

When private consumption, investment and export sales fall during a recession, an increase in government spending and a decrease in taxes can offset the fall in other spending and move AD and GDP back towards the full-employment level (Figure 17.4).

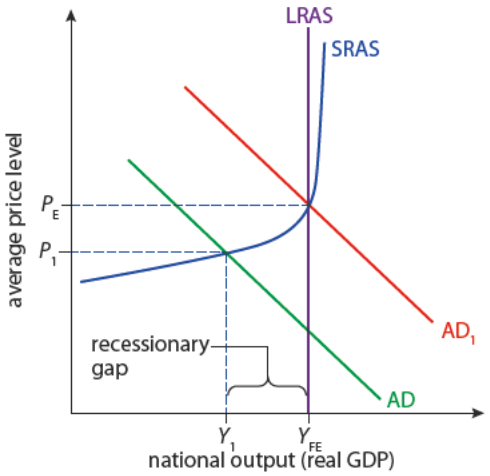


Figure 17.4
A recessionary gap: when AD intersects SRAS below the full-employment level of output.

To learn more about the recession, visit www.pearsonhotlinks.com, enter the title or ISBN of this book and select weblink 17.5.

Expansionary fiscal policy is a decrease in taxes and/or an increase in government spending aimed at increasing the level of aggregate demand to close a recessionary gap and move an economy towards its full-employment level of output.

An appropriately sized tax cut and spending package could, in theory, increase the level of AD in the nation and fill the recessionary gap resulting from low private spending. To determine the amount of stimulus necessary to achieve a particular increase in AD and fill a recessionary gap, the government must consider the impact an increase in spending will have on total demand in the economy.

Closing an inflationary gap

Just as a fiscal stimulus package consisting of a decrease in taxes or an increase in government spending will have an expansionary effect on AD and help reduce the size of a recessionary gap, a contractionary fiscal policy consisting of higher taxes and less government spending can be used to reduce AD and thereby bring down inflation in an economy.

When private investment, consumption or net exports rise without a corresponding rise in aggregate supply (AS), the result is demand-pull inflation. As seen in Figure 17.5, demand-pull inflation results from a level of demand for a nation's output that exceeds the level of output achievable by the nation when producing at full employment. In the short run, GDP can grow beyond the full-employment level, but such growth is accompanied by high inflation and all the undesirable effects inflation brings (Chapter 14).

To reduce the level of AD in the economy in Figure 17.5, a government can employ a discretionary fiscal policy consisting of an increase in taxes and/or a decrease in government spending. Higher taxes will reduce households' disposable income and reduce the level of consumption and investment by firms. A decrease in government spending directly reduces the level of AD and puts downward pressure on the rate of inflation, moving the economy closer to its full-employment level of output.

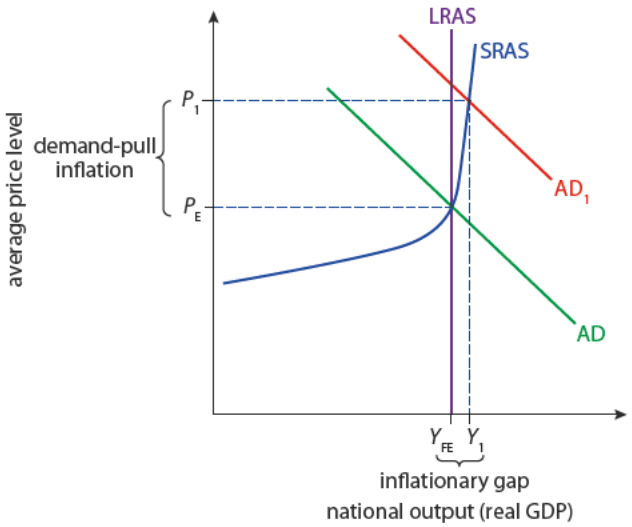


Figure 17.5
An inflationary gap: when AD intersects SRAS beyond the full-employment level of output.

To learn more about Keynesian economics, visit www.pearsonhotlinks.com, enter the title or ISBN of this book and select weblink 17.6.

Contractionary fiscal policy is an increase in taxes and/or a decrease in government spending aimed at decreasing aggregate demand to close an inflationary gap and moving the economy to its full-employment level of output and price level stability.

