Chapter 12: Government Spending, Taxes, and Fiscal Policy

Learning Objectives

After studying this chapter, you should be able to

12.1 Discuss the importance of government spending in an economy

12.2 Explain how government spending affects the equilibrium level of income

12.3 Explain how taxes affect the equilibrium level of income

12.4 Discuss equilibrium income with government spending and taxes

12.5 Identify a budget deficit, a budget surplus, and a balanced budget

12.6 Explain the effect of a balanced budget change in spending on equilibrium income

12.7 Describe the automatic stabilizers and how they work

12.8 Explain how discretionary fiscal policy can be used to close full-employment gaps

12.9 Discuss the pros and cons of using government spending and taxes to control macroeconomic activity

12.10 Discuss the significance of the full-employment budget

12.11 Explain the supply-side considerations of fiscal policy

12.12 Discuss the total effects of fiscal policy

12.13 Discuss the limitations of fiscal policy

12.14 Discuss Canada's response to the 2008–2009 recession

Assess Your Knowledge

1. What is fiscal policy?
2. Who conducts fiscal policy?

3. What effect does an increase in government spending have on the equilibrium level of income?

4. What effect does an increase in taxes have on the equilibrium level of income?

5. What is a budget deficit?

The Importance of Government Spending

LO 12.1 Discuss the importance of government spending in an economy

Government Spending and Fiscal Policy

We now consider the **government purchases component (G)** of the aggregate expenditure equation:

$$\mathbf{AE = C + I + G + (X - M).}$$

Fiscal policy refers to the use of government spending and taxation to influence economic activity. Government purchases directly increase aggregate expenditure and are a central instrument of fiscal policy.

Through its control over spending and taxation, the government can alter total demand in the economy. An increase in government purchases raises aggregate expenditure, while a reduction lowers it. Similarly, tax policy affects disposable income and thereby changes consumption and saving.

Government purchases are therefore a direct and powerful tool of fiscal intervention. Adjusting either G or T (taxes) allows the state to influence national income, stabilize fluctuations, and close output gaps.

fiscal policy the use of government spending and taxes to regulate economic activity

The government's budget is the main vehicle through which fiscal policy is conducted; hence, some people refer to fiscal policy as *budgetary policy*.

Although we speak of *the* government in connection with fiscal policy, we must note that all levels of government conduct fiscal policy.

How important is government spending in aggregate expenditure?

Table 11.1 demonstrates the scale and trajectory of government purchases relative to overall economic activity between 2018 and 2023. In nominal terms, government purchases rose steadily—from $451.7 billion in 2018 to $610.0 billion in 2023—reflecting expanded spending on health care, education, and emergency transfers during the COVID-19 pandemic. Most pandemic-related expenditures ended in 2022, but overall government purchases remained elevated because of ongoing commitments to public services, demographic pressures, and inflation-linked cost increases.

Table 12.1

Table 12.1 Government Spending as a Percentage of Aggregate Expenditure2018—2023

(in billions of current dollars and %)

Year	GDP	Government	Share
2018	1,869.80	451.7	24.1
2019	1,939.00	475.2	24.5
2020	1,859.70	514.8	27.7
2021	2,025.00	543	26.8
2022	2,240.40	581	25.9
2023	2,353.90	610	25.9

Source: Statistics Canada, Gross domestic product, expenditure-based, Canada, annual

The ratio of government purchases to GDP remained around **24%–27%**, peaking in **2020 at 27.7%**. This spike corresponds to pandemic-related fiscal expansion, when governments increased spending to stabilize incomes and sustain public services. Although GDP rebounded after 2020, government spending remained elevated, suggesting persistent structural commitments—particularly in health care and social programs.

By **2023**, government purchases represented **25.9% of GDP**, above the pre-pandemic level of **24.1% in 2018**. This sustained share underscores the central role of the public sector in Canada's mixed economy. While critics argue that government spending distorts market efficiency, the data reflect broad-based public demand for government-provided services.

As of **2024**, government current purchases still account for approximately **21% of aggregate expenditure** (Statistics Canada, Table 36-10-0104-01), though this narrower measure excludes transfers and capital outlays. Even when restricted to current purchases, the public sector remains a foundational component of national expenditure.

Government Spending and Equilibrium Income

LO 12.2 Explain how government spending affects the equilibrium level of income

Equilibrium Condition

Autonomous Government Spending and Income Equilibrium

We assume that the expenditures of all levels of government—federal, provincial or territorial, and local—are autonomous, meaning they do not depend on the level of national income. Thus, changes in income will not affect the level of government spending. Under the assumption that there are neither exports nor imports, aggregate expenditure (AE) consists of consumer spending, investment spending, and government spending.

Reading Comprehension

1. Formulate a definition of fiscal policy.
2. Why do some people refer to fiscal policy as budgetary policy?
3. "In Canada, only the federal government conducts fiscal policy." Is this true or false? Why?

If intended AE (C + I + G) exceeds aggregate output (AO or Y), there will be either lines of unsatisfied customers or an unplanned reduction in inventories of previously produced goods. Either outcome signals firms to increase production; higher production raises income. Conversely, if desired AE (C + I + G) is less than aggregate output, inventories will accumulate beyond planned levels. This excess prompts firms to cut production and reduces income.

Equilibrium income occurs when intended AE (C + I + G) equals aggregate output. At this point, there is no incentive to change production because the spending plans of households, firms, and government match the production decisions of firms.

In a closed economy with government spending, equilibrium income is achieved when $Y = C + I + G$.

Effect of Government Spending on Equilibrium Income

Table 12.2 illustrates how government spending shifts the equilibrium level of income. Government spending is assumed to be $20 million at each income level.

Without government spending, the equilibrium income is $100 million, where aggregate output equals the sum of consumption and investment (Y = C + I).

Table 12,2

Table 12.2

Government Spending and Equilibrium Income

Income	*C*	*I*	*G*	*AE*
50	55	20	20	95
60	60	20	20	100
70	65	20	20	105
80	70	20	20	110
90	75	20	20	115
100	80	20	20	120
110	85	20	20	125
120	90	20	20	130
130	95	20	20	135
140	100	20	20	140

Adding government spending increases desired aggregate expenditure to $120 million. Because AE now exceeds output at $100 million, firms expand production. Income continues to rise until it reaches $140 million, where planned spending equals actual output. The inclusion of government spending shifts equilibrium upward by increasing total demand.

Graphical Representation of Government Spending and Equilibrium Income

Figure 12.1 shows how government spending shifts equilibrium income using data from Table 12.2. The consumption curve and the C + I line represent consumption and investment spending. The C + I + G line adds government spending to desired aggregate expenditure.

At an income level of **$**100 million, the C + I + G line lies above the 45-degree line, indicating that desired spending exceeds output. This gap prompts firms to increase production, which raises income. At $160 million, the C + I + G line lies below the 45-degree line. This excess output leads firms to cut production, which lowers income.

Equilibrium occurs at $140 million, where the C + I + G line intersects the 45-degree line. At this point, intended aggregate expenditure equals aggregate output—the condition for macroeconomic equilibrium.

In a closed economy with government spending, the equilibrium level of income occurs where the *C* + *I* + *G* line intersects the 45-degree line.

Impact of Increased Government Spending on Equilibrium Income

An increase in government spending acts as an injection into the economy. Because G is part of aggregate expenditure, a rise in G raises total spending, assuming other factors remain constant.

This additional spending shifts the C + I + G line upward in the aggregate expenditure–aggregate output diagram. The new intersection point with the 45-degree line occurs at a higher level of income, indicating that equilibrium income has increased. Thus, higher government spending produces higher national income through a multiplier effect.

Figure 12.1 The Effect of Government Spending on Equilibrium Income

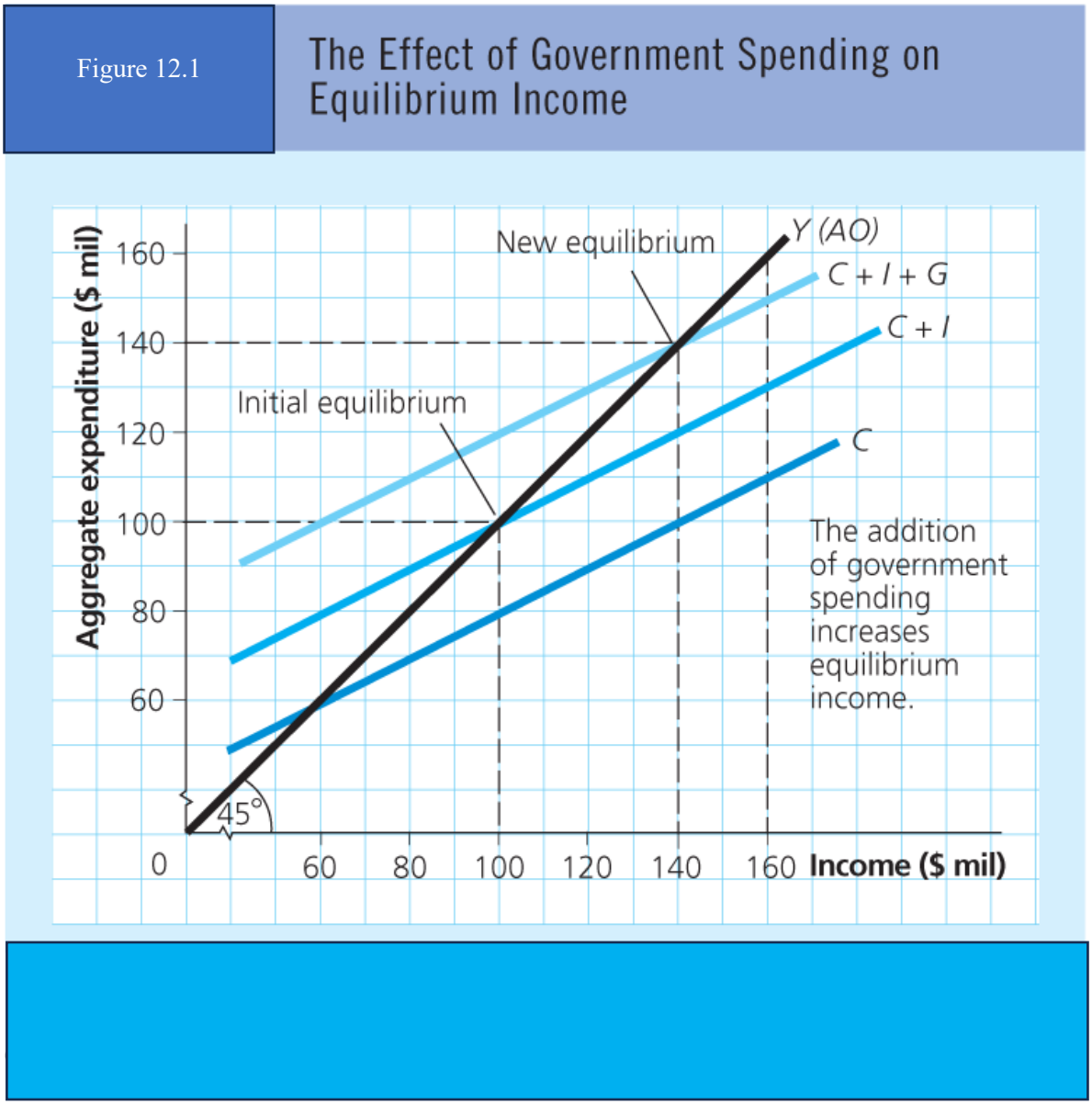
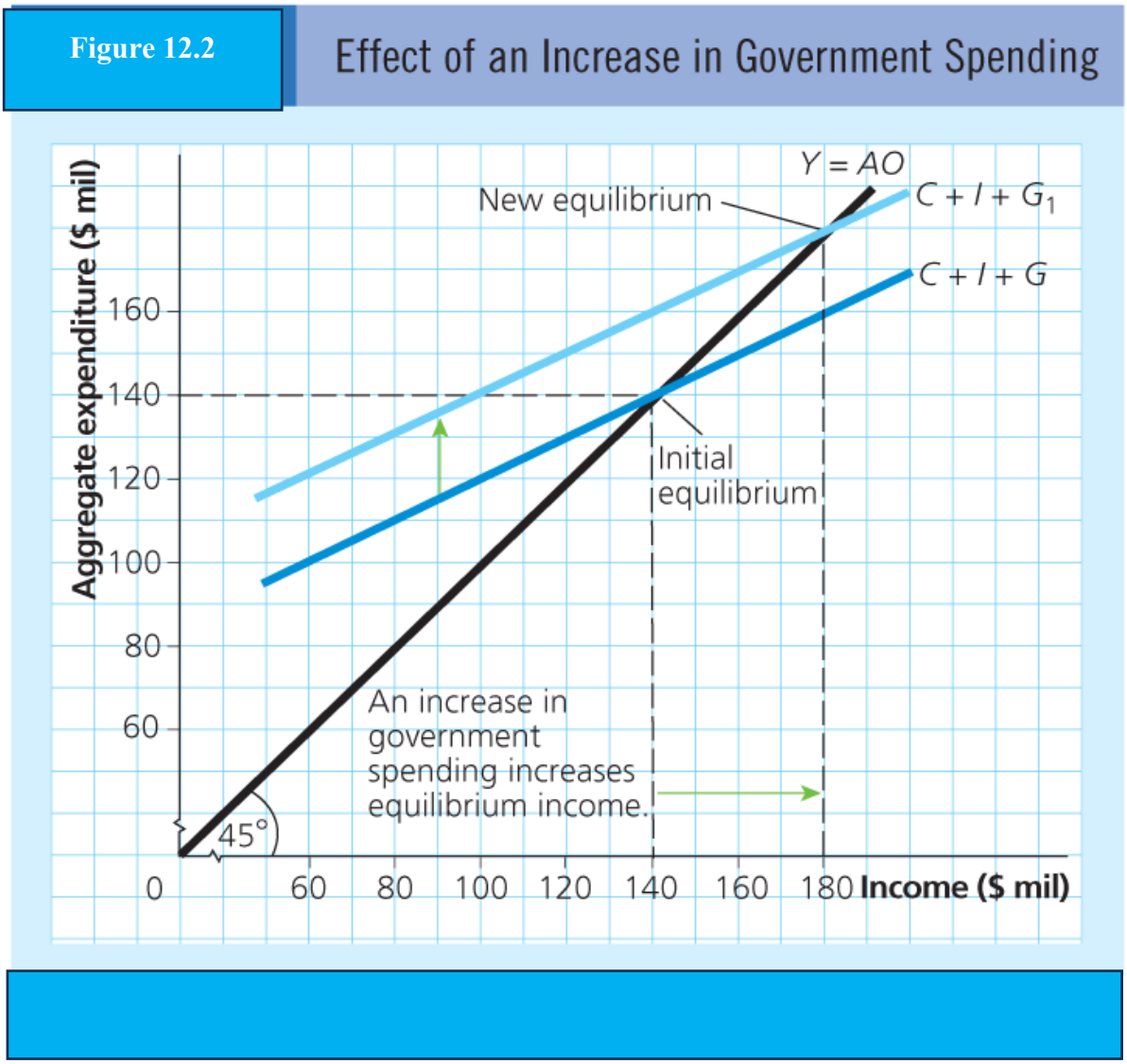


