

MACROECONOMICS I

The Influence of Monetary and Fiscal Policy on Aggregate Demand

Lecture 10

May 13, 2022

LOOK FOR THE ANSWERS TO THESE QUESTIONS:

How does the interest-rate effect help explain the slope of the aggregate-demand curve?

How can the central bank use monetary policy to shift the AD curve?

In what two ways does fiscal policy affect aggregate demand?

What are the arguments for and against using policy to try to stabilize the economy?

INTRODUCTION

Earlier chapters covered:

- Long-run effects of fiscal policy on interest rates, investment, economic growth
- Long-run effects of monetary policy on the price level and inflation rate

This chapter focuses on

- Short-run effects of fiscal and monetary policy, which work through aggregate demand

AGGREGATE DEMAND

Recall, the AD curve slopes downward for three reasons:

- The wealth effect
- The interest-rate effect
- The exchange-rate effect

the most important
of these effects for
the U.S. economy

Next:

- A supply-demand model that helps explain the interest-rate effect and how monetary policy affects aggregate demand.

THEORY OF LIQUIDITY PREFERENCE

The theory of liquidity preference

- A simple theory of the interest rate (r)
 - r adjusts to balance supply and demand for money
 - Nominal interest rate, real interest rate
- Assumption: expected rate of inflation is constant

Money supply:

- Assumed fixed by central bank, does not depend on interest rate

THEORY OF LIQUIDITY PREFERENCE

Money demand

- Reflects how much wealth people want to hold in liquid form
- Assume household wealth includes only two assets:
 - Money – liquid but pays no interest
 - Bonds – pay interest but not as liquid
- A household’s “money demand” reflects its preference for liquidity

THEORY OF LIQUIDITY PREFERENCE

Variables that influence money demand:

- Y , r , and P .

Suppose real income (Y) rises:

- Households want to buy more goods and services, so they need more money
- To get this money, they attempt to sell some of their bonds.

An increase in Y causes an increase in money demand, other things equal.