EXERCISES

2 Study the table below and answer the questions that follow.

Year	Unemployment rate/%	Year	Inflation rate/%
1990	5.6	1978	7.6
1991	6.8	1979	11.3
1992	7.5	1980	13.5

US Bureau of Labor Statistics

a Describe the macroeconomic conditions in the US during the two time periods represented above.

b Identify a fiscal policy response to the macroeconomic conditions during the two time periods. Using an AD/AS diagram, illustrate the macroeconomic conditions in the US before the enactment of fiscal policy and after.

c What risk does the use of fiscal policy to reduce inflation pose for policymakers? What risk does the use of fiscal policy to reduce unemployment pose for policymakers?

17.4 The Keynesian spending multiplier (HL only)

The size of the fiscal stimulus necessary to achieve a particular increase in total spending

Learning outcomes

- Explain, with reference to the concepts of leakages (withdrawals) and injections, the nature and importance of the Keynesian multiplier.
- Calculate the multiplier using either of the following formulae.

$$\frac{1}{(1 - MPC)} \quad \text{or} \quad \frac{1}{(MPS + MPT + MPM)}$$

- Use the multiplier to calculate the effect on GDP of a change in an injection in investment, government spending or exports.
- Draw a Keynesian AD/AS diagram to show the impact of the multiplier.

To learn more about the marginal propensity to consume, visit www.pearsonhotlinks.com, enter the title or ISBN of this book and select weblink 17.7.

in an economy depends on the size of the spending multiplier, which in turn depends on the public's marginal propensity to consume (MPC) and the marginal rate of leakage (MRL) (Chapter 12).

The multiplier effect of a change in government spending refers to the fact that any change in government spending affects household incomes in the nation, which thereby affects the amount of private spending among households and firms. Therefore, when government spending increases by a certain amount, say $100 billion, the ultimate increase in the nation's GDP should be something greater than $100 billion; just how much bigger depends on how much of the initial change in spending gets spent again by households and firms and how much gets saved or otherwise leaked from the circular flow.

To learn more about the marginal propensity to save, visit www.pearsonhotlinks.com, enter the title or ISBN of this book and select weblink 17.8.

The MPC is the proportion of a change in national income households use to purchase domestically produced goods and services. The MRL is the proportion of a change in income which gets taxed plus the proportion that households save and buy imports with (in other words, income that is leaked from the circular flow). MRL is the sum of the marginal propensity to save (MPS), the marginal propensity to tax (MRT) and the marginal propensity to import (MPM). Each of these is considered a leakage from the circular flow, so the larger proportion of a change in income that goes towards these, the lower the multiplier effect will be.

MPC + MRL = 1 since consumption, savings, taxes and buying imports are the only possible things a nation can do with a change in national income. The formulas below show how each of these propensities is calculated.

$$MPC = \frac{\Delta C}{\Delta Y} \qquad MPS = \frac{\Delta S}{\Delta Y}$$

$$MPT = \frac{\Delta T}{\Delta Y} \qquad MPM = \frac{\Delta M}{\Delta Y}$$

$$MRL = MPS + MPT + MPM \qquad MPC + MRL = 1$$

Any increase in government spending on public goods and services translates into an increase in income for someone in the country. For example, if the UK government were to increase its spending on the National Health Service (NHS), this may lead to higher incomes for healthcare professionals, contractors who build new hospitals and manufacturers of medical equipment. The increase in household income from the government's purchase of healthcare goods and services would enable British households to increase their private consumption, savings and import spending. The initial increase in government spending is thus multiplied through further increases in consumption by the recipients of the new government spending.

The government spending multiplier (k) indicates to policymakers the ultimate effect a particular increase in government spending will have on the level of AD in the economy. It is calculated using the following equation:

$$k = \frac{1}{(1 - MPC)}$$

or

$$k = \frac{1}{MRL}$$

The larger the proportion of new income that households spend on domestically produced goods and services (the MPC), the larger the multiplier effect of an increase in government spending.

The implication for policymakers, therefore, is that to achieve a particular increase in the nation's GDP, government spending must only increase by a proportion of the desired change in total spending. For example, if a government wishes to increase AD to a level that

would result in a £200 billion increase in GDP, it would not have to increase government spending by the full £200 billion.