Figure 12.2 Effect of an Increase in Government Spending



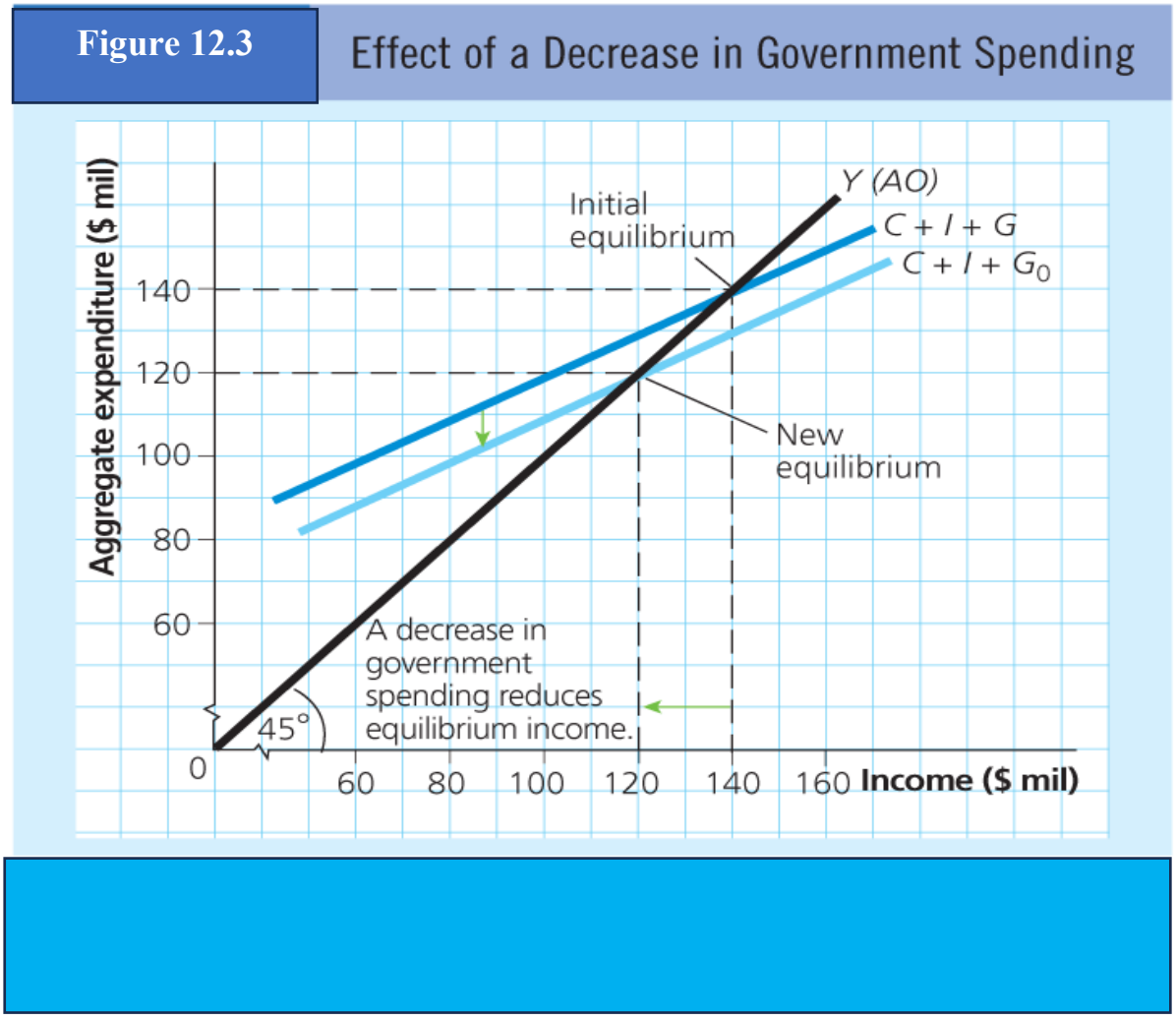
This equilibrium condition is illustrated in Figure 12.2. Now suppose government spending increases from $20 million to $40 million. This $20 million injection shifts the aggregate expenditure line from C + I + G to C + I + G1. As a result, equilibrium income rises from $140 million to $180 million. The upward shift in the expenditure line reflects the multiplier effect of higher government spending on total output.

An increase in government spending, other things being equal, increases equilibrium income.

Effect of Reduced Government Spending on Equilibrium Income

A reduction in government spending lowers aggregate expenditure, shifting the C + I + G line downward. This results in a lower intersection point with the 45-degree line, indicating a fall in equilibrium income. Figure 12.3 illustrates this downward shift and its effect on national income.

Figure 12.3 Effect of a Decrease in Government Spending



Effect of a Decrease in Government Spending

The initial equilibrium level of income is $140 million where the C + I + G line intersects the 45-degree line. Now, suppose that government spending falls from its initial level of $20 million to $10 million. The

aggregate expenditure line shifts downward from C + I + G to C + I + G0. This $10 million reduction leads to a decline in equilibrium income from $140 million to $120 million.

A reduction in government spending reduces the equilibrium level of income.

The Multiplier Effect of Government Spending

The change in the equilibrium level of income resulting from the change in government spending is greater than the change in government spending. This occurs because of the multiplier effect.

You will recall that the simple multiplier for a change in investment spending is the reciprocal of the MPS. Based on the data in Table 12.2, a $20 million increase in government spending raises equilibrium income by $40 million. Similarly, a $10 million reduction causes a $20 million decrease in equilibrium income.

In both cases, the government spending multiplier is 2. A quick look back at Table 12.2 will reveal that the MPC is 0.5. The MPS is therefore 1 – 0.5 = 0.5. This results in an investment multiplier of 2. The government spending multiplier equals the investment multiplier because both are defined as the reciprocal of the MPS.

The government spending multiplier is the number by which a change in government spending is multiplied to arrive at the change in equilibrium income. It is the reciprocal of the MPS.

Reading Comprehension

1. Briefly explain why an increase in government spending, other things being equal, will increase the equilibrium level of income.
2. How might an increase in government spending affect firms' production decisions?
3. If the government spending multiplier is 2.5, what effect will an increase in government pending of $450 million have on the equilibrium level of income, other things being equal?

Taxation and the Equilibrium Level of Income

LO 12.3 Explain how taxes affect the equilibrium level of income

Taxation and Equilibrium Income

Until now, we have assumed an economy without taxes. To examine the role of taxation in income determination, we now introduce taxes into the analysis.

To isolate the effect of taxation, we assume government spending equals zero and adopt a lump-sum tax, which remains constant regardless of income level. This assumption simplifies the relationship between taxation and income.

Table 12.3

Taxation and Equilibrium Income ($ bil)

Income (*AO*)	Taxes	Yd	*C*	*I*	*AE*
50	20	30	45	10	55
60	20	40	50	10	60
70	20	50	55	10	65
80	20	60	60	10	70
90	20	70	65	10	75
100	20	80	70	10	80
110	20	90	75	10	85
120	20	100	80	10	90
130	20	110	85	10	95
140	20	120	90	10	100

A lump-sum tax reduces disposable income, the amount available for consumption and saving—by a fixed amount. As a result, aggregate expenditure falls at each level of income, shifting the AE curve downward. The economy reaches a new, lower equilibrium income, as total spending declines. The introduction of taxes, even without government purchases, therefore contracts equilibrium output by reducing consumer demand.

lump-sum tax a fixed tax that is independent of the level of income

Let us assume now that the amount of the tax is $20 million and that it is levied on personal income. If personal income is $150 million, the tax will be $20 million. If personal income is $250 million, the tax will still be $20 million. Because the tax remains unchanged at every income level, it reduces disposable income by a fixed amount and shifts the consumption schedule downward in parallel.

Effect of a Lump-Sum Tax on Equilibrium Income

The immediate effect of such a tax is to reduce disposable income. And because consumer spending depends on disposable income, the imposition of the tax will reduce consumer spending.

Table 12.4

Equilibrium Income without Taxation

($ Bil)

Income	*C*	*I*	*AE*
50	55	10	65
60	60	10	70
70	65	10	75
80	70	10	80
90	75	10	85

We can now examine how taxation affects equilibrium income using the data in Table 12.3. In Table 12.3, the equilibrium level of income occurs at $60 million where aggregate output (AO) equals intended aggregate expenditure (AE). Without the tax, disposable income would equal total income, and with an MPC of 0.5, consumption would rise by $10 million at each income level. This would raise the equilibrium income to $80 million, as shown in Table 12.4.

Thus, we see that the effect of the tax is to reduce the equilibrium level of income.

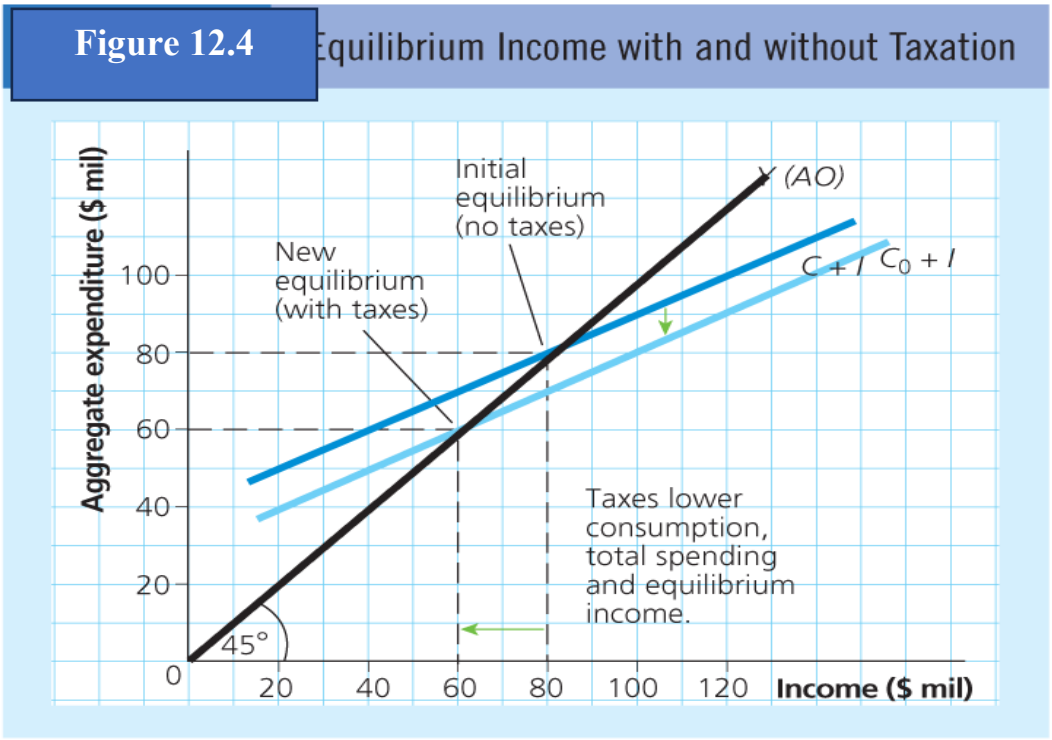
A tax reduces the equilibrium level of income.

Graphical Analysis of the Effect of Taxation on Income

The same conclusion can be illustrated graphically. Figure 12.4, based on the data in Tables 12.3 and 12.4, shows how a lump-sum tax affects equilibrium income. Initially, without taxation, the C + I line intersects the 45-degree line at $80 million, indicating equilibrium income. After imposing a $20 million lump-sum tax, disposable income falls, reducing consumption at each level of income. The aggregate expenditure curve shifts downward to C_0 + I. The new equilibrium occurs at $60 million, where this lower expenditure line intersects the 45-degree line.

This graphical result confirms that a lump-sum tax, by lowering disposable income, reduces equilibrium output through its impact on consumption.

