Fiscal Policy

RIDLEY COLLEGE
SINCE 1889

Assessment Objectives

Specific Expectations	
1.A	Define fiscal policy and related terms.
1.A	Explain (using graphs as appropriate) the short-run effects of a fiscal policy action.
1.A	Calculate the short-run effects of a fiscal policy action.
1.B	Define why there are lags to discretionary fiscal policy.
3.C	Define crowding out.
3.C	Explain (using graphs as appropriate) how fiscal policy may cause crowding out.
1.C	Define automatic stabilizers.
1.C	Explain how automatic stabilizers moderate business cycles.
2.B	Define the expenditure multiplier, the tax multiplier, the marginal propensity to consume, and the marginal propensity to save.

Assessment Objectives

Specific Expectations	
2.B	Explain how changes in spending and taxes lead to changes in real GDP.
2.B	Calculate how changes in spending and taxes lead to changes in real GDP.

Demand-side Policies

- **Demand-side Policies (Demand Management):** policies hat attempt to change aggregate demand in order to achieve the goals of price stability, full employment and economic growth, and minimize the severity of the business cycle.
  - There are two types of demand-side policies:
    1. Monetary policy
    2. Fiscal policy
  - Monetary and fiscal policies attempt to reduce the short-term fluctuations of the business cycle
  - In the event of an inflationary (expansionary) or deflationary (recessionary) gap, they try to bring aggregate demand to the full employment level of real GDP, or potential GDP.
  - They can also impact on economic growth by contributing to increases in potential GDP

Sources of government revenue

- Government revenue consists of all the funds that flow toward the government from outsiders.

  1. **Taxes of all types** – both direct and indirect. Taxes are the most important source of government revenues.

  2. **From the sale of goods and services** – there are many services for which the users must make a payment, including transportation, electricity, water and many more.

     - The revenues from these sales usually go toward covering the government's costs of providing them.

  3. **Sale of government-owned (state-owned) assets, or property** – such sales are known as privatization, which involves the transfer of ownership from the government to private owners.

Fiscal Policy

- **Fiscal policy:** manipulations by the government of its own expenditures and taxes in order to influence the level of aggregate demand
  - The goals of fiscal policy are the same as the goals of monetary policy, except that fiscal policy also has the goal of achieving equitable distribution of income.

1. **Low and stable rate of inflation:** fiscal policy tries to maintain a slow and stable rate of inflation by manipulating taxes and government spending to influence aggregate demand
2. **Low unemployment:** fiscal policy similarly may try to influence the aggregate demand and therefore unemployment
3. **Reduce business cycle fluctuations:** fiscal policy tries to reduce the size of the fluctuations of the business cycle to make inflationary and deflationary gaps as small as possible

Fiscal Policy

4. **Promote a stable economic environment for long-term growth:** firms in particular need a stable economic environment in order to promote business confidence so that firms can carry-out activities needed for long-term economic growth.

5. **External balance:** fiscal policy can help achieve external balance (where a country's revenues from exports are roughly equal to its spending on imports) by influencing the level of imports through its effects of aggregate demand.

6. **Equitable distribution of income:** fiscal policy has major effects on the distribution of income by determining tax policies and government spending to produce and provide particular goods and services.

Role of Fiscal Policy: Demand Management

- Fiscal policy involves manipulations by the government of its own spending and taxes to influence aggregate demand.
  - $AD = C + I + G + (X - M)$
  - Fiscal policy can affect three of these components:

1. **Level of government's own spending, G**
2. **Level of consumption spending, C** can be influenced if the government changes taxes on consumers (personal income taxes), changing their level of disposable income (consumer income after income taxes have been paid)
3. **Level of investment spending, I:** can be influenced if the government changes taxes on business profits.

Fiscal Policy: Tools

- The tools of fiscal policy are government purchases, transfers, and taxes.
  1. **Government purchases:** includes all public-sector expenditures on goods and services including **current** and **capital** expenditures
     - Infrastructure, schools and universities, national defense, healthcare services and hospitals, national parks, and fire and police protection
  2. **Transfers payments:** transfer income from one group in the country to another and thus do not count as government purchases
     - An increase in transfers, will increase AD as recipients of the transfers will use the income to increase their own consumption or investment
     - Social security payments, unemployment insurance, welfare spending, college financial aid, and producer subsidies
  3. **Taxes:** come in many form including direct taxes, such as the income tax and indirect taxes, such as sales and excise taxes.