Let's assume that 60% of an increase in household income is used to consume domestic output by households and 40% is used to buy imports and put towards savings. The nation's MPC is therefore 0.6 and its MRL is 0.4. The spending multiplier and thus required increase in government spending can be determined using the formula above.

$$k = \frac{1}{1 - 0.6} = \frac{1}{0.4} = 2.5$$

With a marginal propensity to consume of 0.6, the spending multiplier equals 2.5. With this in mind, we can determine just how large an increase in government spending (ΔG) is needed to achieve a total increase in GDP of £200 billion.

$$\Delta G = \frac{\text{desired } \Delta GDP}{k} = \frac{200 \text{ billion}}{2.5} = 80 \text{ billion}$$

A desired change in GDP of £200 billion requires a change in government spending of only £80 billion. The £80 billion increase in national income of the nation will lead to an increase in AD that is 2.5 times as large. This is achieved through further rounds of consumption by households and investment by firms, which earn income from the government and then consume more British goods and services with a proportion of their increased income.

Through the multiplier effect, a fiscal policy involving an increase in government spending is multiplied throughout the economy, increasing the nation's total income beyond the initial increase in spending. Figure 17.6 shows the concept of the multiplier effect of an increase in government spending. The initial increase in spending of £80 billion results in an increase in aggregate GDP of £200 billion due to the multiplier effect.

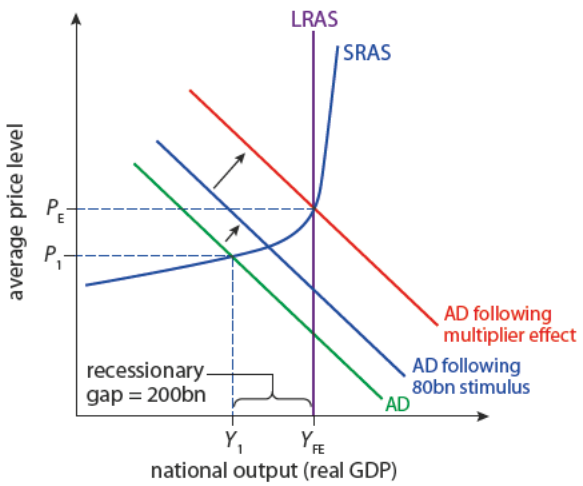


Figure 17.6
The multiplier effect: an increase in government spending leads to a larger increase in overall demand.

The multiplier could also work in reverse. In theory, a decrease in government spending by a particular amount also has a multiplier effect across the economy, also determined by the households MPC and the MRL. The decrease in household income resulting from a decrease in government expenditures will impact the level of consumption, savings, taxes and the amount of imports purchased. Therefore, a government spending cut ultimately impacts GDP by a greater amount than the reduction in government expenditures itself.

The multiplier effect is that any change in government spending will have a larger ultimate effect on the nation's GDP as the resulting change in household income leads to further changes in consumption and investment in the economy. The size of the multiplier effect depends on the government spending multiplier (k), which is a function of the nation's marginal propensity to consume.

$$k = \frac{1}{(1 - \text{MPC})}$$

To access Worksheet 17.1 on the spending multiplier in the US, please visit www.pearsonbacconline.com and follow the onscreen instructions.

To learn more about the government spending multiplier, visit www.pearsonhotlinks.com, enter the title or ISBN of this book and select weblink 17.9.

HL EXERCISES

3 In country X, at the current level of national income, the marginal propensity to consume is 0.6. The economy is currently experiencing a recessionary gap of $60 billion.
   - **a** Calculate the size of the spending multiplier.
   - **b** Calculate the amount of new government spending that would be needed to achieve an increase in income of $60 billion.

4 Would a cut in taxes of the same amount as you identified in 3b result in the same increase in national income as the increase in government spending of that amount? Why or why not?

5 Now assume the economy is producing at a level of output in which it is experiencing inflation of 10%. The inflationary gap is estimated at $20 billion. Assuming the same MPC, how much of a decrease in government spending is needed to stabilize inflation and return the economy to its full employment level?