Figure 12.4 Equilibrium Income with and without Taxation



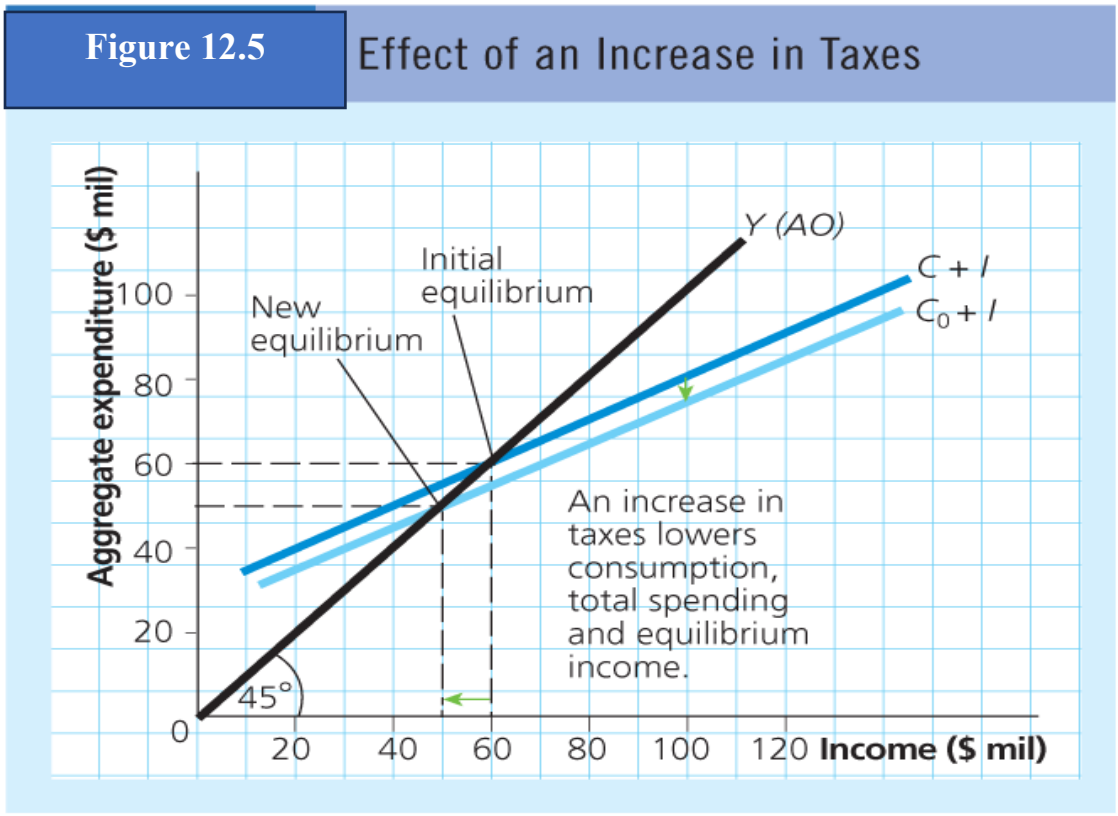
The Effect of an Increase in Taxes

What impact does a tax increase have on equilibrium income? Using the data from Table 12.3, the original equilibrium level of income is $60 million. Suppose the government raises taxes by $10 million, from $20 million to $30 million. This change reduces disposable income by the same amount.

Given a marginal propensity to consume (MPC) of 0.5, consumers reduce their spending by $5 million, while the remaining $5 million comes from lower saving. The fall in consumption shifts the C + I line downward to $C_0 + I$, as illustrated in Figure 12.5.

This downward shift in aggregate expenditure reduces the equilibrium level of income below the initial $60 million. The new intersection between the $C_0 + I$ line and the 45-degree line represents a lower income level—demonstrating how increased taxes, by reducing disposable income and consumption, contract overall demand and lower equilibrium output.

Figure 12.5 Effect of an Increase in Taxes



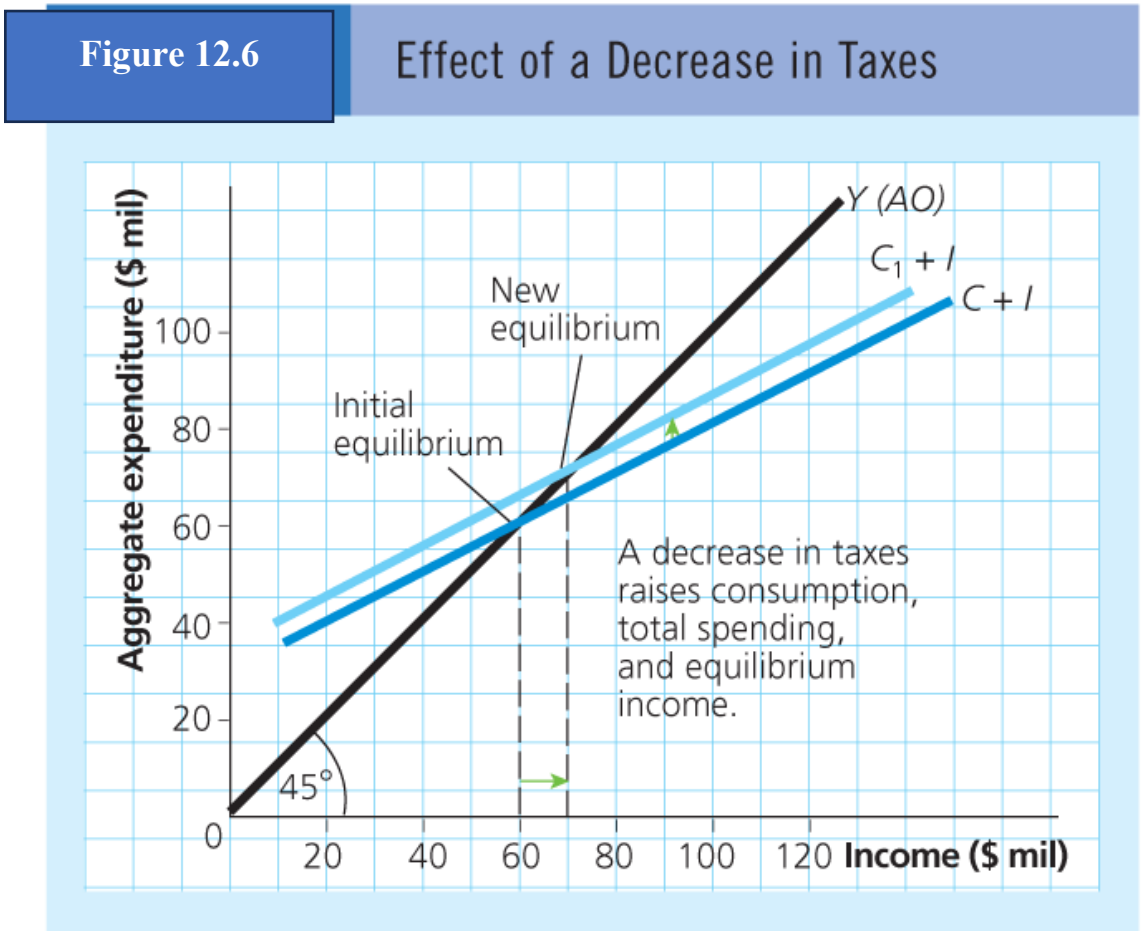
The equilibrium level of income falls from $60 million to $50 million. The conclusion is as follows:

An increase in taxes, other things being equal, reduces the equilibrium level of income.

The Effect of a Decrease in Taxes

A reduction in taxes raises disposable income, prompting households to increase consumption. This, in turn, boosts aggregate expenditure. Figure 12.6 illustrates this effect. Initially, equilibrium occurs at $60 million, where the C + I line intersects the 45-degree line. Now assume a $10 million tax cut.

Figure 12.6 Effect of a Decrease in Taxes



With a marginal propensity to consume (MPC) of 0.5, households spend an additional $5 million. This raises aggregate expenditure and shifts the curve upward to $C_1 + I$. The new intersection with the 45-degree line occurs at $70 million, the new equilibrium income. The tax cut increases output indirectly by expanding consumption, which amplifies total spending through the multiplier process.

Other things being equal, a decrease in taxes increases the equilibrium level of income.

Reading Comprehension

1. "A tax increase is contractionary." Explain.
2. How does the imposition of a lump-sum tax affect consumption and equilibrium income?
3. What is the effect of an income tax cut on consumption? aggregate expenditure? equilibrium level of income?

Equilibrium Income with Government Spending and Taxes

LO 12.4 Discuss equilibrium income with government spending and taxes

Combined Effect of Government Spending and Taxation

Previous sections examined government spending and taxation separately. Now, we analyze their combined impact using the data in Table 12.5. Assume the government spends $20 million and collects $20 million in lump-sum taxes. This means both fiscal actions are equal in magnitude but opposite in direction. We also assume that government spending remains autonomous, and taxes do not vary with income. Consumption and investment stay unchanged.

In this balanced budget case, aggregate expenditure (AE) equals aggregate output at an income level of $100 million, establishing equilibrium. At income levels above or below this point, AE and output diverge, leading firms to adjust production.

Even though taxation reduces disposable income and hence consumption, the full injection of government spending offsets this withdrawal. The net effect raises equilibrium income to the $100 million level, demonstrating the balanced budget multiplier, which equals **1**.

The Injections–Withdrawals (I—S) Approach

Equilibrium occurs when total injections equal total withdrawals.

Government spending injects money into the income–expenditure stream. For example, if the government funds highway construction, it increases the incomes of construction firms, suppliers, and workers involved in the project.

Taxes levied on household income reduce the funds available for consumption. As a result, taxes act as a withdrawal or leakage from the spending stream. Equilibrium income is reached when these injections—investment and government spending—are matched by withdrawals—saving and taxes.

Under our present assumption, the withdrawals are savings and taxes. The injections are investment and government spending. The equilibrium level of income occurs when the sum of the desired withdrawals equals the sum of desired injections. That is, when

$$S + T = I + G$$

Table 12.5 Equilibrium Income with Government Spending and Taxes ($ mil)

Total Income	Taxes	Disposable Income	*C*	*S*	*I*	*G*	*AE*
50	20	30	45	–15	10	20	75
60	20	40	50	–10	10	20	80
70	20	50	55	–5	10	20	85
80	20	60	60	0	10	20	90
90	20	70	65	5	10	20	95
100	20	80	70	10	10	20	100
110	20	90	75	15	10	20	105
120	20	100	80	20	10	20	110
130	20	110	85	25	10	20	115
140	20	120	90	30	10	20	120

From Table 12.5, we can see that the only level of income at which desired withdrawals (S + T) = desired injections (I + G) is $100 million. At a level of income of $120 million, for example, desired S + T = $40 million while desired I + G = $30 million. Since withdrawals exceed injections, income will decline.

Conversely, at a level of income of $90 million, desired injections (I + G) = $30 million, while desired

withdrawals (S + T) = $25 million. In this case, injections exceed withdrawals, so income will rise. The point where injections equal withdrawals—$100 million—is the equilibrium level of income.

> *In a closed economy with government spending and taxation, the equilibrium level of income occurs when the sum of investment and government spending equals the sum of saving and taxes.*

A graphical presentation of I-S approach

We can illustrate the injections–withdrawals (*J*–*W*) approach graphically. Figure 12.7 shows the *I* + *G* and *S* + *T* lines derived from the data in Table 12.5.

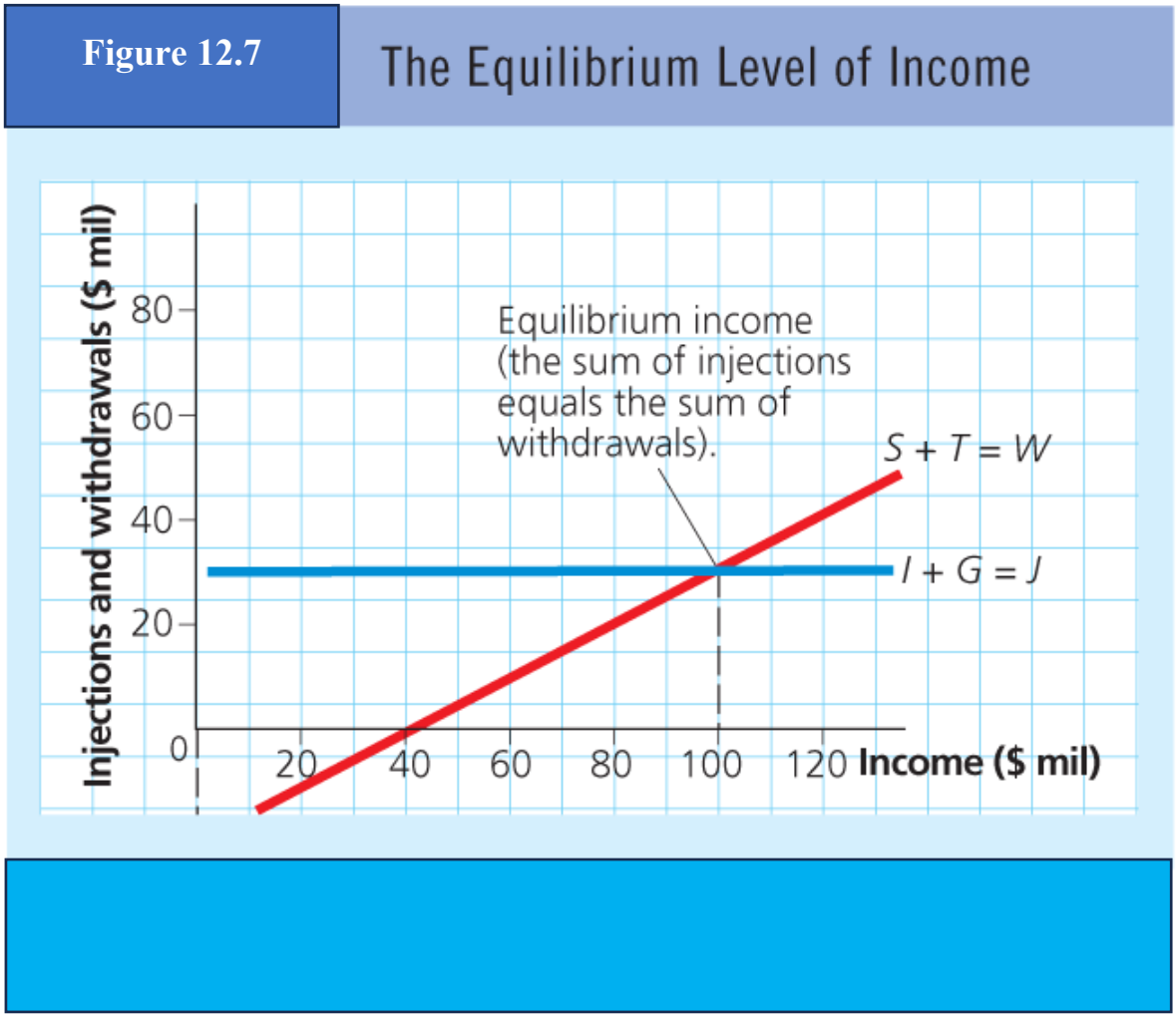
The injections (*I* + *G*) line intersects the withdrawals (*S* + *T*) line at a level of income of $100 million—the equilibrium level of income.

The intersection of the injections line and the withdrawals line determines the equilibrium level of income.