ACTIVE LEARNING 1

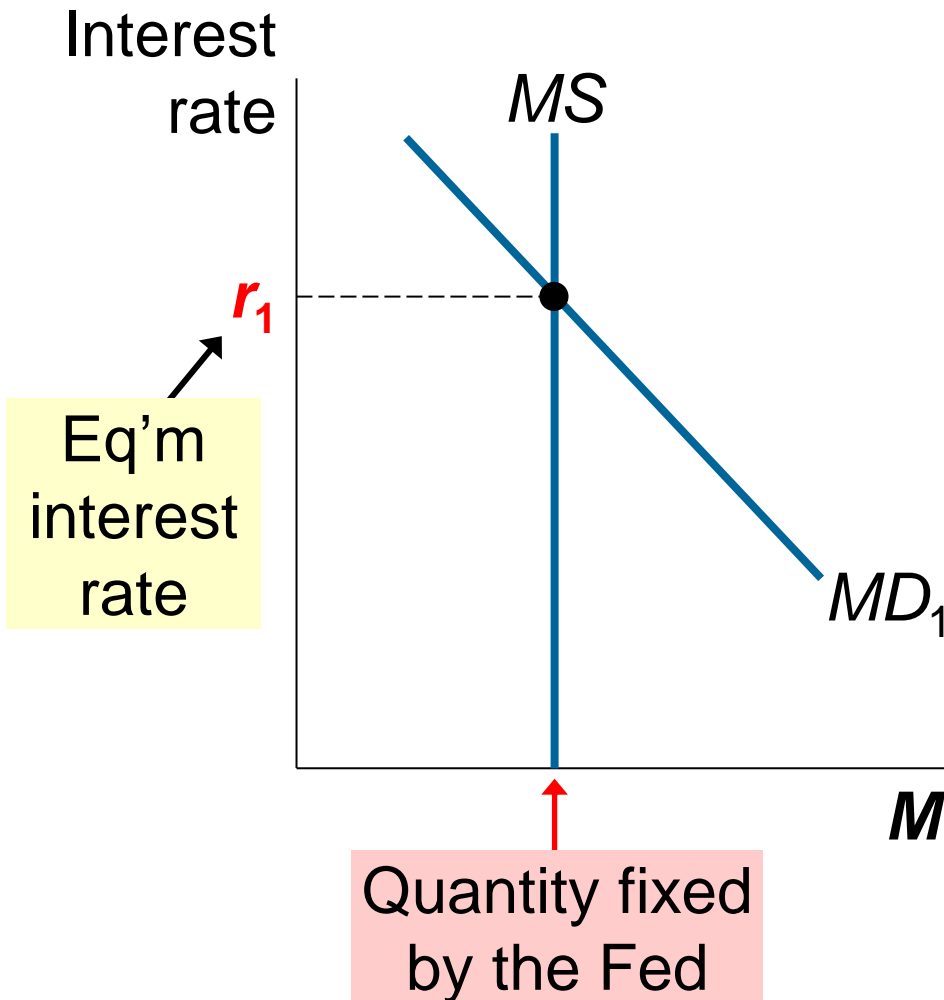
THE DETERMINANTS OF MONEY DEMAND

- A. Suppose r rises, but Y and P are unchanged. What happens to money demand?
- B. Suppose P rises, but Y and r are unchanged. What happens to money demand?

- A. Suppose r rises, but Y and P are unchanged. What happens to money demand?
- r is the opportunity cost of holding money.
 - An increase in r reduces money demand: households attempt to buy bonds to take advantage of the higher interest rate.
 - Hence, an increase in r causes a decrease in money demand, other things equal.

- B. Suppose P rises, but Y and r are unchanged. What happens to money demand?
- If Y is unchanged, people will want to buy the same amount of goods and services.
 - Since P is higher, they will need more money to do so.
 - Hence, an increase in P causes an increase in money demand, other things equal.

HOW R IS DETERMINED



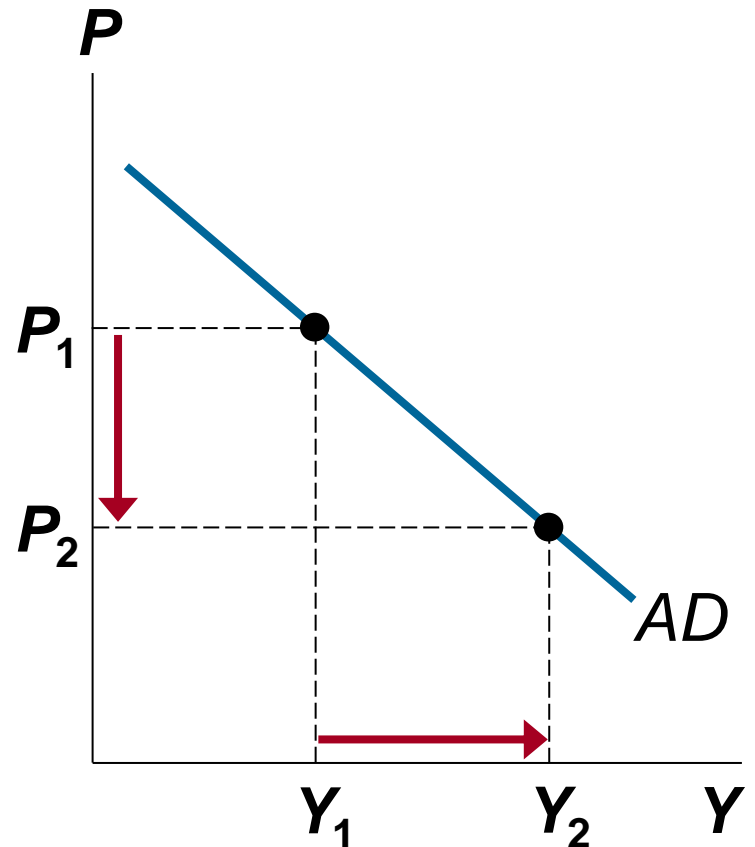
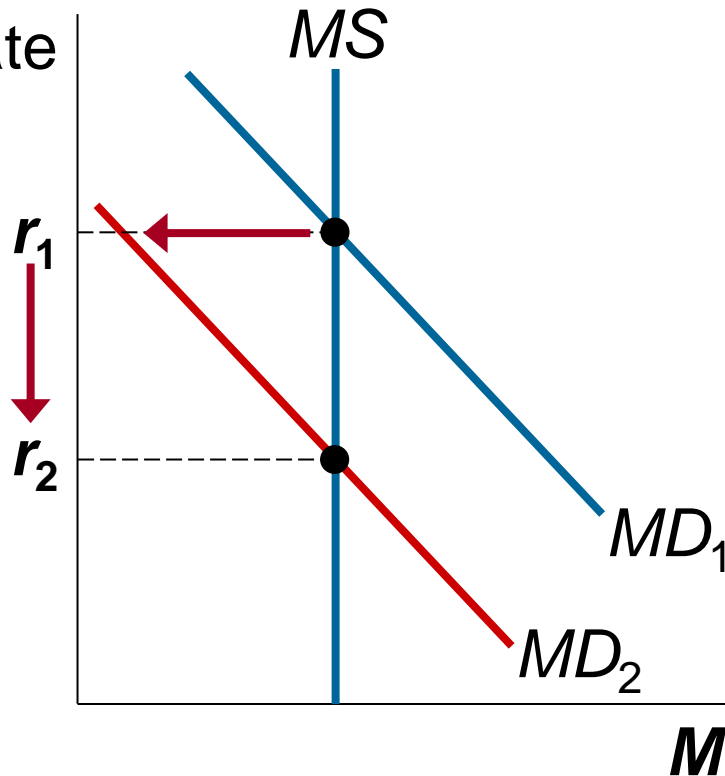
MS curve is vertical:
Changes in r does not affect MS , which is fixed by the Fed.