Fiscal Policy: Tools

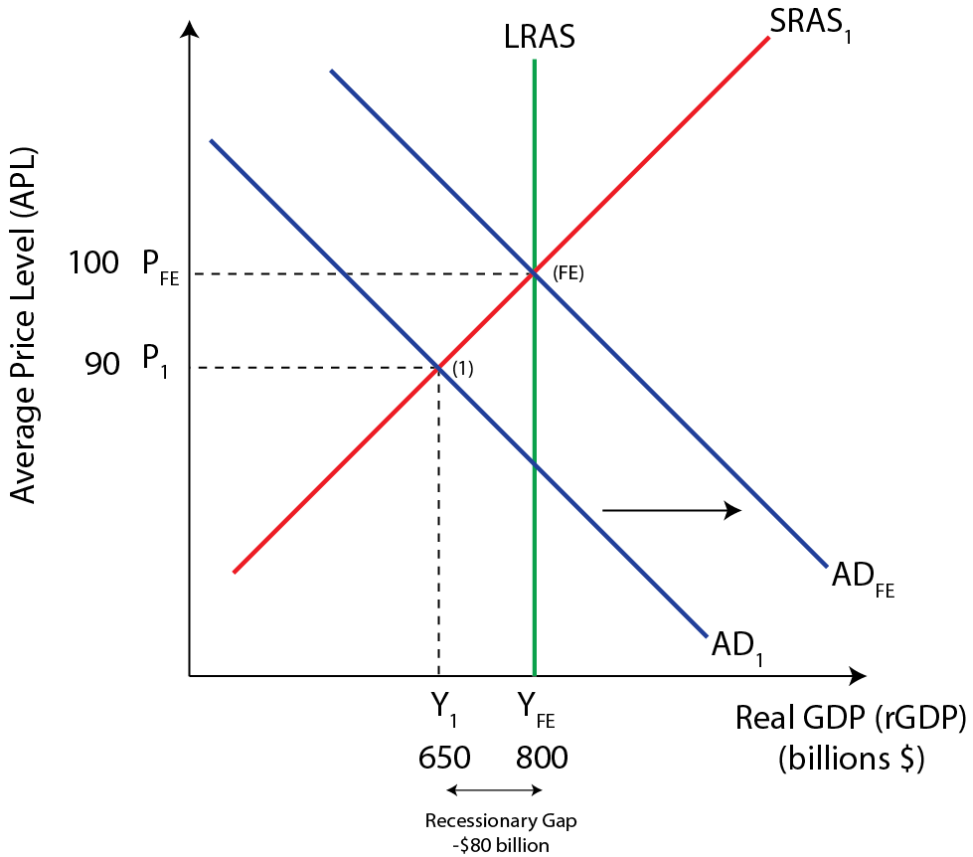
- Changes in government purchases affect AD directly, and changes in taxes and transfers affect AD indirectly.
  - Government purchases involves money being directly injected into a country's circular flow of income
  - When the government cuts taxes a smaller stimulus results as only a proportion of the tax cut or transfer will be spent on new goods and services, while a proportion will be saved by those who receive the money.

Expansionary Fiscal Policy

- Expansionary or contractionary fiscal policies are used to restore full employment when the economy is in a negative or positive output gap.
- **Expansionary fiscal policy:** refers to fiscal policy usually pursued in a recession, involving an increase in government spending or a decrease in taxes (or both).
  - It works to expand aggregate demand and the level of economic activity
    - Increasing government spending
    - Decreasing personal income taxes
    - Decreasing business taxes (taxes on profits)
  - Fiscal stimulus increases AD, the price level, and the level of real output
  - Unemployment falls as the recession ends, returning to its natural rate (NRU), and those who were cyclically unemployed are rehired.

Expansionary Fiscal Policy: Example

Example: Assume the country is in a recession and economists estimate its equilibrium real GDP is \$150 million below its full employment GDP and that the MPC is 0.5