Effect of a Proportional Tax

Our analysis of the effects of taxes so far is based on the assumption of a lump-sum tax.
To move closer to actual fiscal systems, we now assume a proportional tax—one that varies directly with income. Let us assume that taxes are set at 20% of total income, as shown in Table 12.6. Under a proportional tax, tax revenue rises as income increases, which reduces the rate at which disposable

Figure 12.7 The Equilibrium Level of Income



income grows. This built-in response moderates changes in consumption and, therefore, flattens the slope of the aggregate expenditure line.

Pre-tax consumption is shown so that the proportional tax can be easily discerned. Column 1 shows that before the tax is imposed, total income (Y), personal income (PI), and disposable income (DI) are all equal. Column 2 shows desired consumption before the imposition of the tax. The consumption–income relation is similar to that assumed in earlier tables.

Column 3 introduces the proportional tax of 20% of total income. This tax reduces disposable income, as shown in column 4. Since consumption depends on disposable income, after-tax consumption—shown in column 5—is lower than pre-tax consumption. A comparison of columns 2 and 5 highlights the downward adjustment in spending due to taxation.

Table 12.6 The Effect of a Proportional Tax ($ mil)

Total Income (Y) = PI = DI (1)	Desired Pre-Tax Consumption (2)	Taxes (3)	After-Tax Disposable Income (4)	Desired After-Tax Consumption (5)
50	55	10	40	50
60	60	12	48	54
70	65	14	56	58
80	70	16	64	62
90	75	18	72	66
100	80	20	80	70
110	85	22	88	74
120	90	24	96	78
130	95	26	104	82
140	100	28	112	86

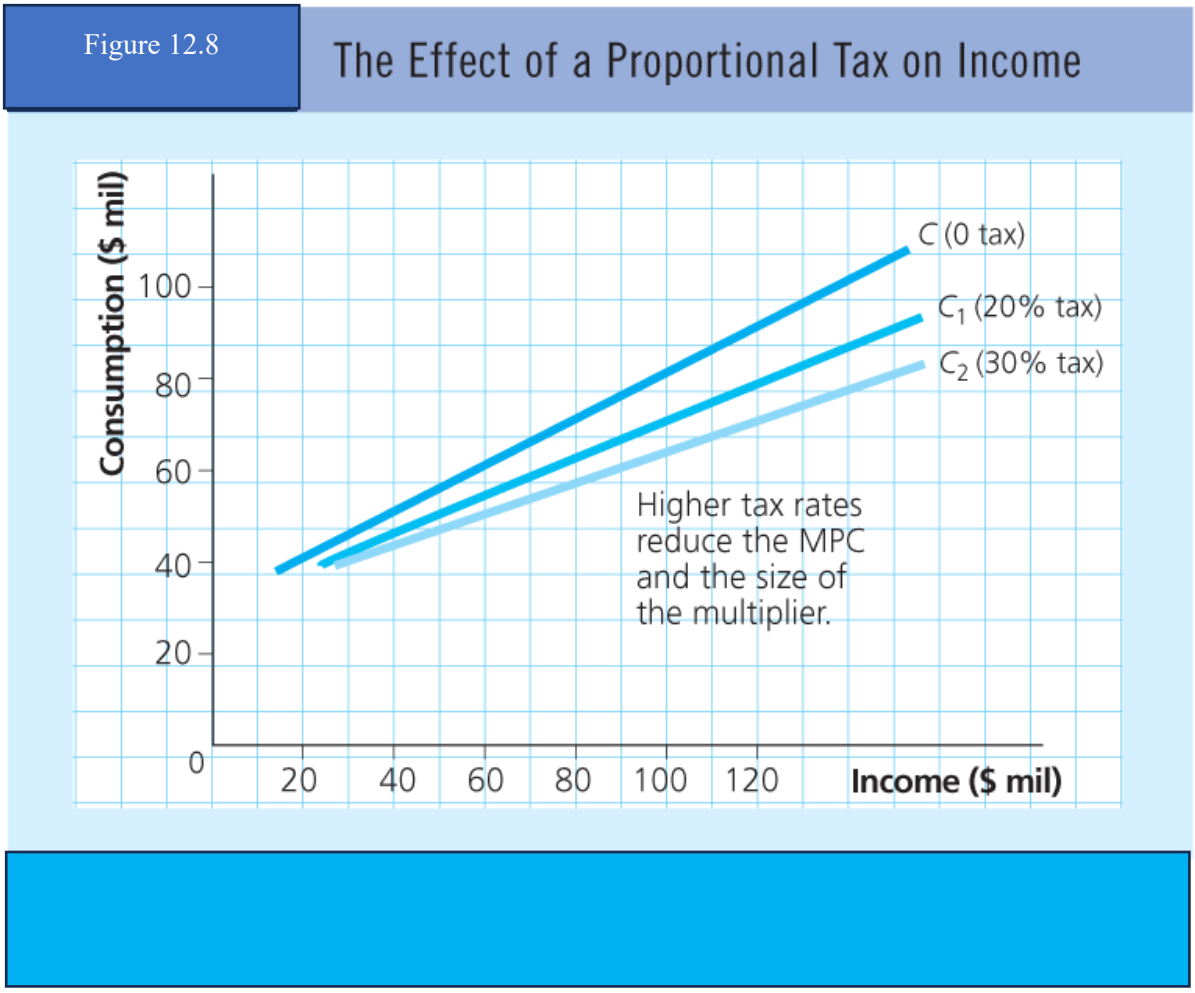
In Figure 12.8, the pre-tax consumption is shown by the C line and the after-tax consumption by the C_1 line.

Note that the consumption curve with the proportional tax is flatter than the consumption curve without the tax.

Effect of a Higher Proportional Tax Rate

Suppose that the tax were 30% of total income instead of 20%. How would the consumption curve be affected? Let's investigate. As Figure 12.8 shows, an increase in the tax rate from 20% to 30% lowers the consumption curve to the C_2 line.

Figure 12.8 The Effect of a Proportional Tax on Income



Because the tax rate directly affects disposable income, it shifts the consumption curve downward and reduces desired aggregate expenditure. The higher tax also flattens the slope of the consumption curve, lowering the marginal propensity to consume (MPC) and raising the marginal propensity to save (MPS). As a result, the multiplier becomes smaller, and income responds less strongly to spending changes. We can conclude that a higher proportional tax weakens the multiplier effect by dampening consumption growth.

An increase in the tax rate reduces desired consumer spending and hence desired aggregate expenditure. An increase in the tax rate also reduces the slope of the consumption curve and hence reduces the size of the multiplier.

Budget Positions

LO 12.5 Identify a budget deficit, a budget surplus, and a balanced budget

Definitions of certain terms

Reading Comprehension

1. What is a proportional tax? How does a proportional tax affect income?
2. What effect does a change in the tax rate have on the consumption curve?
3. In a closed economy with government spending and taxation, explain what will happen to income if $(I + G) < (S + T)$

The government budget is a plan of the intended revenues and expenditures of the government for the ensuing fiscal year. It is the main instrument used by the government to execute its economic policies.

Budget deficit, budget surplus, and balanced budget are terms often used in discussions of government spending and taxation. At any given time, the government's budget can be in only one of the following positions: a budget deficit, a budget surplus, or a balanced budget. Let us define each of these terms.

Budget Deficit A **budget deficit** is a condition that exists when government spending is greater than tax revenues. The size of the deficit is the difference between government spending (G) and taxes (T):

budget deficit the condition in which government spending is greater than tax revenues

$$\textbf{Budget deficit} = G - T$$

Government Budget Balance

In 2023, the Government of Canada collected approximately $561 billion in total revenue and spent around $637 billion. This produced a budget deficit of about $76 billion in 2023 (Statistics Canada, Table 10-10-0017-01).

Budget Surplus A **budget surplus** is a condition that exists when government spending is less than tax revenues. The size of the surplus is the difference between taxes (*T*) and government spending (*G*):

budget surplus the condition in which government spending is less than tax revenues

$$\textbf{Budget surplus} = T - G$$

For instance, if in 2009 the government collected $580 billion in taxes and spent $570 billion, then it had a budget surplus of $10 billion in 2009.

Balanced Budget A **balanced budget** is the situation that exists when the government currently spends exactly as much as it collects in taxes; government spending is equal to tax revenues:

balanced budget a condition in which government spending equals tax revenues

$$\textbf{Balanced budget: } G = T$$

For example, a government would have a balanced budget if it collected $600 billion in tax revenues in a given year and spent $600 billion in the same year.

Graphical Representation of Budget Positions

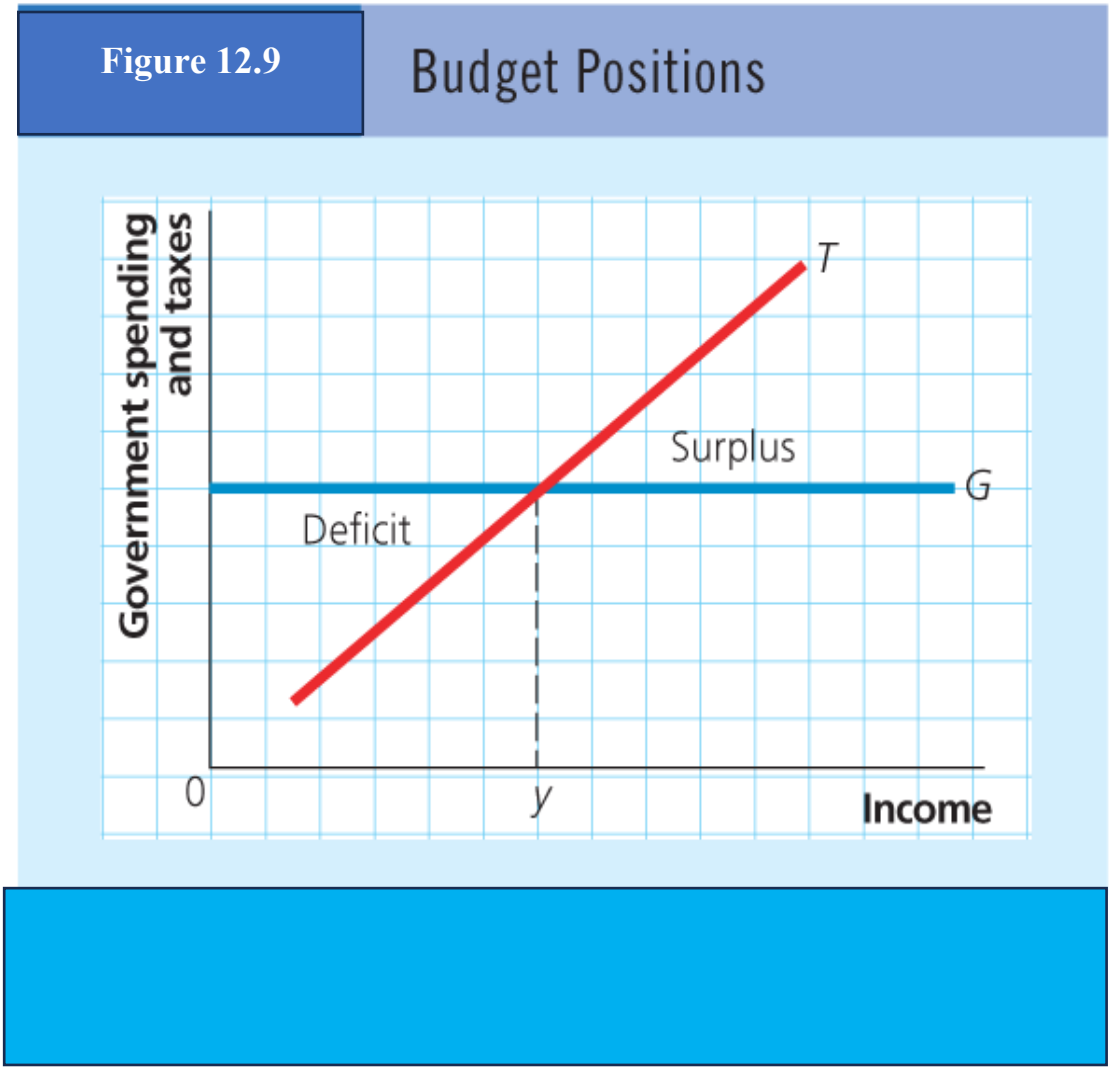
Figure 12.9 shows how different budget positions—surplus, deficit, and balance—can be visualized. In this diagram, we assume that government spending is a fixed amount, independent of the level of income, and that taxes are proportional to income. The tax line rises with income, reflecting the proportional tax structure, while the horizontal spending line reflects constant government expenditure.

The point where the two lines intersect represents a balanced budget. At income levels below this point, spending exceeds revenue—a deficit. Above this point, tax revenue exceeds spending—a surplus.

At a level of income of Y, G = T. The budget, therefore, is balanced. At any income level below Y, the budget is in deficit. And at any income level above Y, the budget is in surplus. Classical economists held that sound government finance required a balanced budget at all times. In contrast, Keynesian theory introduced the concept of functional finance—the deliberate use of deficits and surpluses to achieve

macroeconomic goals. According to this view, budget deficits can help counter recessions, while surpluses can moderate inflationary pressure.

Figure 12.9 Budget Positions



functional finance the intentional use of deficits and surpluses to achieve desired economic objectives

The Balanced Budget Multiplier

LO 12.6 Explain the effect of a balanced budget change in spending on equilibrium income

Effect of a Balanced Budget Change in Spending

Our analysis so far has shown that an increase in government spending tends to increase desired aggregate expenditure and hence the equilibrium level of income, whereas an increase in taxes tends to reduce intended aggregate expenditure and hence the equilibrium level of income.