MD curve is downward sloping:
A fall in r increases money demand.

A fall in P reduces money demand, which lowers r .

HOW THE INTEREST-RATE EFFECT WORKS

Interest rate



A fall in r increases I and the quantity of g&s demanded.

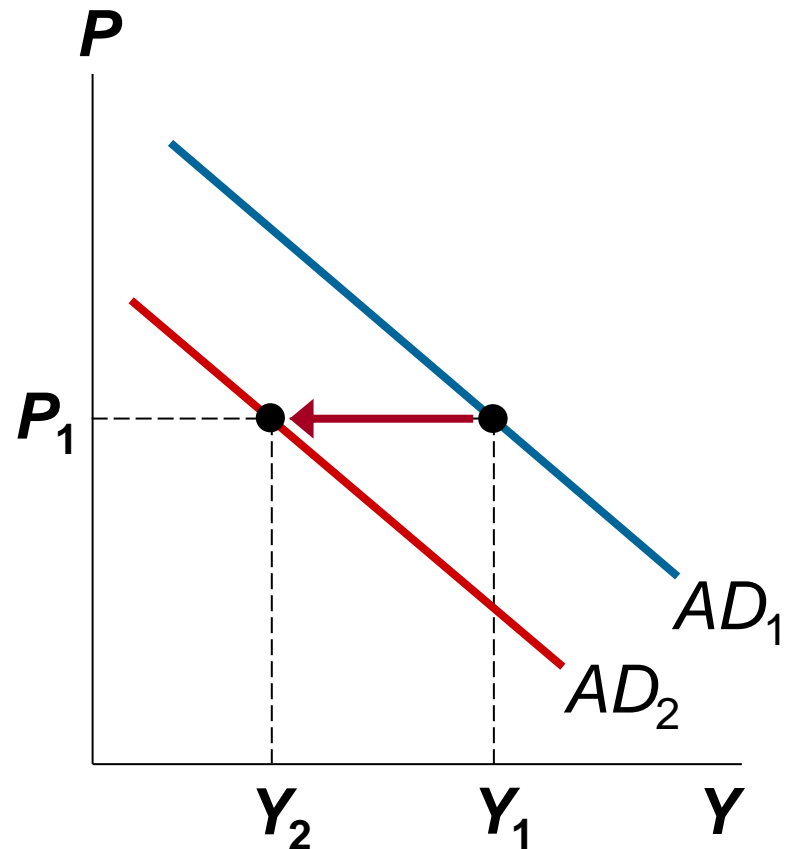
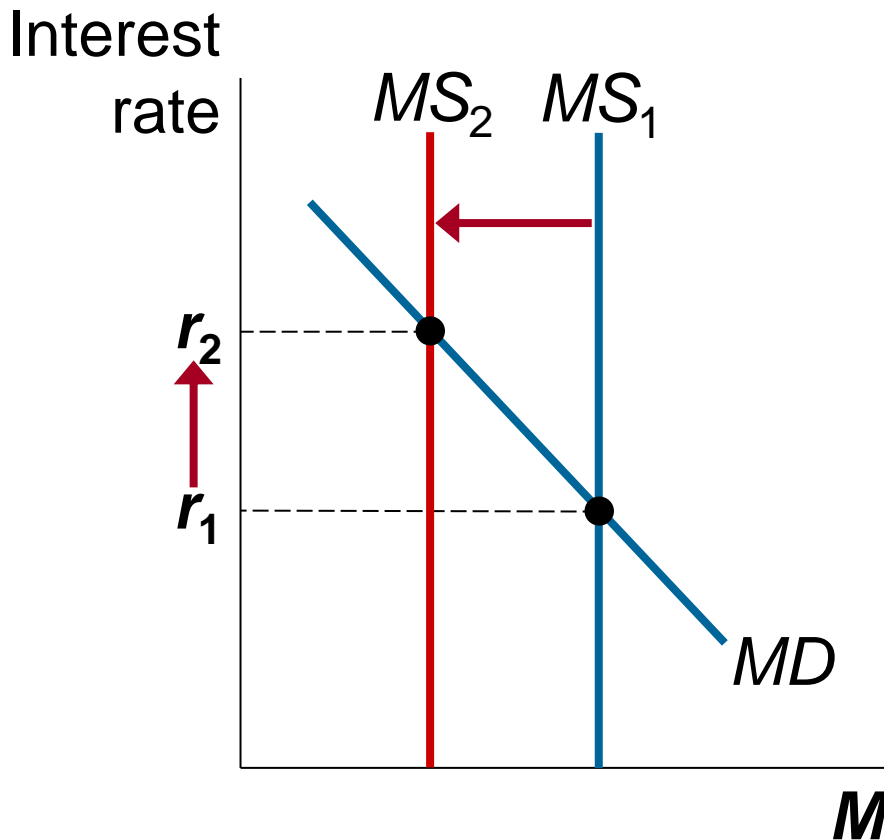
MONETARY POLICY AND THE AD