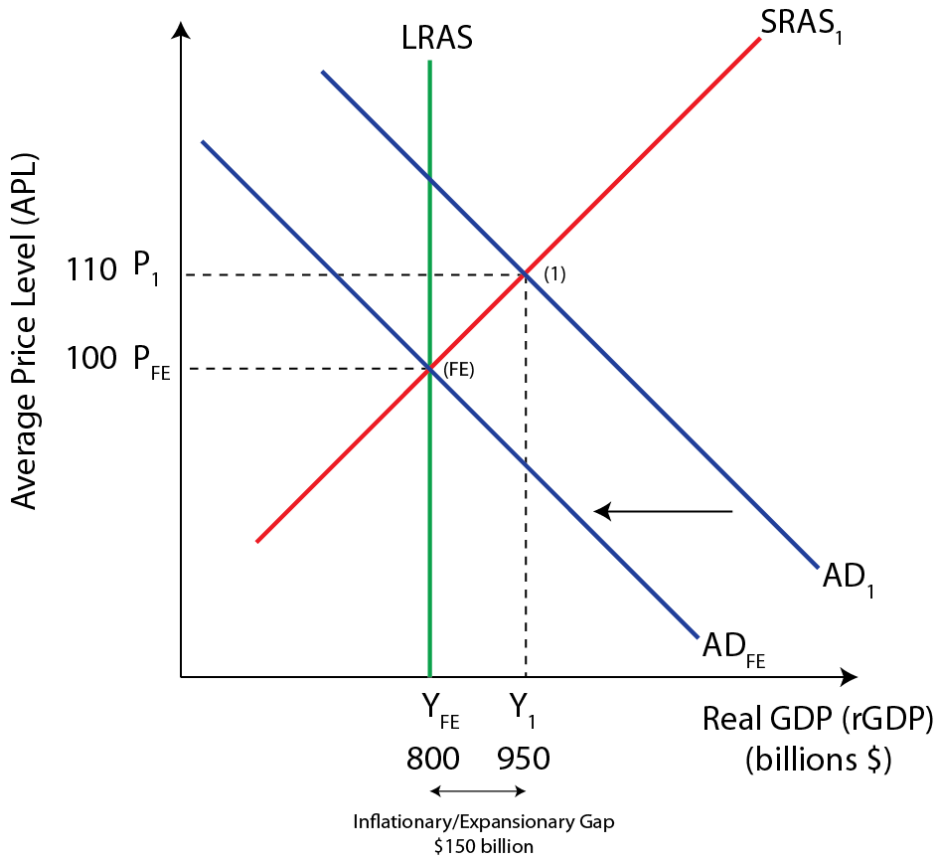


Contractionary Fiscal Policy

- **Contractionary fiscal policy:** refers to fiscal policy usually pursued in an inflationary period, involving a decrease in government spending or an increase in taxes (or both)
  - It works to contract aggregate demand and the level of economic activity.
    - Decreasing government spending
    - Increasing personal income taxes
    - Increasing business taxes (taxes on profits)
  - Contractionary fiscal policies can be employed to cool-down an overheating economy and close an inflationary gap.
  - Increasing income taxes leads to a decrease in disposable incomes and consumption among households, reducing AD, the price level, and the equilibrium level of national output.
  - Unemployment returns to its natural rate (NRU) at the full employment level of output.

Contractionary Fiscal Policy: Example

Example: Assume the country has an inflationary gap of \$150 million above its full employment GDP and that the MPC is 0.75.



Fiscal Policy: Constraints

- Fiscal policies do not always achieve the desired and expected impacts due to various factors.

1. **Problems of time lags:** there are expected time lags to discretionary fiscal policy such as the time it takes to decide on and implement a policy action. There are a number of time delays until:
   - the problem is recognized by government authorities and economists
   - the appropriate policy to deal with the problem is decided upon
   - the policy takes effect in the economy
2. **Political constraints:** government spending and taxation face numerous political pressures. Therefore, political factors may sometimes lead to unsuitable fiscal policies.
3. **Sustainable debt:** refers to a level of debt where a borrowing government can meet its present and future debt obligations without accumulating overdue debt payments.

Fiscal Policy: Constraints

4. **Tax cuts may be ineffective during a recession:** tax cuts are less effective during a recession than increases in government spending because part of the increase in after-tax income is saved.

5. **Inability to "fine tune" the economy:** fiscal policy cannot be used to reach a precise target with respect to the level of output, employment, and the price level.

6. **May be inflationary:** if aggregate demand increases beyond what is necessary to eliminate a deflationary/inflationary gap then it made be inflationary.

7. **Inability to deal with cost push inflation or stagflation:** fiscal policy is a demand-side policy, and therefore unable to deal effectively with supply-side causes of instability.

Fiscal Policy: Constraints

7. **Crowding-out:** refers to the possible impact on real GDP of increased government spending (expansionary fiscal policy) financed by borrowing.
    - If increased government borrowing results in a higher rate of interest, this could reduce private investment spending, thus reversing the impacts of the government's expansionary fiscal policy.