When the increase in government spending equals the increase in taxes, the change is called a balanced budget change in spending. Despite the equal rise in spending and taxation, the result is not neutral. The increase in government spending has a direct and full effect on aggregate expenditure, while the increase in taxes reduces consumption by only a fraction—equal to the marginal propensity to consume. The net effect is a rise in equilibrium income equal to the amount of the balanced budget change.

balanced budget change in spending the condition in which a change in government spending equals the change in taxes

Balanced budget change in spending: ΔG = ΔT

For example, **in 2023**, the government increased its spending by **$60 billion** and at the same time increased taxes by **$60 billion**—a balanced budget increase in spending. Similarly, if it reduced its spending by **$70 billion** and at the same time reduced taxes by the same amount, then it undertook a balanced budget decrease in spending. It is tempting to conclude that a balanced budget change in spending would leave equilibrium income unchanged. But earlier in the chapter, we saw that a $10 million increase in government spending raised equilibrium income by $20 million, while a $10 million increase in taxes reduced equilibrium income by only $10 million. This suggests that spending has a larger impact on equilibrium income than taxation. Therefore, a balanced budget change in spending produces a net change in income, not a neutral one.

Reading Comprehension

1. Define each of the following terms:
   a. Budget deficit
   b. Budget surplus
   c. Balanced budget
2. What is the key instrument used by the government to implement its economic policy?

Let us assume a multiplier of 2 across the economy.

An increase in government spending of $10 million will generate an increase in income of $20 million. A government spending multiplier of 2 implies a marginal propensity to save (MPS) of 0.5 and a marginal propensity to consume (MPC) of 0.5.

How a Balanced Budget Change Affects Income

Now consider a $10 million increase in taxes. Since the MPC is 0.5, consumer spending falls by $5 million—not the full $10 million. With a multiplier of 2, the resulting decline in income from the tax increase is $10 million. So, while government spending increases income by $20 million, the tax increase reduces it by $10 million, leaving a net gain of $10 million in national income.

This result is known as the balanced budget theorem: when government spending and taxes increase by the same amount, equilibrium income rises by the amount of the spending increase.

balanced budget theorem the hypothesis that states that if government spending and taxes increase by the same amount, the resulting increase in income will equal the increase in government spending

Looked at another way, we can say that the balanced budget multiplier is 1. An increase in government spending of $50 million followed by an increase in taxes of $50 million will increase equilibrium income by $50 million.

Automatic Stabilizers

Reading Comprehension

1. Is a balanced budget change in spending the same as a balanced budget? Explain.
2. An increase in government spending of $500 billion has exactly the same impact on the economy as a tax cut of $500 billion. Is this true or false? Explain.
3. Can the government stimulate the economy without changing the size of its deficit? Explain.

LO 12.7 Describe the automatic stabilizers and how they work

Automatic and Discretionary Fiscal Policy

Fiscal policy—changes in government spending and taxation—is a central tool of macroeconomic management. It is useful to distinguish between two types: automatic fiscal policy and discretionary fiscal policy.

Automatic fiscal policy refers to built-in mechanisms, like income taxes and unemployment benefits, that respond to changes in economic activity without new legislation. Discretionary fiscal policy, in contrast, involves deliberate policy choices—such as stimulus packages or targeted spending—made by the government in response to economic conditions.

automatic fiscal policy or automatic (built-in) stabilizers the fiscal policy measures that are built into the economy

discretionary fiscal policy deliberate changes in government spending and taxes to achieve desired economic objectives

Automatic vs. Discretionary Fiscal Policy

Automatic fiscal policy measures are those that have been built into the economic system. They respond automatically to changes in economic conditions, increasing budget surpluses during inflationary periods and expanding budget deficits during recessions. Because they stabilize fluctuations in income and spending without requiring new legislation, they are called automatic (built-in) stabilizers.
Examples include progressive income taxes, which reduce disposable income growth during expansions, and employment insurance payments, which rise during downturns.

These stabilizers played a significant role during the 2020 COVID-induced recession, when rising unemployment triggered higher benefit payouts and falling incomes reduced tax revenue—automatically widening the deficit and cushioning the economic downturn.

Conversely, some fiscal policy measures are not built into the system and must be enacted deliberately. These are discretionary fiscal policy measures: intentional changes in government spending and taxation aimed at achieving macroeconomic goals.

During the 2008–2009 recession, for instance, the Canadian government introduced nearly $30 billion in economic stimulus programs to boost demand and support recovery.

In response to the 2020 recession, discretionary spending was much larger: the federal government deployed over $350 billion in direct support measures, including $82.6 billion for individuals through the Canada Emergency Response Benefit (CERB) and $51.5 billion for businesses through the Canada Emergency Wage Subsidy (CEWS).

When tax deferrals and liquidity measures are included, the total support package exceeded $600

billion—one of the largest fiscal interventions in Canadian history.
(Source: Department of Finance Canada, 2021 Budget; Statistics Canada, Table 10-10-0017-01.)

Examples of Automatic Stabilizers

Progressive Taxes

A progressive tax system raises the tax rate as income grows. During a downturn, falling incomes result in lower tax payments, which protect household purchasing power. During an expansion, rising incomes trigger higher tax rates, which reduce disposable income and moderate excessive demand.

progressive tax system a system in which the tax rate increases as income increases

Support for Agriculture

When crop prices fall or yields decline, government transfers to farmers increase. This protects farm income during downturns. During expansions, when agricultural prices rise and incomes improve, support payments decline automatically, reducing public spending and avoiding inflationary pressure.

Employment Insurance

Unemployment insurance expands during recessions, providing temporary income to jobless individuals. This stabilizes consumption. During expansions, fewer people claim benefits, reducing government spending and avoiding unnecessary stimulus.

Welfare Payments

Income-tested programs—such as social assistance—automatically rise during downturns as more people become eligible. This cushions low-income households. During periods of economic growth, fewer households qualify, which reduces transfers and prevents public spending from accelerating inflation.

Corporate Profit Taxes

Corporate tax revenues fall during recessions as profits decline, allowing firms to retain more income and continue operations. During expansions, higher profits increase tax payments, which withdraw excess demand from the economy and prevent overheating.

Reading Comprehension

1. What is the difference between automatic fiscal policy and discretionary fiscal policy?
2. Identify two automatic stabilizers and explain how they work.
3. What are the limitations of automatic stabilizers?
4. What is fiscal drag?

Limits of Automatic Stabilizers

Fiscal Drag

Automatic stabilizers do not always support recovery. Although they reduce economic volatility, they can sometimes slow growth during a rebound. This problem—called fiscal drag—arises when stabilizers begin to restrain the economy before full recovery.

For example, during a recovery from high unemployment and low output, rising incomes trigger higher taxes under a progressive system. These higher tax payments reduce disposable income and slow consumer spending. Similarly, as unemployment falls, employment insurance and welfare payments decline, reducing overall demand. These automatic changes, though stabilizing in theory, can delay a return to full employment.

Fiscal drag refers to this effect: when stabilizers that normally prevent overheating also hinder a strong recovery by withdrawing support too early.

fiscal drag the phenomenon in which automatic stabilizers prevent the economy from recovering from a recession

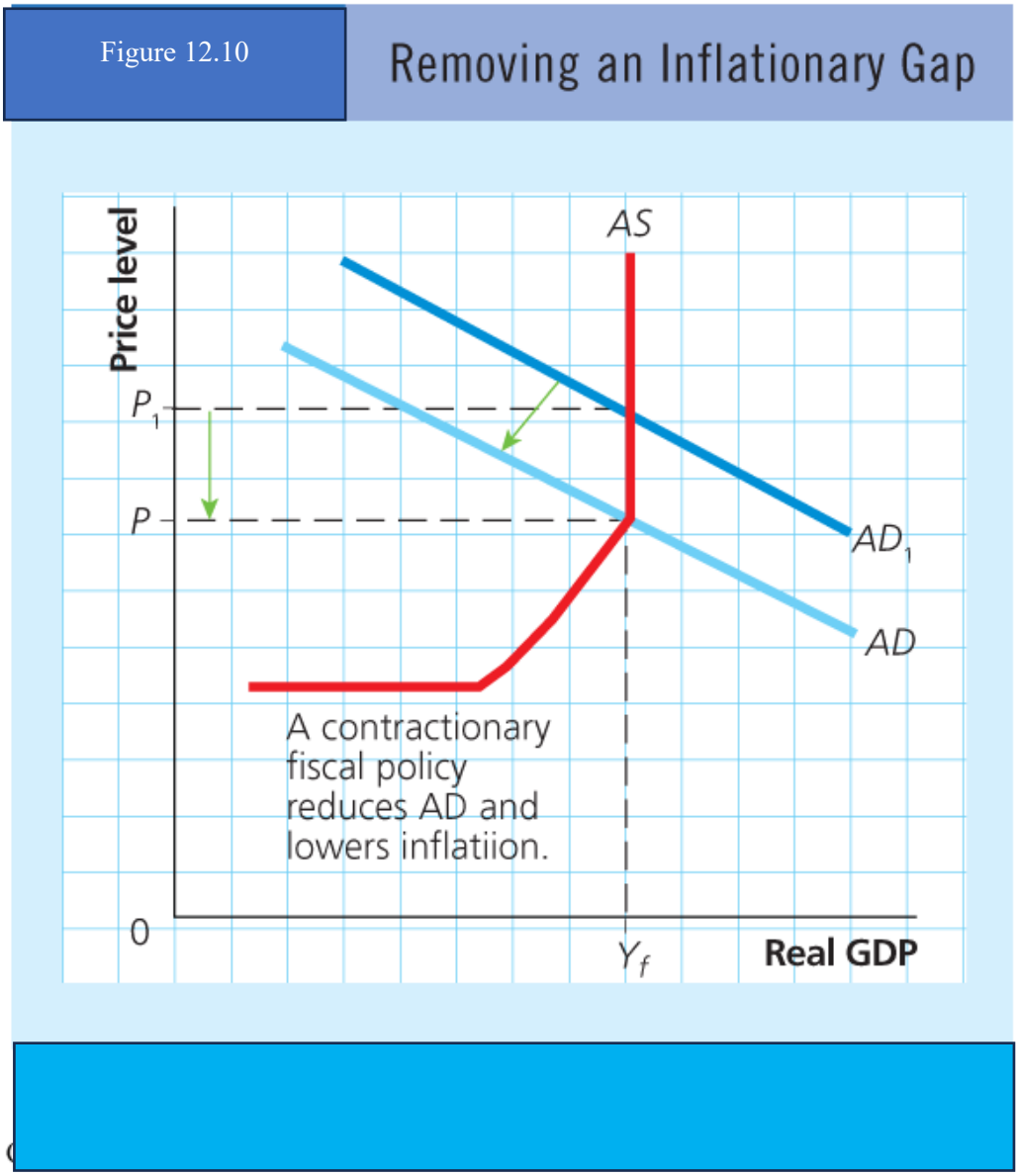
Role of Discretionary Fiscal Policy

Discretionary fiscal policy—deliberate changes in government spending or taxation—may be needed to counteract fiscal drag. Although automatic stabilizers reduce fluctuations in income and output, they cannot eliminate instability entirely. During periods of sluggish recovery, governments may need to increase spending or reduce taxes intentionally to accelerate growth and restore full employment.

Discretionary Fiscal Policy: Closing the Gaps

LO 12.8 Explain how discretionary fiscal policy can be used to close full-employment gaps

Figure 12.10 Removing an Inflationary Gap



Using Fiscal Policy to Reduce Inflation

Fiscal policy can reduce inflation by lowering aggregate expenditure. When government spending decreases or taxes increase, total demand in the economy falls. This reduction in demand helps slow price increases and reduces inflationary pressure.

The goal of fiscal policy is to reach full employment without triggering inflation. By adjusting spending and taxation, the government can shift the economy toward equilibrium at the full-employment level of output.

Contractionary Fiscal Policy

Figure 12.10 illustrates how fiscal policy can reduce inflation. The initial aggregate demand curve, AD_1, intersects the aggregate supply curve at a high price level, P_1, above the full-employment price level, P. To reduce inflation, aggregate demand must fall from AD_1 to AD.

The appropriate response is contractionary fiscal policy—either a cut in government spending, an increase in taxes, or both. These measures reduce the government deficit or increase the budget surplus, decreasing total demand in the economy.

A cut in government spending lowers aggregate expenditure and income. This decline in income leads to reduced consumption and investment. As shown in Figure 12.10, this results in a leftward shift of the AD curve from AD_1 to AD, bringing the economy back to the full-employment output level, Y_f.

An increase in taxes produces a similar effect. Higher taxes reduce disposable income, which lowers consumption and investment. The AD curve again shifts from AD_1 to AD, removing inflationary pressure.

Any fiscal measure that reduces aggregate expenditure is contractionary. Both spending cuts and tax increases fall under contractionary fiscal policy because they reduce total demand and slow the economy.

> ***contractionary fiscal policy*** *decreases in government spending and increases in taxes that result in a reduction in aggregate expenditure*

If the economy is experiencing inflation without unemployment, the appropriate fiscal

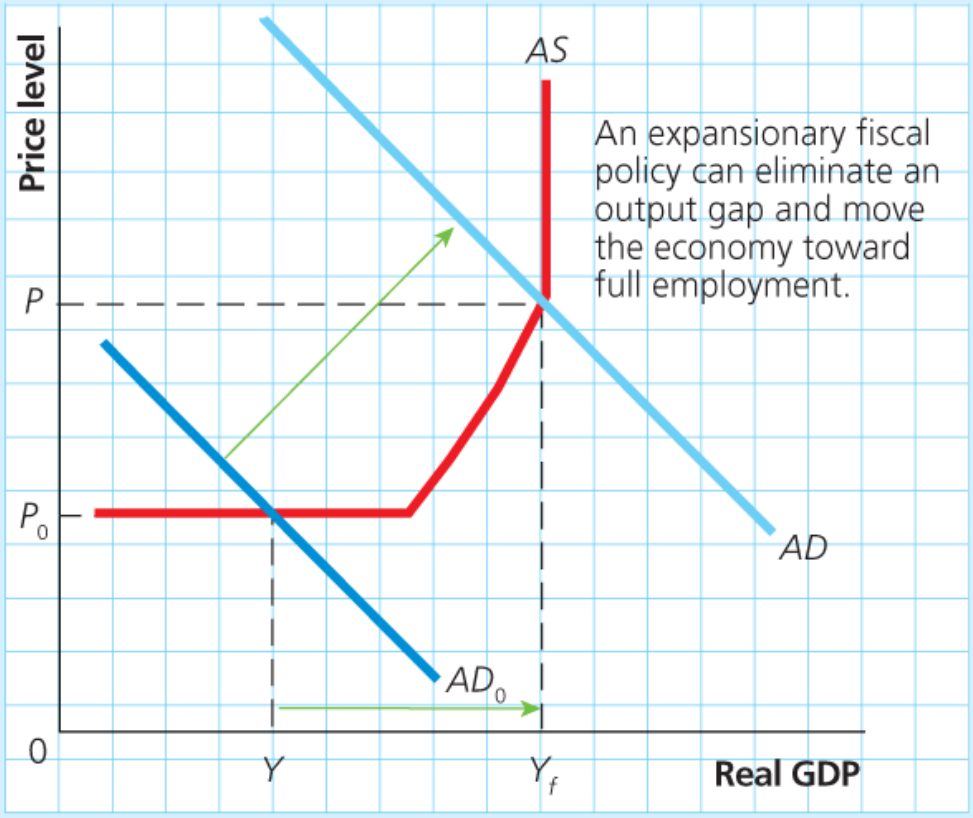
Expansionary Fiscal Policy

Fiscal policy can reduce unemployment by increasing aggregate expenditure. When the economy operates below full employment, there is an output gap between actual output, **y**, and potential output, **Y_f**, as shown in **Figure 12.11.** The intersection of the aggregate demand curve, **AD_o**, and the aggregate supply curve, **AS**, occurs at a low price level, **P_o**, and insufficient real GDP.