The Fed

- Uses monetary policy to shift the AD curve
- Policy instrument: the money supply (MS)
- Targets the interest rate: the federal funds rate
- Banks charge each other on short-term loans
- Conducts open market operations to change MS

THE EFFECTS OF REDUCING THE MONEY SUPPLY

The Fed can raise r by reducing the money supply.



An increase in r reduces the quantity of g&s demanded.

For each of the events below,

- Determine the short-run effects on output
 - Determine how the Fed should adjust the money supply and interest rates to stabilize output
- A.** Congress tries to balance the budget by cutting government spending.
- B.** A stock market boom increases household wealth.

ACTIVE LEARNING 2

ANSWERS

A. Congress tries to balance the budget by cutting government spending.

- This event would reduce aggregate demand and output.
- To stabilize output, the Fed should increase MS and reduce r to increase aggregate demand.

- B. A stock market boom increases household wealth.
- This event would increase aggregate demand, raising output above its natural rate.
 - To stabilize output, the Fed should reduce MS and increase r to reduce aggregate demand.

LIQUIDITY TRAPS

Liquidity trap

- If interest rates have already fallen to around zero
- Monetary policy may no longer be effective, since nominal interest rates cannot be reduced further
 - Aggregate demand, production, and employment may be "trapped" at low levels

LIQUIDITY TRAPS

A central bank continues to have tools to expand the economy:

- Forward guidance: raise inflation expectations by committing to keep interest rates low
- Quantitative easing: buy a larger variety of financial instruments (mortgages, corporate debt, and longer-term government bonds) (The Fed, 2008)

FISCAL POLICY AND THE AD

Fiscal policy:

- Setting the level of government spending and taxation by government policymakers

Expansionary fiscal policy

- An increase in G and/or decrease in T , shifts AD right

Contractionary fiscal policy

- A decrease in G and/or increase in T , shifts AD left

Fiscal policy has two effects on AD...