17.5 Evaluation of fiscal policy

Learning outcomes
- Evaluate the effectiveness of fiscal policy through consideration of factors including the ability to target sectors of the economy, the direct impact on aggregate demand, the effectiveness of promoting economic activity in a recession, time lags, political constraints, crowding-out, and the inability to deal with supply-side causes of instability.

Government spending *vs* tax cuts

A reduction in taxes of a particular amount is less effective at increasing national income than an increase in government spending of the same amount. To understand why, we must examine the process through which a tax cut affects the level of private spending in a nation.

If the UK government had responded to the £200 billion recessionary gap shown above by cutting taxes by £80 billion rather than by increasing government spending by that amount, then the increase in AD would have been less than £200 billion.

Here's why. An increase in government spending is a direct injection into the circular flow of income, whereas a tax cut is an indirect injection because households are able to determine precisely how much of it ends up being spent on domestic output, thereby contributing to national income, and how much is saved, used to buy imports or goes towards taxes.

Suppose the UK government had chosen to cut taxes by £80 billion and not changed the level of government spending. The tax cut would have increased household income by £80 billion. Based on an MPC of 0.6, only 60% of the £80 billion (£48 billion) would have turned into new spending in the economy; 40% would immediately have gone into savings or towards the purchase of imports – that is, would have leaked from the circular flow.

Essentially, the size of the actual stimulus is lower because it is not directly spent in the economy by the British government; it is indirectly injected through households who

choose to save or buy imports with £32 billion of the government's £80 billion tax cut. The result is a smaller overall increase in GDP – only £120 billion (£48 billion of new spending multiplied by the multiplier of 2.5), leaving the recessionary gap of £200 billion only partially filled and the economy still in a recession.

Given the direct effect government spending has on AD, increasing government spending during a recession is more likely to stimulate economic activity than cutting taxes by the same amount. Both an increase in government spending and a decrease in taxes during a recession require the government to borrow money and increase its budget deficit. Therefore, increasing government spending is more desirable economically than decreasing taxes, since it requires the government to borrow a smaller amount to achieve the same increase in GDP.

The government will get a greater stimulus (more bang for its buck) by increasing spending than by cutting taxes to fill a recessionary gap and move the economy towards its full-employment level during a recession. However, in most cases (including America's ARRA fiscal stimulus package) both tax cuts and spending increases are used to fight recessions. Politically, of course, a tax cut is often a more desirable policy; the contradicting goals of politics and economics are explored later in this chapter.

Strengths and weaknesses of fiscal policy

The above analysis does not take into account the possible adverse effect that increased government borrowing might have on the level of private spending in the economy. It may be that a fiscal stimulus package financed by an increase in government borrowing could drive up the interest rates faced by households and firms in the private sector.

The crowding-out effect

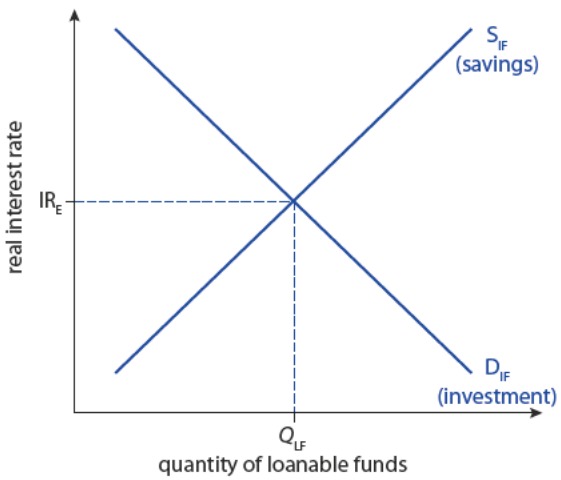
The term 'crowding-out effect' refers to the effect on private consumption and investment of a deficit-financed increase in government spending that leads to an increase in interest rates. Any increase in AD intended through fiscal stimulus may be crowded out by a simultaneous decrease in consumption and investment.

To understand the effect that fiscal policy actions have on the level of private consumption, investment and net exports, it is useful to introduce a new diagram into our analysis. A nation's loanable funds market is a hypothetical market that represents the money in commercial banks that is available to be loaned out to firms and households to finance private investment and consumption. The price of loanable funds is the real interest rate; the loanable funds market therefore illustrates the relationships between real returns on savings and real price of borrowing and the private sector's willingness to save and invest. The supply curve represents savings and the demand curve represents investment (Figure 17.7).