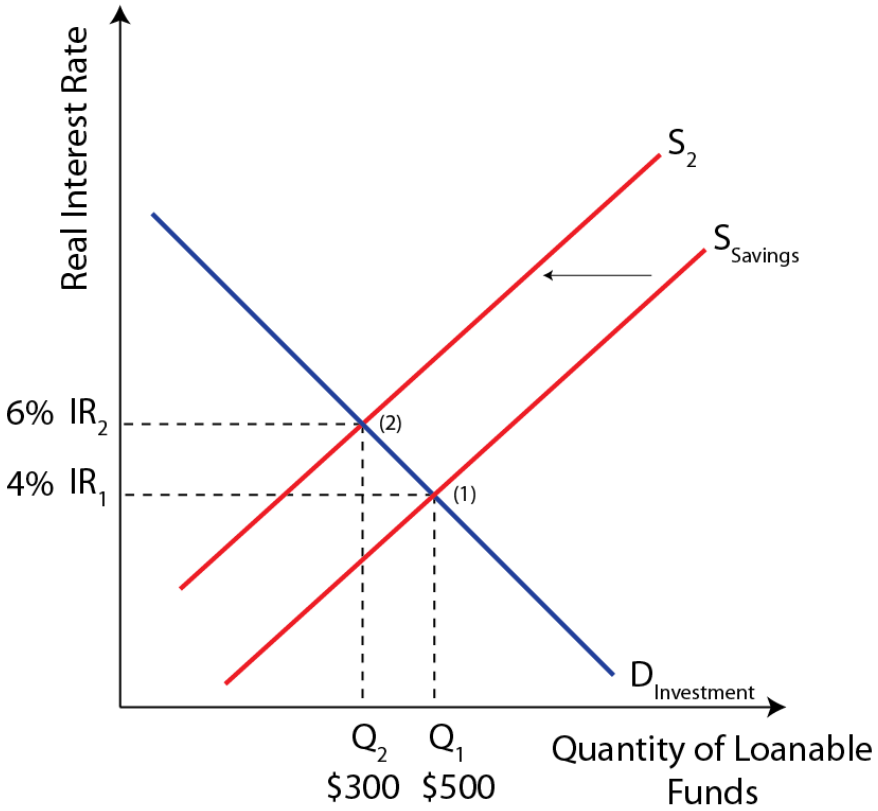
Crowding Out

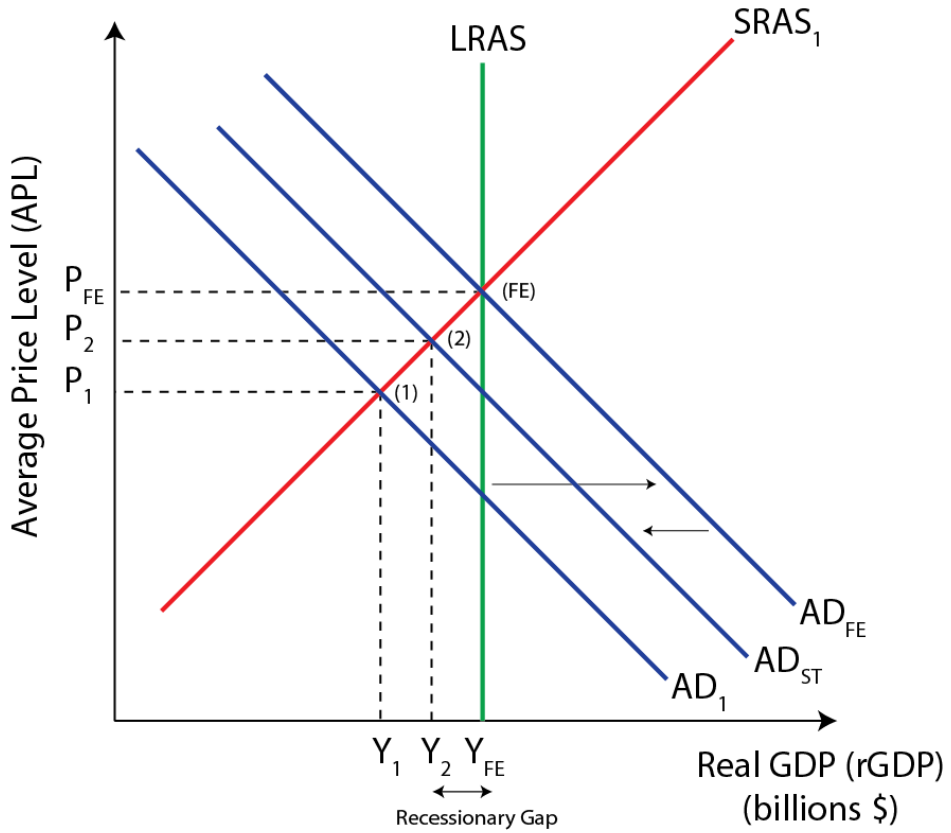
- **Crowding Out** refers to the possible impact on real GDP of increased government spending (expansionary fiscal policy) financed by borrowing.
- If increased government borrowing results in a higher rate of interest, this could reduce private investment spending, thus reversing the impacts of the government's expansionary fiscal policy.
  - A government with an expansionary fiscal policy either increases spending or decreases taxes or does both simultaneously.
  - Such a policy would be aimed at stimulating aggregate demand to achieve an increase in output and employment.
  - This typically requires the government to borrow money to finance the resulting budget deficit (when tax revenues fall short of total government spending).

Crowding Out

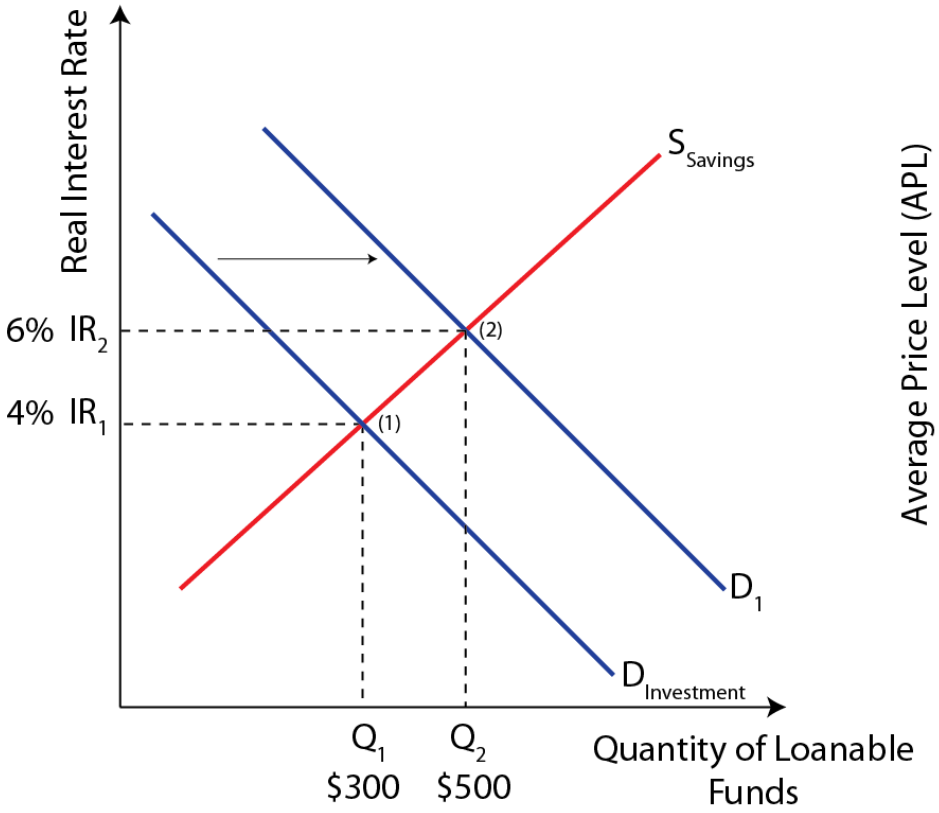
- When a government borrows money to pay for a tax cut or an increase in government spending (or both), the supply of loanable funds in the economy decreases.
- The increased supply of government bonds needed to finance the deficit causes bond prices to fall and bond yields to increase, making bonds a more attractive asset for households to invest in relative to bank savings deposit.
- The corresponding decrease in the supply of private sector savings causes an increase in the real interest rate and a decrease in the quantity of investment demand in the economy.
- As more households invest their savings in government bonds, the supply of loanable funds in the private sector decreases, leading to higher interest rates.
- As borrowing costs are now higher, households and firms that may have been willing to invest at lower rates are now "crowded out" of the market, and overall private sector investment falls.