To close the output gap, the government can increase spending, reduce taxes, or apply both measures. These actions raise aggregate demand, shifting the AD curve from AD_o to AD. This shift brings the economy closer to full employment and restores equilibrium at a higher output level. An increase in government spending raises total expenditure and income. As income grows, planned consumption and

Figure 12.11 Removing an Output Gap

Figure 12.11 Removing an Output Gap



investment also rise. This multiplier effect pushes the economy toward the full-employment level of output.

A tax cut produces the same result. Lower taxes raise disposable income, leading to increased consumer spending and investment. As aggregate demand expands, the output gap narrows and unemployment falls.

Any measure that increases aggregate expenditure is expansionary. Higher spending and lower taxes are both examples of expansionary fiscal policy because they increase output, raise income, and reduce unemployment.

> ***expansionary fiscal policy*** *increases in government spending and increases in taxes that result in an increase in aggregate expenditure*

If the economy is experiencing a recession, with high unemployment and no inflation, the appropriate fiscal policy to move the economy toward full employment is an expansionary fiscal policy.

BUSINESS SITUATION 12.1

The economy is experiencing a period of severe unemployment. The government has announced that it will undertake an expansionary fiscal policy, increasing government spending and reducing taxes. A business manager was contemplating hiring additional workers to better serve her clients.

Should the manager hire the workers before the implementation of the government policy, or should she wait until after the policy has been implemented?

The answer to this Business Situation can be found in Appendix A.

Government Spending or Taxes? The Pros and Cons

LO 12.9 Discuss the pros and cons of using government spending and taxes to control macroeconomic activity

Comparing Government Spending and Taxation as Fiscal Tools

Government Spending: Advantages

Government spending delivers a stronger stimulus than tax cuts. A $20 million increase in public

spending has a greater effect on aggregate demand than a tax reduction of the same size, because the full amount is injected into the economy.

Spending can target specific regions. Public projects can focus on areas with high unemployment, avoiding unnecessary stimulus in regions already operating near capacity. This reduces the risk of regional inflation.

Public investment creates jobs directly. Infrastructure, health, and education programs absorb unemployed labour, boosting both employment and aggregate income.

Spending supports long-term productivity. Well-designed projects—transportation networks, school construction, or digital infrastructure—can raise the economy's productive capacity, not just stimulate short-term demand.

Government Spending: Disadvantages

Spending programs face delays. Planning, contracting, and regulatory processes slow implementation, reducing responsiveness during fast-moving downturns.

Reading Comprehension

1. What is the appropriate fiscal policy during a period of high inflation?
2. What is the appropriate fiscal policy during a deep recession?
3. Is it wise for a government to pursue a balanced budget policy during periods of high unemployment or high inflation? Explain.

Programs are hard to reverse. Once launched, government projects generate political commitments and institutional inertia. Cancelling them midstream can waste resources and damage credibility.

Risk of misallocation. Some spending decisions prioritize political considerations over economic efficiency, diluting the impact of the stimulus and leading to suboptimal use of public funds.

Changes in Taxes: Advantages

Tax cuts are more widely accepted. They increase disposable income directly and are often more politically palatable than expanded public spending—especially among voters concerned about government size.

Tax adjustments are easier to reverse. Temporary tax cuts can be withdrawn more easily than spending programs can be scaled back, offering governments more flexibility in shifting conditions.

Tax policy changes are quicker to implement. Compared to the long lead times of public projects, changes in personal income tax rates or corporate tax provisions can be introduced with fewer logistical hurdles.

Tax cuts can boost private sector confidence. Lower taxes may encourage households to spend and businesses to invest, supporting broader economic activity.

Changes in Taxes: Disadvantages

Tax cuts are less efficient dollar-for-dollar. A portion of the tax cut is saved, not spent, which reduces the size of the multiplier effect compared to government spending.

Tax cuts apply uniformly across the economy. They cannot be tailored to specific regions facing higher unemployment, making them less useful when regional disparities are pronounced.

Temporary cuts may not change behaviour. If households or firms believe tax cuts will be reversed, they may save rather than spend the extra income, limiting the policy's effectiveness.

In sum, government spending and tax changes offer distinct trade-offs. Spending delivers stronger and more targeted stimulus, but carries delays and long-term commitments. Tax changes respond quickly and flexibly, but offer a weaker and less focused effect. The choice between them depends on the depth of the downturn, the urgency of response, and the structure of regional conditions.

Reading Comprehension

1. What are the pros and cons of using government spending to control the economy?
2. What are the pros and cons of using taxes to control the economy?

The Full Employment Budget

LO 12.10 Discuss the significance of the full-employment budget

Do Budget Balances Reflect Fiscal Policy?

A budget deficit does not always indicate expansionary fiscal policy, nor does a surplus always reflect contractionary policy. Budget balances can shift automatically as economic conditions change, even without any new policy decisions.

During economic expansions, tax revenues rise, and transfer payments fall. As incomes increase, households and firms pay more taxes. At the same time, fewer people rely on unemployment insurance, welfare, or subsidies. These automatic changes reduce spending and raise revenue, causing the budget to move toward surplus—even if no deliberate policy change occurs.

In recessions, the opposite occurs. Tax revenues decline as incomes fall, while government spending rises because more people qualify for support programs. This automatic response pushes the budget toward deficit—even without any new stimulus measures.

These changes are passive results of automatic stabilizers, not necessarily signs of active fiscal policy. To determine whether a government is pursuing expansionary or contractionary policy, one must examine deliberate changes in spending or taxation—not just the budget outcome.

Distinguishing Automatic and Discretionary Budget Changes

Economists use the full-employment budget to separate automatic changes from discretionary fiscal policy. The full-employment budget—also called the high-employment budget—estimates what the government's budget balance would be if the economy were operating at full employment.

This approach controls for the effects of the business cycle. In a recession, deficits may appear even if the government has not changed spending or tax policy, because revenues fall and transfer payments rise automatically. The full-employment budget adjusts for these cyclical effects and shows the underlying fiscal stance.

Figure 12.12 The Full-Employment Budget

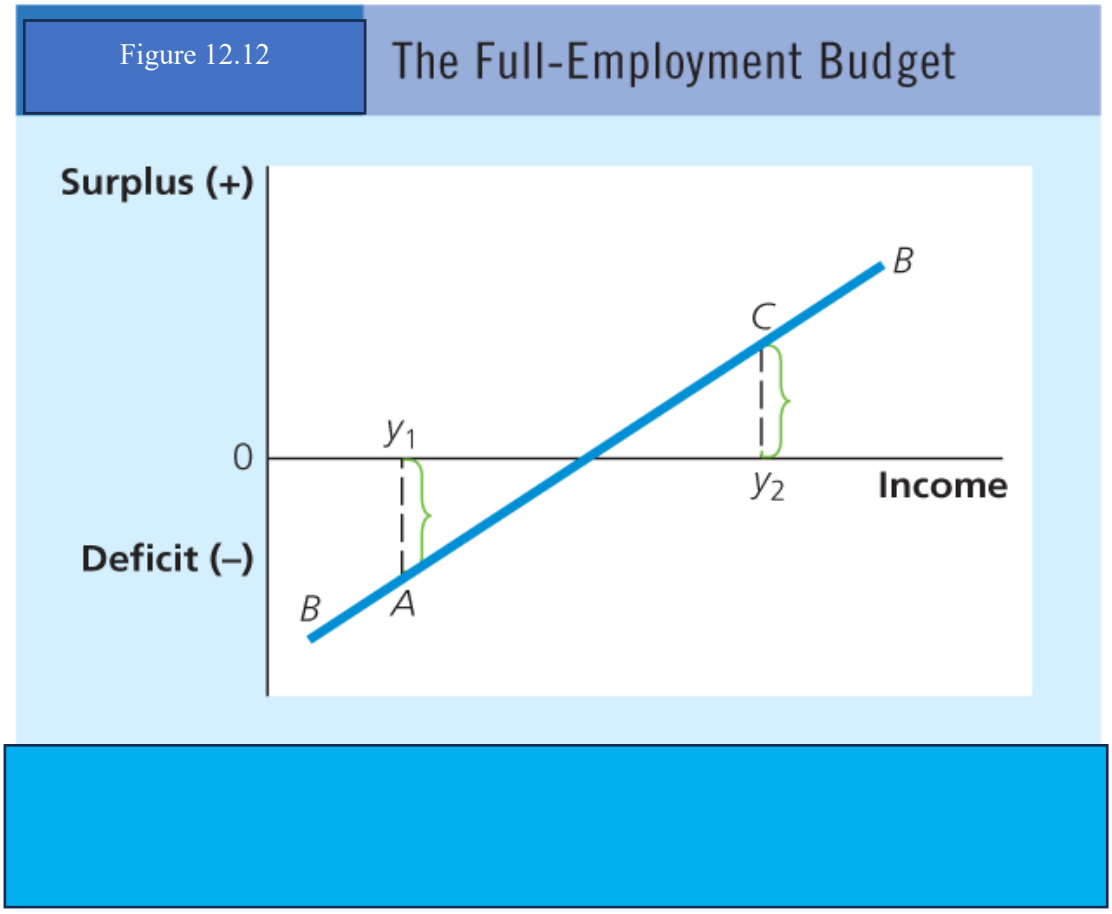


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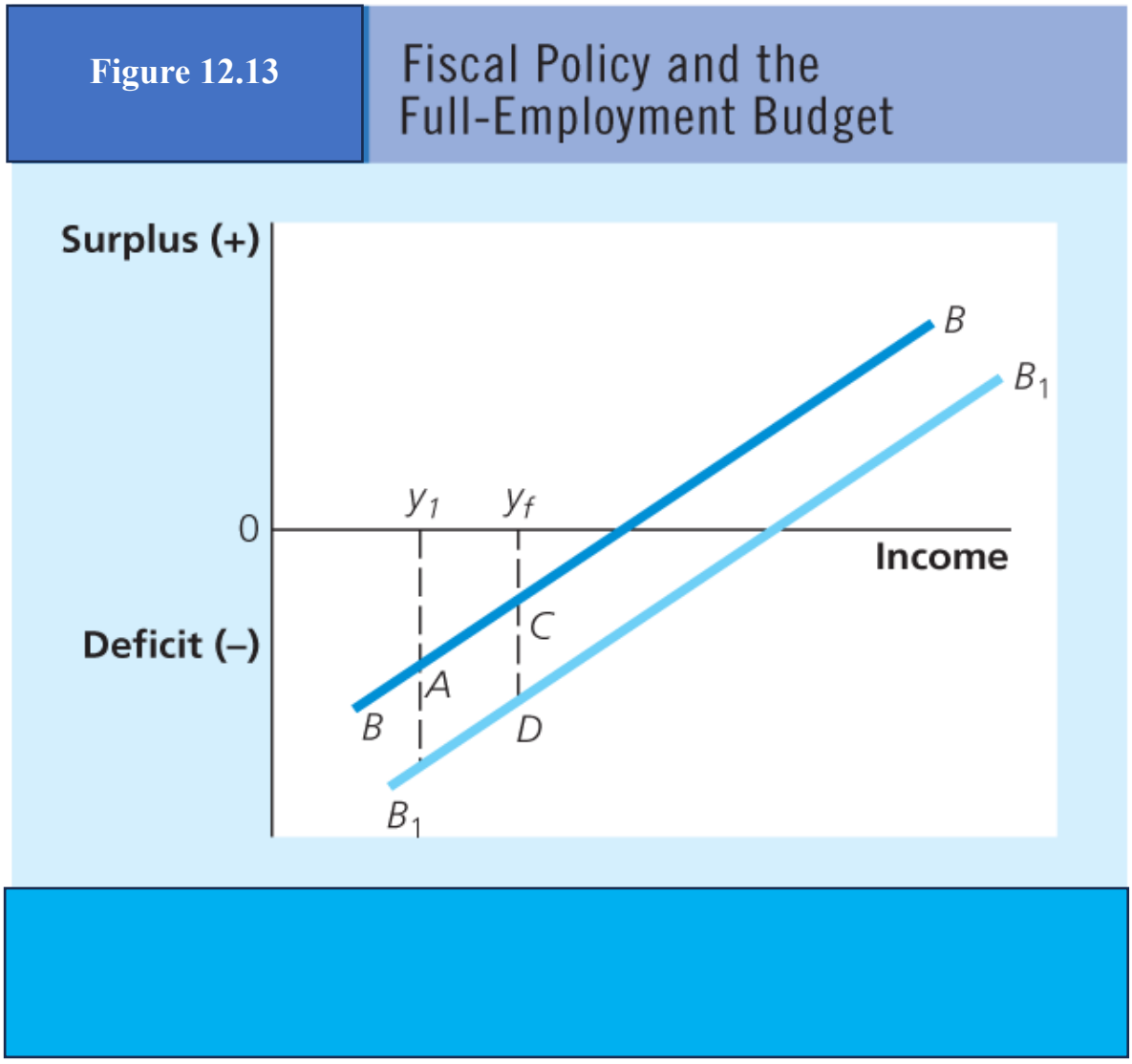
Figure 12.13 Fiscal Policy and the Full-Employment Budget



full-employment budget the position of the budget if the economy were at full employment

The Full-Employment Budget and Discretionary Fiscal Policy

The full-employment budget distinguishes automatic budget changes from those caused by **discretionary policy.** It shows what the government's budget balance would be if the economy were operating at its full-employment level of income, given current tax and spending policies.