Households respond to a higher real interest rate by increasing savings because the return on savings is greater; hence there exists a direct relationship between real interest rate and supply of loanable funds. At lower real interest rates, households and firms are less inclined to save and more inclined to borrow and spend, so the demand for loanable funds reflects an inverse relationship between

To learn more about the loanable funds market, visit www.pearsonhotlinks.com, enter the title or ISBN of this book and select weblink 17.10.

Figure 17.7
The loanable funds market.



quantity demanded and the real interest rate. At higher interest rates, households prefer to delay their spending and increase their savings, since the opportunity cost of spending is higher.

A bond is a certificate of debt issued by a government (the borrower) to an investor (the lender) to provide the government with external funds to finance current expenditures. When a government borrows in order to finance a budget deficit, it must increase the interest rates on its bonds in order to attract more lenders. Investors respond to the higher rates of return on government bonds by taking money out of commercial banks (represented by the loanable funds market) and buying government bonds, thereby lending money to the government. Banks also lend out less of their excess reserves to private borrowers and instead purchase government bonds where their investment is relatively secure and now earns higher interest.

As households, firms and banks buy the newly issued government bonds, the supply of private loanable funds decreases. The decrease in money available to the private sector drives up interest rates as funds are directed towards the public sector. The government is able to finance its budget deficit, but reduced funds are now available to the private sector for consumption and investment. Private consumption and investment is thus crowded out by public-sector borrowing (Figure 17.8).

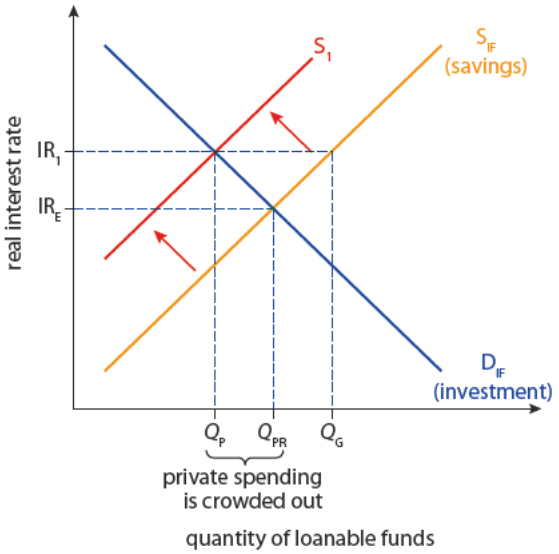


Figure 17.8
Crowding-out in the loanable funds market: higher interest rates on government bonds decreases the supply of funds available to the private sector, driving up interest rates.

In Figure 17.8, before the government increased its deficit, private borrowing for investment and consumption was at Q_{PR}. As the interest rate on government bonds increases, individuals buy bonds and the supply of loanable funds decreases. At the higher real interest rates fewer funds are demanded by the private sector (Q_{PR}), but more are supplied (Q_G). The difference between Q_P and Q_G represents the increase in government borrowing. The decrease from Q_{PR} to Q_P represents the fall in private investment and consumption resulting from higher real interest rates in the economy.

Figure 17.9 shows the effect that crowding-out has on AD following a deficit-financed fiscal stimulus package. The economy started in recession at AD, Y_1 and P_1. The increase in government spending was intended to increase AD to AD_1 and return the economy to its full-employment level. However, due to crowding-out, private spending falls while public sector spending increases, resulting in a shift to the left back to AD_2. The end result is stronger AD than before, but the economy has not achieved its full-employment level of output.