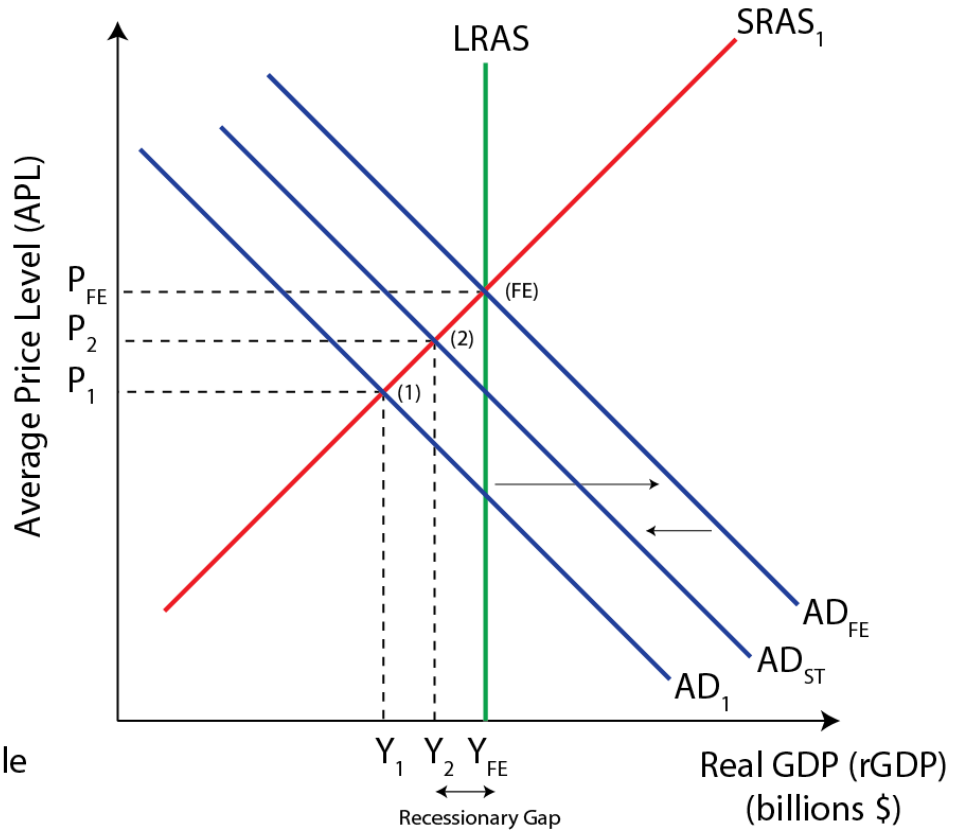
Crowding Out: Decreased Supply of Loanable Funds





Crowding Out: Increased Demand for Loanable Funds





Crowding Out: Consequences

- The crowding-out effect highlights a potential downside of government intervention in an economy in recession.
  - If crowding out occurs, then the expansionary effects of a fiscal stimulus will be smaller than forecast.
  - A potential long-run impact of crowding out is a lower rate of capital accumulation and less economic growth as a result.

Fiscal Policy: Strengths

1. **Pulling an economy out of a deep recession:** severe recessions and depressions with low levels of output and incomes and high-levels of unemployment over long periods of time may remain not be able to be resolved by market forces alone.

2. **Ability to target sectors of the economy:** fiscal policy can target spending in specific sectors according to government priorities.

3. **Direct impact of government spending on aggregate demand:** changes in government spending impact directly on aggregate demand.

4. **Dealing with rapid escalating inflation:** inflationary pressures arising when there is an inflationary gap can sometimes get out of hand, resulting in rapid increases in the price level.

    - Contractionary fiscal policy may then be used effectively to help bring the problem under control.

Fiscal Policy: Strengths

5. **Ability to affect potential output:** fiscal policy can affect potential output indirectly (by creating a stable macroeconomic environment) and directly through investments in human capital and physical capital (investment) and through offering incentives to firms to invest.