Figure 12.13 illustrates this distinction. Suppose the current income level is Y_1. At that level, the actual budget shows a deficit equal to Y_1A. If income rises to the full-employment level, Y_f, without any change

in fiscal policy, tax revenues increase and transfer payments fall. The actual deficit narrows from **Y_1A** to **Y_fC**. This change reflects the automatic response of the budget—not a shift in government policy.

The full-employment deficit remains fixed at Y_fC unless the government changes its fiscal stance. For instance, if the government adopts an expansionary policy to boost demand, the budget line shifts from BB to B_1B_1. In that case, the full-employment deficit widens from Y_fC to Y_fD, signaling a deliberate fiscal expansion.

In sum, the full-employment budget helps identify whether changes in the deficit reflect automatic stabilizers or active policy. This distinction is essential for evaluating the government's fiscal position and its influence on macroeconomic conditions.

Reading Comprehension

1. What is your understanding of the full-employment budget?
2. What is the significance of the full-employment budget?

Thus, we can draw the following conclusion:

Changes in the budget do not necessarily indicate changes in fiscal policy. Changes in the full-employment budget, however, do indicate changes in fiscal policy.

Supply-Side Consideration of Fiscal Policy

LO 12.11 Explain the supply-side considerations of fiscal policy

Fiscal Policy and the Supply Side

Fiscal policy influences both aggregate demand and aggregate supply. While short-term changes in spending or taxation affect aggregate expenditure, some economists argue that well-designed fiscal policy can also raise the economy's long-run productive capacity.

Public investment in education and health strengthens human capital. Government spending that improves workforce skills and health increases productivity and expands potential output. These supply-side effects shift the aggregate supply curve outward over time.

Infrastructure spending raises efficiency and lowers costs. Investment in roads, railways, water systems, and digital networks improves connectivity, reduces delays, and supports business activity. These improvements enhance long-run growth by enabling more efficient production and distribution.

Some economists also point to tax policy as a supply-side tool. Reductions in marginal tax rates may increase incentives to work, save, and invest. Lower corporate taxes, for example, may encourage capital formation and innovation, contributing to greater output capacity.

Subsidies for research and development can also influence supply. Support for innovation, technology adoption, and industry modernization raises productivity and helps the economy adjust to structural changes.

Spending on legal and institutional frameworks contributes indirectly to supply-side strength. Efficient enforcement of contracts, regulatory stability, and reduced transaction costs improve the business climate and support long-run output growth.

However, some economists caution that poorly designed fiscal policies may distort incentives and reduce efficiency. High deficits financed through distortionary taxes or subsidies that protect uncompetitive sectors may slow productivity growth and weaken the supply base.

While fiscal policy primarily targets demand, economists remain divided on its long-run supply effects, with emphasis placed on the structure, design, and efficiency of public spending and taxation.

Using Graphs to Show the Effects of Fiscal Policy's on AS

Fiscal policy can be illustrated graphically to show its impact on aggregate supply. Figure 12.14 provides a visual representation of how targeted spending or tax changes influence the economy's productive capacity.

In Diagram A, the initial aggregate supply curve is AS. An increase in government spending on education, infrastructure, or health raises productivity and expands capacity. Similarly, a reduction in distortionary taxes can improve work and investment incentives. As a result, the aggregate supply curve shifts rightward from **AS to AS_1**.

This shift reflects an increase in potential output. A rightward movement of the AS curve reduces inflationary pressure while allowing real GDP to rise, improving both price stability and economic growth.

The diagram reinforces the view held by some economists that fiscal policy, when well designed, can strengthen long-run supply by influencing productivity, investment, and labour market efficiency.

Diagram A: Increase in Government Spending and the Rightward Shift of Aggregate Supply

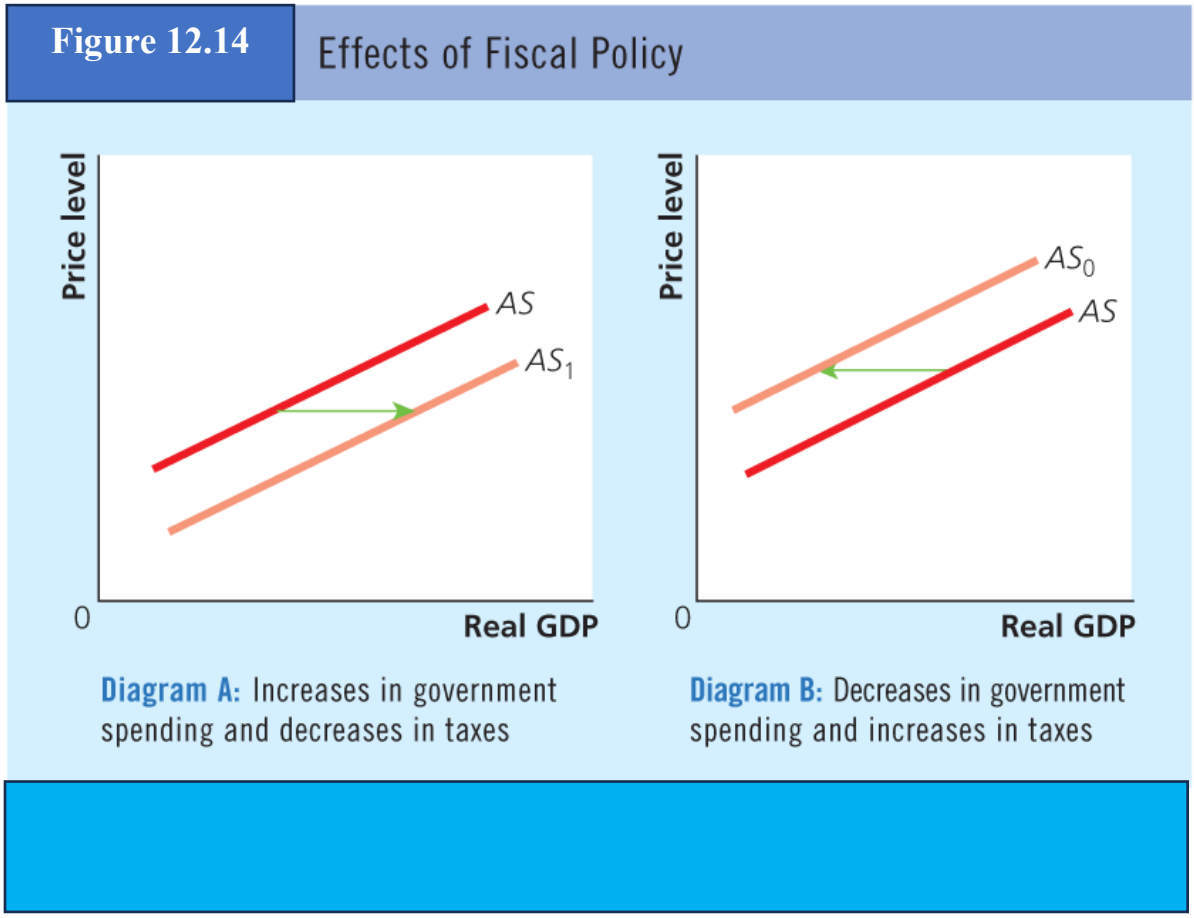
Diagram A of Figure 12.14 shows how an increase in government spending can expand aggregate supply. The initial aggregate supply curve is labeled AS. When the government increases spending in areas that enhance productivity—such as education, health care, transportation, and digital infrastructure—the economy's capacity to produce goods and services rises.

This improvement in productive capacity causes the aggregate supply curve to shift rightward, from AS to AS_1. The rightward shift represents an increase in potential output. At each price level, the economy can now produce more real GDP.

Figure 12.14 Effects of Fiscal Policy

Diagram A: Increases in government spending and decreases in taxes

Diagram B: Decreases in government spending and increases in taxes



The outcome of this shift is twofold: real output increases, and price pressure decreases. The economy grows without generating inflation, as the expansion is supply-driven rather than demand-driven. This contrasts with demand-side stimulus, which can raise prices when output is near capacity.

Diagram A illustrates the supply-side benefits of well-targeted fiscal policy. Government investment in long-term capacity-building sectors can improve productivity, increase employment, and raise the economy's potential output over time.

Diagram B: Decrease in Government Spending and the Leftward Shift of Aggregate Supply

Diagram B of Figure 12.14 illustrates the opposite scenario. The initial aggregate supply curve is again labeled **AS**, as in Diagram A. In this case, a reduction in government spending affects areas critical to long-run productivity—such as infrastructure maintenance, public education, or health services. These cuts reduce the economy's ability to produce goods and services efficiently.

As a result, the aggregate supply curve shifts leftward from AS to AS_0. This shift indicates a decline in productive capacity. At each price level, the economy now produces less real GDP.

The consequences of this leftward shift include lower output and higher prices. With supply contracting, even if demand remains unchanged, the economy faces rising costs and reduced growth. This can worsen inflation and unemployment simultaneously—a condition known as stagflation.

Diagram B shows that fiscal policy can have negative supply-side effects when spending cuts or tax increases reduce investment in productivity-enhancing sectors. While such policies may reduce budget deficits, they risk undermining the economy's long-term growth potential.

BUSINESS SITUATION 12.2

You own and operate a small business and have very little control over the price that you charge. The market determines your price. The government has embarked on a massive program of investing in infrastructure, incentives for education and training, and research leading to improvements in technology. As a business owner, you are interested in the long-term effects of the government's program on your business.

How might this program affect your business?

The answer to this Business Situation can be found in Appendix A.

The Combined Effects of Fiscal Policy

LO 12.12 Discuss the total effects of fiscal policy

Combining Demand-Side and Supply-Side Effects of Fiscal Policy

Fiscal policy affects both aggregate demand and aggregate supply, but many economists argue that its short-run impact is stronger on the demand side. Diagram A of Figure 12.15 illustrates this view using the AD–AS framework.

In Diagram A, expansionary fiscal policy—such as an increase in government spending or a reduction in taxes—shifts the aggregate demand curve rightward, from AD to AD_1. At the same time, productivity-enhancing measures may shift the aggregate supply curve slightly rightward, from AS to AS_1. However, the shift in demand is larger than the shift in supply.

As a result, the economy experiences both higher output and higher prices. Real GDP increases, moving the economy closer to full employment, but the stronger demand effect generates inflationary pressure. The rise in the price level reflects the dominant influence of the demand-side stimulus.

This analysis suggests that, in the short run, fiscal policy influences demand more directly than it expands supply. Supply-side effects take time to emerge because they depend on structural improvements—education, infrastructure, health, and technology. Diagram A illustrates that fiscal expansion increases output and employment but can trigger inflation unless productive capacity rises simultaneously. The outcome depends on the composition and efficiency of fiscal measures—whether they stimulate demand without straining supply.

Reading Comprehension

1. Changes in government spending and taxes are clearly demand-side-only policies because they affect only the demand side of the economy. Discuss briefly.
2. Distinguish between the demand side and the supply side of the economy.

Total Effects of Fiscal Policy: Demand-Side vs. Supply-Side Perspectives

Diagram A of Figure 12.15 reflects the view of many economists who argue that expansionary fiscal policy primarily influences aggregate demand. In this case, an increase in government spending or a reduction in taxes shifts the aggregate demand curve from AD to AD_1. The supply-side response—resulting from increased productivity or capacity—is more limited, shifting the aggregate supply curve only slightly from AS to AS_1.

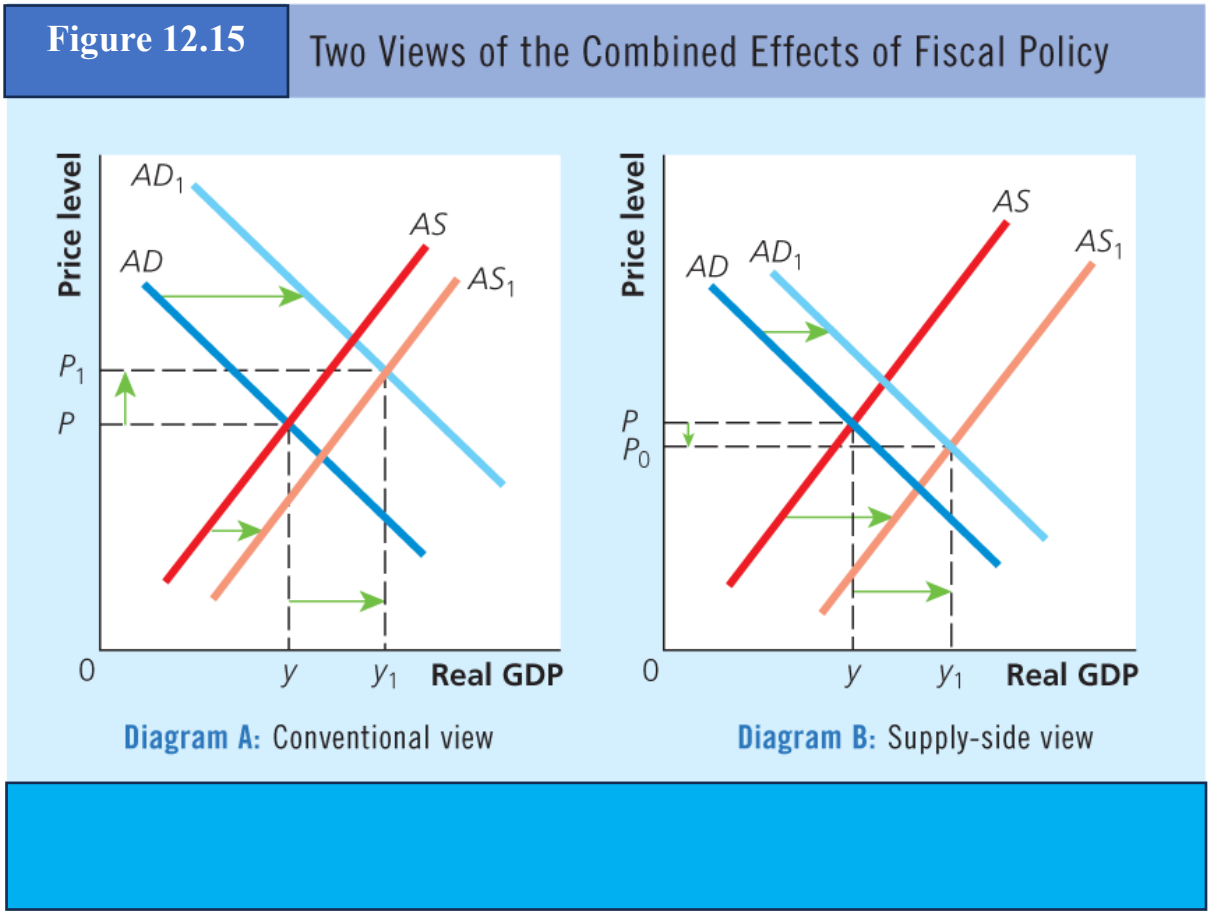
This imbalance produces both higher output and a higher price level. Real GDP rises from **y to y_1**, while the price level increases from **P to P_1**. The inflationary pressure reflects the stronger demand-side stimulus relative to the modest supply-side response.