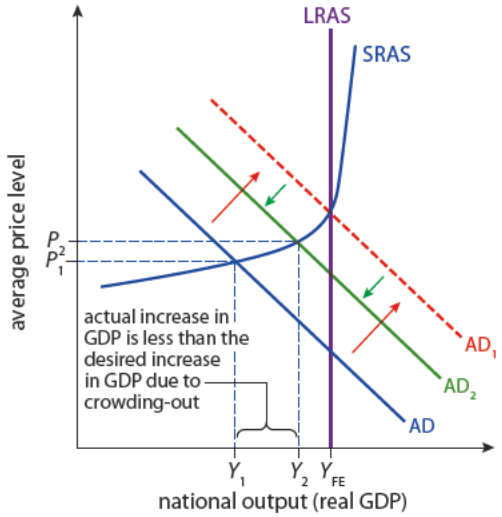


Figure 17.9
Crowding-out in the AD/AS model: The increase in AD resulting from a deficit-financed fiscal stimulus may be smaller due to the crowding-out of private investment.

The crowding-out effect refers to the possible effect that a government's deficit-financed fiscal policy may have on real interest faced by the private sector. The decrease in the supply of private loanable funds resulting from increased government borrowing may drive up private interest rates and crowd out private investment, reducing the desired expansionary effect of the government's fiscal policy.

Another look at crowding-out: the recession of 2008–09

Neo-classical economists criticize the Keynesian argument for government deficit spending during a recession by claiming that crowding-out will offset the expansionary effects of a tax cut combined with an increase in government spending. The possible fall in private investment resulting from higher interest rates may undermine a modern economy's long-run growth potential. It is the private sector, argue the neo-classicals, not the public sector that is the engine of growth in today's economies. Policy actions that direct society's scarce financial, human and capital resources away from the private sector and towards the public sector threaten to undermine the engine of economic growth in market economies – free enterprise. The possibility of crowding-out points to a major shortcoming in the use of expansionary fiscal policy to combat a recession.

Crowding-out may not occur in a nation during a deep recession such as that experienced by the US, Europe and other countries between 2008 and 2009. Due primarily to President Obama's ARRA fiscal stimulus package, the US federal budget deficit for 2009 reached an unprecedented $1.4 trillion, increasing America's national debt from $11 trillion to over $12.4 trillion in less than a year. The large increase in government borrowing needed to finance this deficit, it might be expected, would necessitate substantial increases in the interest rate on US government bonds and would therefore direct funds away from the private sector and crowd out private consumption and investment. However, data seem to show that crowding out did not occur during the recession of 2008–09 (Figure 17.10).

To access Worksheet 17.2 on the fiscal stimulus in the US, please visit www.pearsonbacconline.com and follow the onscreen instructions.

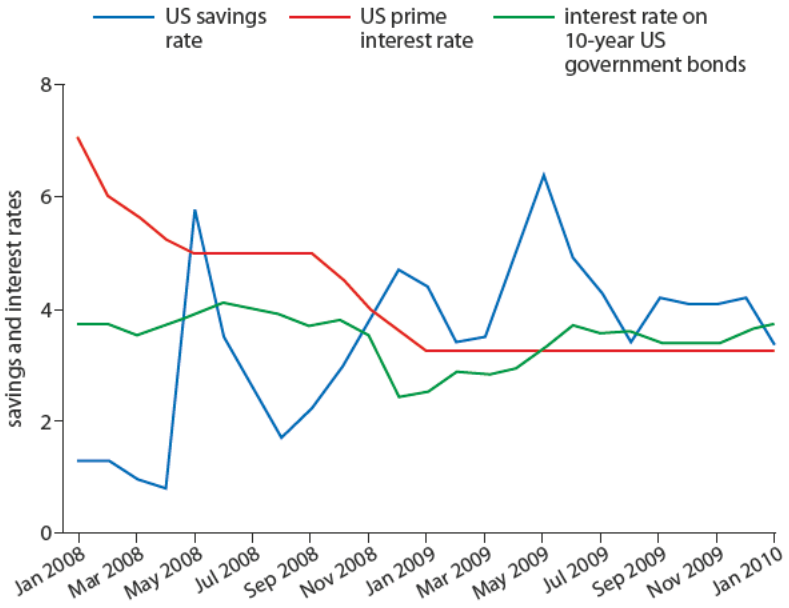
Figure 17.10 (overleaf) shows the US savings rate, the prime interest rate, and the interest rate on US government bonds from January 2008 to January 1020. When examined closely, these data refute the view that during a deep recession deficit-financed government spending will drive up private interest rates and crowd out private spending in the economy.