6. **Automatic stabilizers:** automatic stabilizes are factors that automatically, without any action by the government, work toward stabilizing the economy by reducing short-term fluctuations in the business cycle.

   - **Progressive taxation:** income taxes are progressive when the fraction of income that is taxed increases as income increases.
   - **Unemployment benefits:** are payments made by a government or a labour union to an unemployed person.

Automatic Stabilizers

- **Automatic Stabilizers:** are factors that automatically, without any action by the government authorities, work toward stabilizing the economy by reducing short-term fluctuations in the business cycle.
  - **Progressive taxation:** income taxes are progressive when the fraction of income that is taxed increases as income increases.
    - In the upswing of the business cycle, as real GDP and incomes rise, income taxes rise proportionately more than the rise in income, causing after-tax (disposable) income to be lower than it would be otherwise.
    - This means aggregate demand increases less, and this counteracts the economic expansion, making it smaller than it would otherwise be.
    - In a recession, the opposite occurs. With real GDP and incomes falling, income taxes fall proportionately more in a progressive tax system causing after-tax (disposable) income to be higher than it would otherwise be.
    - Therefore aggregate demand falls less, making the recession less severe.

Automatic Stabilizers

- The more progressive an income tax system, the greater the stabilizing effect on economic activity.
- A progressive taxation system and unemployment benefits cannot by themselves stabilize the economy and eliminate inflationary and expansionary gaps on their own. They can only reduce fluctuations.

- **Unemployment benefits:** are payments made by a government or a labour union to an unemployed person.
  - In a recession, as GDP falls and unemployment increases, unemployment benefits rise.
  - The presence of unemployment benefits means that as workers become unemployed, their consumption will be maintained to some extent as their benefits partially replace their lost income, thus lessening the downward pressure on aggregate demand.
  - In an expansion, unemployment benefits are reduced as unemployment falls; therefore consumption increases less than it would in the absence of unemployment benefits

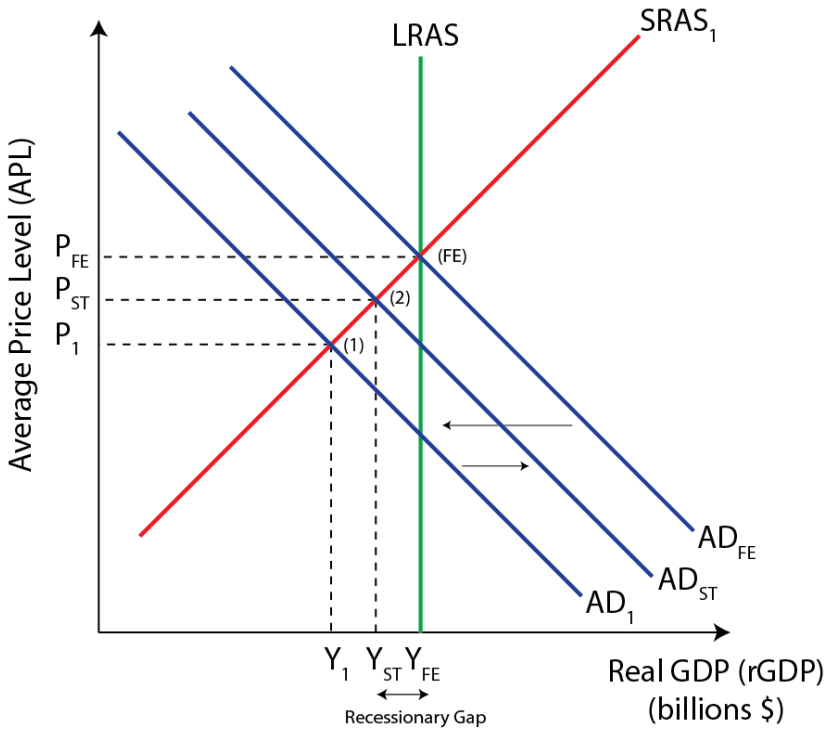
Automatic Stabilizers: Negative Demand Shock

- Consider what happens following a negative demand shock resulting from a decrease in aggregate demand.

1. As AD falls, workers are laid off due to inflexible wages and other input costs in the short-run.
2. Unemployed workers who have lost their income stop paying income taxes, so there is an automatic decrease in the taxes collected by the government.
3. As long as AD, remains weak, workers will remain unemployed and many will begin collecting unemployment benefits from the government; there is an automatic increase in transfers as AD falls.
4. During a demand-deficient recession, tax revenues decrease automatically as GDP falls, preventing consumption and the economy from falling further.

Automatic Stabilizers: Negative Demand Shock

5. At the same time, transfers payments increase, helping maintain consumption among those who have lost their jobs.
6. The effect of these automatic stabilizers is to steady AD and prevent it from falling as much as it would if these effects has not contributed.