Diagram B represents the supply-side view. According to this perspective, expansionary fiscal policy—when directed at infrastructure, education, or tax reform—can exert a much larger effect on aggregate supply. In this scenario, the supply curve shifts significantly from AS to AS_1, while the demand curve shifts only slightly from AD to AD_1.

Figure 12.15 Two Views of the Combined Effects of Fiscal Policy

Diagram A: Conventional view

Diagram B: Supply-side view



The outcome is an increase in real GDP from y to y_1, accompanied by a decline in the price level from P to P_o. Greater productive efficiency allows the economy to grow without inflationary pressure, or even with price reductions.

Together, these diagrams show how the composition of fiscal policy determines its macroeconomic effects. Demand-focused measures raise output but may increase inflation. Supply-oriented strategies improve productivity and long-run growth, potentially lowering prices—but take longer to materialize. The balance between these effects depends on policy design, timing, and the structure of the economy.

Limitations of Fiscal Policy

LO 12.13 Discuss the limitations of fiscal policy

Limitations of Fiscal Policy

Fiscal policy faces several important limitations, beginning with time lags.

1. Recognition Lag

There is often a delay in identifying economic problems. A recession or inflationary trend may be underway before it is evident in economic data. This delay—the **recognition lag**—occurs because economic indicators are released with a lag and are subject to revision. As a result, policy responses may start too late to address the initial shock.

2. Decision Lag

Reading Comprehension

1. Show that an expansionary fiscal policy can result in an increase in the price level.
2. Show that an expansionary fiscal policy can result in a decrease in the price level.

Once a problem is recognized, governments need time to decide on an appropriate policy response. Debates in legislatures, negotiations between political parties, and bureaucratic procedures slow down the implementation of fiscal measures. This **decision lag** reduces the responsiveness of fiscal policy.

3. Implementation Lag

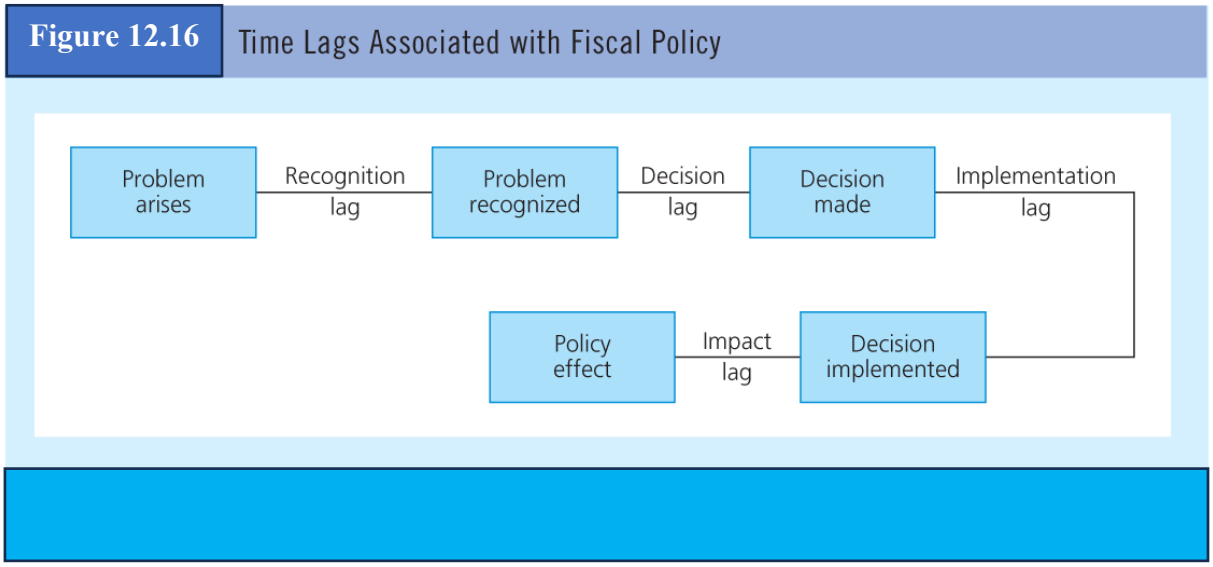
After a policy decision is made, additional time is needed to put it into effect. For example, launching infrastructure projects involves planning, approvals, and contracting. Even tax changes require time to be administered and enforced. The **implementation lag** further weakens fiscal policy's timing.

4. Effectiveness Lag

Finally, even once a fiscal measure is in place, it takes time to influence aggregate demand or supply. Households and firms may not immediately change their behaviour, and the multiplier process unfolds gradually. This **effectiveness lag** means that the full impact of fiscal policy may only be felt after the economy has already begun to change direction.

These four lags—recognition, decision, implementation, and effectiveness—limit the precision and speed of fiscal policy responses. They can cause fiscal stimulus to arrive too late or remain in place too long, reducing its stabilizing role. Figure 12.16 illustrates the time lags associated with fiscal policy.

Figure 12.16 Time Lags Associated with Fiscal Policy



Fiscal Policy in Action: Canada's Response to COVID-19

LO 12.14 Discuss Canada's response to **the COVID-19 Recession**

Canada's Fiscal Response to the COVID-19 Recession

In response to the sharp economic contraction triggered by the COVID-19 pandemic, the Government of Canada implemented a broad set of fiscal measures aimed at stabilizing income, supporting businesses,

and sustaining aggregate demand. These programs were designed to limit the depth of the recession and promote recovery by addressing both demand- and supply-side disruptions.

1. Canada Emergency Response Benefit (CERB)

The **CERB** provided **$2,000 every four weeks to workers who lost income** due to COVID-19. It covered employees, self-employed individuals, and gig workers who were not eligible for regular Employment Insurance. Over **8.9 million Canadians** received CERB benefits (Government of Canada, 2021, https://www.canada.ca/en/services/benefits/ei/cerb-application.html), which helped maintain consumption during lockdowns and stabilized household income.

2. Canada Emergency Wage Subsidy (CEWS)

To prevent mass layoffs, the government introduced the **CEWS**, covering up to **75% of employee wages** for eligible businesses. This program helped employers retain staff and slowed the rise in unemployment (Department of Finance Canada, 2021, https://www.canada.ca/en/department-finance/economic-response-plan/wage-subsidy.html). By supporting payrolls, it preserved employer-employee relationships and eased the transition into recovery.

3. Canada Emergency Business Account (CEBA)

The **CEBA** provided **interest-free loans of up to $60,000** to small businesses and not-for-profits to cover operating costs during periods of reduced revenue. A portion of the loan—up to **$20,000**—was forgivable if repaid by a certain deadline (Export Development Canada, 2021, https://ceba-cuec.ca/). This measure supported liquidity and kept businesses solvent during shutdowns.

4. Canada Recovery Benefits (CRB, CRCB, CRSB)

https://www.canada.ca/en/services/benefits/recovery.html).

After CERB ended, a set of targeted benefits was introduced:

- The **Canada Recovery Benefit (CRB)** for workers not eligible for EI.

- The **Canada Recovery Caregiving Benefit (CRCB)** for workers unable to work because they had to care for a family member.
- The **Canada Recovery Sickness Benefit (CRSB)** for workers who were sick or had to self-isolate.

These programs filled gaps in income support and ensured vulnerable groups received coverage (Government of Canada, 2021, **5. Provincial Measures and Coordination**

In addition to federal measures, **provincial governments** introduced targeted support programs—such as rental assistance, top-ups for essential workers, and aid to small firms—aligned with regional conditions. The **federal-provincial fiscal coordination** helped deliver a broad response across the country (Parliamentary Budget Officer, 2021, https://www.pbo-dpb.ca/en/blog/news/Canada-s-COVID-19-Economic-Response-Plan).

Reading Comprehension

1. Mention three problems that are associated with the use of fiscal policy.
2. Define each of the following:
   a. Decision lag
   b. Implementation lag
   c. Impact lag
3. Explain why there is a need for cooperation and policy coordination between the various levels of government for fiscal policy to be effective.

6. Overall Fiscal Impact

Canada's total direct fiscal support amounted to over **$350 billion**, or roughly **15% of GDP**, one of the largest among G7 countries (International Monetary Fund, 2021, https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19). These measures contributed to a swift rebound in 2021, with real GDP growth reaching **4.8%**, following a **5.1% contraction in 2020** (Statistics Canada, 2022, https://www150.statcan.gc.ca/n1/daily-quotidien/220303/dq220303a-eng.htm).

Canada's COVID-19 response relied on rapid, large-scale, and multi-pronged fiscal intervention to stabilize employment, preserve business capacity, and support household consumption. The experience underscored the importance of automatic stabilizers and discretionary fiscal policy working in tandem during a crisis.

Reading Comprehension

1. Briefly explain the cause of the 2008–2009 recession.

2. To what extent did the recession affect Canada? (What happened to real GDP and employment?)

3. What kind of fiscal policy did the federal government adopt as a response to the recession? Why do you generally agree or disagree with that policy?

4. Do you think that the government's Economic Action Plan played any role in the economic recovery? Explain.

Review

1. Review the learning objectives listed at the beginning of the chapter.

2. Have you accomplished all the objectives? One way to determine this is to answer the Reading Comprehension Questions at the end of each section. This will help you assess the extent to which you have accomplished the learning objectives.

3. If you have not accomplished an objective, review the relevant material before proceeding.

Key Points to Remember

1. **LO 12.1, 12.2** Government spending constitutes over 19% of total spending. An increase in government spending, other things being equal, will cause an increase in the equilibrium level of income. A decrease in government spending, other things being equal, will cause a reduction in the equilibrium level of income.

2. **LO 12.2** The government spending multiplier is the reciprocal of the *MPS*, which is the same as the investment multiplier.

3. **LO 12.3** An increase in taxes, other things being equal, results in a fall in the equilibrium level of income. A reduction in taxes, other things being equal, results in an increase in the equilibrium level of income.

4. **LO 12.4** In a closed economy with government spending and taxes, the equilibrium level of income occurs where the sum of investment and government spending equals the sum of saving and taxes.

5. **LO 12.5** A budget deficit exists when government spending exceeds tax revenues. A budget surplus exists when tax revenues exceed government spending. A balanced budget exists when government spending equals tax revenues.

6. **LO 12.6** The balanced budget theorem states that if government spending and taxes increase by the same amount, then income will increase by an amount equal to the increase in government spending. That is, the balanced budget multiplier is 1.

7. **LO 12.7** Automatic stabilizers are built-in fiscal policy measures that operate automatically to produce economic stability. They include progressive taxes, assistance to agriculture, and employment insurance benefits. The fiscal drag is the phenomenon in which automatic stabilizers prevent the economy from recovering from a recession.

8. **LO 12.8** In an inflationary situation, the appropriate fiscal policy is to reduce government spending and increase taxes. In a recessionary situation, the appropriate fiscal policy is to increase government spending and reduce taxes.

9. **LO 12.9** Advantages of government spending are that they are more powerful than taxes, and they can be specifically focused. Disadvantages are that they have a lengthy implementation period, and they are difficult to reverse. The advantages of taxes are more favourable public acceptance, ease of change, and quick implementation. The disadvantages of taxes are that they are national in scope, and they are less effective than government spending.

10. **LO 12.10** Changes in the budget do not necessarily indicate changes in fiscal policy. Changes in the full-employment budget, however, do indicate changes in fiscal policy. The full-employment budget allows us to differentiate between automatic budget changes and discretionary fiscal policy.

12. **LO 12.11, 12.12** Fiscal policy affects both the demand and supply sides of the economy. The effect of fiscal policy on the economy requires consideration of both demand-side and supply-side effects.

12. **LO 12.13** The major limitations of fiscal policy are the difficulties imposed by time lags, varying government spending in response to business fluctuations, coordinating expenditures among the various levels of government, and the restriction imposed by a huge deficit and the public debt.

13. **LO 12.14** Discuss Canada's response to **the COVID-19 Recession.** In response to the sharp economic contraction triggered by the COVID-19 pandemic, the Government of Canada implemented a broad set of fiscal measures aimed at stabilizing income, supporting businesses, and sustaining aggregate demand.

Problems and Exercises

Basic

1. **LO 12.2** Table 12.7 shows data for a hypothetical closed economy with government spending. Investment (*I*) is fixed at 10 and government spending (*G*) is fixed at 5.

   a. Complete the remaining columns.

   b. Determine the equilibrium level of income *without* government spending.

   c. Determine the equilibrium level of income *with* government spending.

   d. What effect did government spending of $5 billion have on the equilibrium level of income?