Between early 2008 and late 2009, the US savings rate rose from as low as 0.8% to as high as 6.4%. This represents a massive increase in the supply of loanable funds, as households' willingness to provide capital to the private banking sector increased during the period of economic uncertainty and low consumer confidence.

Prime interest rate is the rate that commercial banks charge their most credit-worthy borrowers. It is an indicator of the level of interest rates charged to all other borrowers in an economy.

Over the same period, the prime interest rate in the US actually decreased from over 6% to 3.25%. Even as the US budget deficit reached an all-time high and the national debt ballooned to $12.4 trillion, interest rates on government bonds remained steady and even decreased at times throughout the worst of the recession in the US. If the US stimulus package had been causing crowding-out, as the neo-classical argument suggests it should,

Figure 17.10
US savings rates and interest rates 2008–10.



then both the interest on US government bonds and the prime interest rates charged to private borrowers would have risen throughout 2008 and 2009.

The fact that interest rates remained steady or fell indicates that there was actually a surplus of savings in the US during the worst of the 2008–09 recession. When the government increased its issuance of bonds, it was able to borrow from the public at extremely low interest rates. While funds were directed away from the private sector towards the government, there was little to no effect on the level of private spending, which was already depressed due to low consumer and investor confidence. In other words, there was such low demand for loanable funds and such a great supply before the ARRA stimulus package that there was no crowding-out of private spending as a result of the deficit-financed fiscal stimulus.

The US experiment with fiscal policy during the 2008–09 recession demonstrated that during a *deep* recession, crowding-out of private spending is unlikely. Policymakers should not, however, ignore the possibility of crowding-out when employing fiscal policy during a *mild* recession.

If an economy is producing at or near full employment, with resources employed and private demand for loanable funds high, it is more likely that a deficit-financed increase in government spending will drive up interest rates and crowd out interest-sensitive private spending. With this in mind, it can be argued that large fiscal expansions should be reserved for situations in which an economy is experiencing high levels of unemployment, deflation, and a general collapse of consumer and investor confidence.

To learn more about the crowding-out effect, visit www.pearsonhotlinks.com, enter the title or ISBN of this book and select weblink 17.11.

For an economy producing at or near full employment, supply-side policies such as lower corporate taxes, deregulation of the private sector, lower minimum wages and reducing the power of labour unions are likely to be more effective at reducing unemployment, as these policies lower firms' costs of production and encourage a greater level of output and employment (these policies are explored in Chapter 19).

The net export effect

During a period of rising unemployment and weak demand, a tax cut and increase in government spending financed by increased government borrowing may increase interest

rates in the economy and make the country's currency more attractive to foreign investors who wish to buy the government's bonds. Demand for the currency rises, increasing the exchange rate against trading nations' currencies.

Furthermore, as AD grows in response to more domestic government spending, there is upward pressure on inflation as well as greater disposable incomes among households. Rising incomes and a stronger currency lead to an increase in demand for imports from abroad, and higher domestic prices and a higher exchange rate reduce demand for the country's goods among trading partners. Net exports may, therefore, fall following a deficit-financed increase in government spending. The net export effect of an expansionary fiscal policy counteracts the desired effect of the policy itself.

During a period of demand-pull inflation, a government may raise personal income taxes or cut back on its own expenditures to reduce overall demand and bring the economy closer to full employment. Such a policy reduces the government's need to borrow in the bond market, which brings down the interest rates on government debt. The nation's supply of loanable funds increases (this could be viewed as crowding-out in reverse). Interest rates in the economy fall, which in turn reduces foreign demand for the nation's currency, lowering the nation's exchange rate compared to that of trading partners.

Furthermore, a decrease in the rate of inflation resulting from less overall demand makes the nation's exports more attractive to the rest of the world. As imports fall and exports rise, the net export effect of contractionary fiscal policy counteracts the desired effect of the policy itself.

The net export effect presents another possible shortcoming in the use of fiscal policies. The increase in AD desired by a fiscal stimulus could be muted by the fall in net exports and rise in imports that result from higher interest rates and a stronger domestic currency. The increase in net exports resulting from a weaker currency and lower interest rates following a fiscal contraction will reduce the contractionary effects of the fiscal policy action.