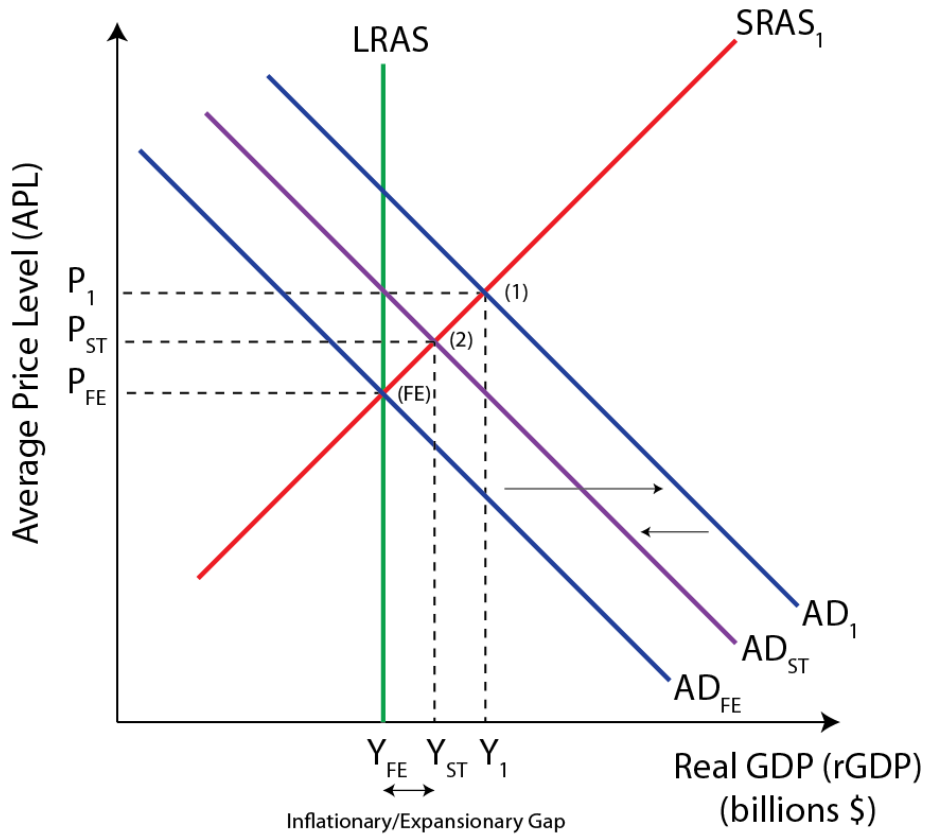
Automatic Stabilizers: Positive Demand Shock

- Consider what happens when an economy already producing at full employment experiences a positive demand shock resulting from a increase in aggregate demand.

1. As AD increases, workers who were structurally or frictionally unemployed will be hired by firms producing capital goods, causing unemployment to fall below its natural rate.
2. Newly employed workers start paying income tax, automatically increasing tax revenues for the government.
3. Since they are no longer unemployed, the same workers will stop collecting unemployment benefits from the government, automatically reducing the amount the government pays in transfers.
4. During an expansion, tax revenues increase automatically as GDP rises, slowing consumption and preventing the economy from overheating.

Automatic Stabilizers: Positive Demand Shock

5. At the same time, transfer payments decrease, helping consumption from rising more than it otherwise would.



Expenditure (Spending) Multiplier

- **Keynesian spending multiplier:** tells us the amount by which a particular expenditure of consumption (C), government spending (G), investment (I), or net exports (X − M) will increase the nations total GDP.
  - Spending by one person represents income to another, so an expenditure leads to a more than proportional increase in GDP.
  - The expenditure multiplier quantifies the size of the change in AD as a result of a change in any of the components of AD.
  - To estimate the size of the expenditure multiplier, we must know how much of any change in income the typical household will use to buy goods and services.
    - **Marginal propensity to consume (MPC):** is the fraction of additional income that households spend on consumption of domestically produced goods and services. $MPC = \Delta C/\Delta Y$.

Expenditure (Spending) Multiplier

- **Marginal propensity to save (MPS):** is the fraction of additional income that households save. $\text{MPC} = \Delta\text{S}/\Delta\text{Y}$.
- **Marginal propensity to tax (MPT):** is the fraction of additional income taxes. $\text{MPC} = \Delta\text{T}/\Delta\text{Y}$.
- **Marginal propensity to import (MPM):** is the fraction of additional income that households spend on imported goods and services. $\text{MPM} = \Delta\text{M}/\Delta\text{Y}$.
- **Note:** $\text{MPC} + \text{MPS} + \text{MPT} + \text{MPM} = 1$

- The value of the expenditure multiplier is given by:

$$k_{\text{Expenditure}} = \text{Multiplier} = \frac{\Delta\text{Real GDP}}{\Delta\text{Expenditure}} = \frac{1}{1-\text{MPC}} = \frac{1}{\text{MPS}+\text{MPT}+\text{MPM}}$$

$$\Delta\text{Real GDP} = \Delta\text{AD} = \text{Expenditure Multiplier} \times \Delta\text{Expenditure}$$

- The larger (smaller) the marginal propensity to consume (MPC), the greater the value of the multiplier. The smaller (larger) the leakages from the spending stream, the greater (smaller) the multiplier.