The higher interest rates needed to attract lenders to finance an expansionary fiscal policy could lead to an appreciation of the nation's currency, reducing demand for its exports abroad. The fall in net exports may offset the desired expansionary effect of the fiscal policy.

During a contractionary fiscal policy, lower interest rates on domestic government bonds reduce demand for the currency, causing it to weaken and increasing demand for exports. The increase in net exports may offset the desired contractionary effect of the fiscal policy.

Time lags in fiscal policy

A change in a nation's discretionary fiscal policy often requires months of deliberation by those in government. The administrative lag of discretionary fiscal policy (the time between when the policy action is most needed and when it actually occurs) can be months or even years. Fiscal policies may also suffer from recognition lag (the time between the onset of an inflationary period or rising unemployment and the recognition by policymakers that it is actually happening).

Finally, the impact lag of fiscal policy may render it ineffective at promoting macroeconomic goals in the short run. Tax cuts and increases in government spending often take months or even years to actually begin contributing to the level of economic activity in a nation. An economy in recession may remain in recession long after government funds have been handed out and tax cuts implemented. The various lags explained here present possible shortcomings of Keynesian style demand-management through fiscal policy tools.

To access Worksheet 17.3 on stimulus and austerity, please visit www.pearsonbacconline.com and follow the onscreen instructions.

Political influence over fiscal policy

Another shortcoming of fiscal policy is the fact that policy decisions rest in the hands of politicians whose incentives may not lie entirely in the best interest of the nation's economy. Politicians may promote and push through fiscal policies that are popular among voters, even if they are economically irresponsible. Political hijacking of fiscal policies may lead to political business cycles in which total spending in the economy

Discuss the view that economic policy may be motivated more by the selfish political objectives of politicians than by the macroeconomic objectives of full employment, economic growth and price stability.

fluctuates depending on politicians' desire to enact popular tax breaks and government handouts even when an economy is close to or at full employment. The goal of such irresponsible policies, of course, is to maintain political support and earn votes in the next national election, while the effect is often prolonged periods of expansion and inflation.

On the other hand, despite the fact that government spending multipliers are known to be greater than tax multipliers, governments often turn to tax breaks during recessions before resorting to increases in government spending. For instance, during the last year of George W Bush's presidency (2008), the US officially entered its deepest recession since the 1930s. In response, President Bush enacted a fiscal stimulus package consisting entirely of a $168 billion tax rebate to the American people. By the end of the year, the US was deeper in recession. Bush's plan included no increases in government spending, a policy decision most likely rooted in the 'small government' political ideology of his Republican party rather than in basic economic theories.

In one sense, the imposition of taxes by government on individuals amounts to a restriction of individual freedom. How can we know when such government interference in individual freedom is justified?

Fiscal policy is not insulated from the political agendas of the individuals who form a nation's government. Policymakers must undertake implementation of fiscal policy cautiously and all possible effects should be considered.

Monetary policy, an entirely different category of macroeconomic policy, is explored in Chapter 18. Monetary policy is, in most nations, the responsibility of an independent central bank, and so is more insulated from political pressures. It presents macroeconomic policymakers with a powerful and nimble tool for affecting the level of output, prices and employment in a nation.

To access Quiz 17, an interactive, multiple-choice quiz on this chapter, please visit www.pearsonbacconline.com and follow the onscreen instructions.

PRACTICE QUESTIONS

1 **a** How might an accurate value for the spending multiplier aid a government in setting fiscal policy? (10 marks) [AO2]

b Evaluate the view that a tax cut is more effective at stimulating aggregate demand than an increase in government spending. (15 marks) [AO3]

2 **a** What macroeconomic policies would a government adopt if it wished to reduce aggregate demand in an economy? (10 marks) [AO1]

b Should a government attempt to manage the level of aggregate demand to influence unemployment and inflation rates? (15 marks) [AO3]

3 **a** Explain why an increase in government spending not accompanied by an increase in taxes may lead to a fall in private sector investment. (10 marks) [AO2]

b Evaluate the likelihood that this will happen during a demand-deficient recession. (15 marks) [AO4]

4 **a** What are the main macroeconomic objectives of government? (10 marks) [AO1]

b Assume the government chooses to pursue one of these objectives. Evaluate the possible consequences for the other objectives. (15) [AO3]