Expenditure (Spending) Multiplier

- The following table shows the multiplier calculations for different marginal propensities to consume:

MPC	Spending Multiplier (k)	Effect on GDP of \$1 billion rise in AD
0.9	$1/0.1=10$	$\$1 \times 10 = \$10$ billion
0.6	$1/0.0.4=2.5$	$\$1 \times 2.5 = \$2.5$ billion
0.5	$1/0.5=2$	$\$1 \times 2 = \$2$ billion
0.4	$1/0.6=1.67$	$\$1 \times 1.67 = \$1.67$ billion
0.2	$1/0.8=1.25$	$\$1 \times 1.25 = \$1.25$ billion

Tax Multiplier

- The tax multiplier quantifies the size of the change in AD as a result of a change in taxes.
  - The initial tax cut will result in increased consumption, which leads to an increase in incomes and a further increase in consumption.
    - Lower taxes mean more income which leads to more consumption and more income.
    - The initial change in taxes is "multiplied" throughout the economy by a factor determined by the amount by which households increase their consumption in response to a particular increase in disposable income.
    - The tax multiplier is a function of the marginal propensities to consume and save:

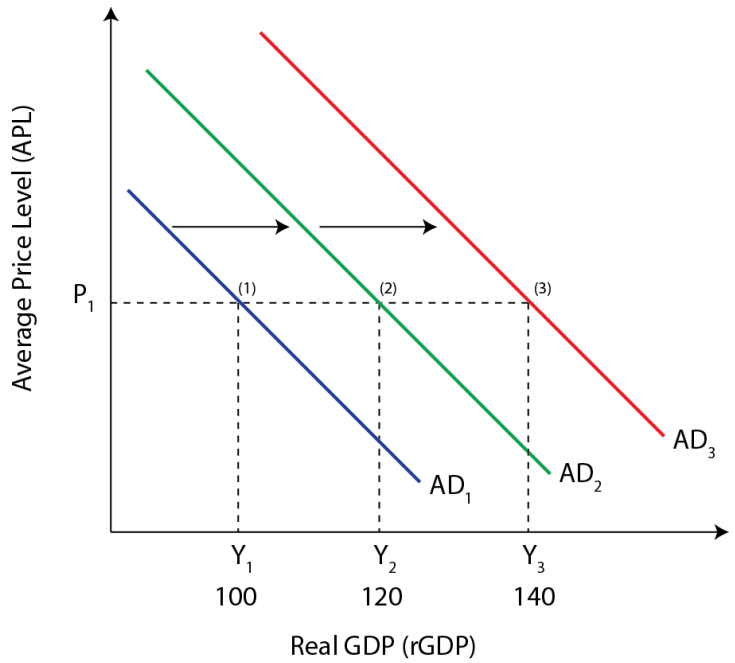
$$k_{Tax} = \text{Tax Multiplier} = \frac{-MPC}{MPS}$$

$$\Delta\text{Real GDP} = \Delta AD = \text{Tax Multiplier} \times \Delta\text{Taxes}$$

    - The tax multiplier is negative because there is an inverse relationship between taxes and spending.

Expenditure & Tax Multipliers: AS/AD Model

- The impact of the expenditure and tax multipliers can be shown in an AS/AD model.
  - Assume the MPC is 0.5 and the multiplier is 2.
  - An increase in investment of \$20 billion will initially shift the AD curve out by \$20 billion. Ultimately, the AD curve shifts out by \$40 billion.



Summary

- **Enduring Understanding**
  - Fiscal and monetary policy have short-run effects on macroeconomic outcomes.
- **Essential Knowledge**
  - Governments implement fiscal policies to achieve macroeconomic goals, such as full employment.
  - The tools of fiscal policy are government spending and taxes/transfers.
  - Changes in government spending affect aggregate demand directly, and changes in taxes/transfers affect aggregate demand indirectly.
  - The government spending multiplier is greater than the tax multiplier.
  - Expansionary or contractionary fiscal policies are used to restore full employment when the economy is in a negative (i.e., recessionary) or positive (i.e., inflationary) output gap.

Summary (Continued)

- Fiscal policy can influence aggregate demand, real output, and the price level.
- The AD–AS model is used to demonstrate the short-run effects of fiscal policy.
- In reality, there are lags to discretionary fiscal policy because of factors such as the time it takes to decide on and implement a policy action.
- When a government is in budget deficit, it typically borrows to finance its spending.
- A loanable funds market model can be used to show the effect of government borrowing on the equilibrium real interest rate and the resulting crowding out of private investment.
- Crowding out refers to the adverse effect of increased government borrowing, which leads to decreased levels of interest-sensitive private sector spending in the short run.

Summary (Continued)

- Automatic stabilizers support the economy during recessions and help prevent the economy from being overheated during expansionary periods.
- Tax revenues decrease automatically as GDP falls, preventing consumption and the economy from falling further.
- Tax revenues increase automatically as GDP rises, slowing consumption and preventing the economy from overheating.
- Government policies, institutions, or agencies may also have social service programs whose transfer payments act as automatic stabilizers.
- A \$1 change to autonomous expenditures leads to further changes in total expenditures and total output.

Summary (Continued)

- The expenditure multiplier quantifies the size of the change in aggregate demand as a result of a change in any of the components of aggregate demand.
- The tax multiplier quantifies the size of the change in aggregate demand as a result of a change in taxes.
- The expenditure multiplier and tax multiplier depend on the marginal propensity to consume.
- The marginal propensity to consume is the change in consumer spending divided by the change in disposable income. The sum of the marginal propensity to consume and marginal propensity to save is equal to one.