1. THE MULTIPLIER EFFECT

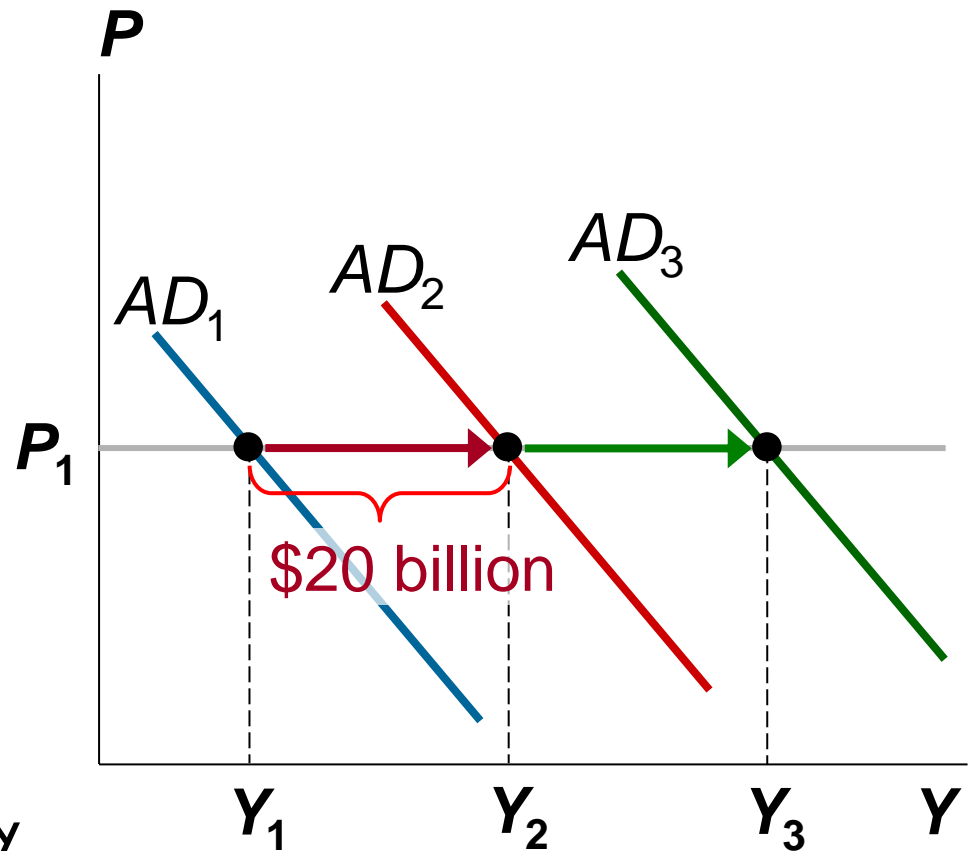
Example: If the government buys \$20b of planes from Boeing, Boeing's revenue increases by \$20b.

- This is distributed to Boeing's workers (as wages) and owners (as profits or stock dividends).
- These people are also consumers and will spend a portion of the extra income.
- This extra consumption causes further increases in aggregate demand.

1. THE MULTIPLIER EFFECT

A \$20b increase in G initially shifts AD to the right by \$20b. The increase in Y causes C to rise, which shifts AD further to the right.

Multiplier effect: the additional shifts in AD that result when fiscal policy increases income and thereby increases consumer spending



MARGINAL PROPENSITY TO CONSUME

How big is the multiplier effect?

- Depends on how much consumers respond to increases in income.

Marginal propensity to consume, $MPC = \Delta C / \Delta Y$

- Fraction of extra income that households consume rather than save

Example

- If $MPC = 0.8$ and income rises \$100, C rises \$80.

A FORMULA FOR THE MULTIPLIER

The size of the multiplier depends on MPC .

E.g., if $MPC = 0.5$ multiplier = 2
 if $MPC = 0.75$ multiplier = 4
 if $MPC = 0.9$ multiplier = 10

$$\Delta Y = \frac{1}{1 - MPC} \Delta G$$

The multiplier

A bigger MPC means changes in Y cause bigger changes in C , which in turn cause bigger changes in Y .

OTHER APPLICATIONS OF THE MULTIPLIER EFFECT

The multiplier effect:

Each \$1 increase in **G** can generate more than a \$1 increase in aggregate demand.

Also true for the other components of GDP.

Example: Suppose a recession overseas reduces demand for U.S. net exports by \$10b.

- Initially, aggregate demand falls by \$10b.
- The fall in Y causes C to fall, which further reduces aggregate demand and income.

2. THE CROWDING-OUT EFFECT

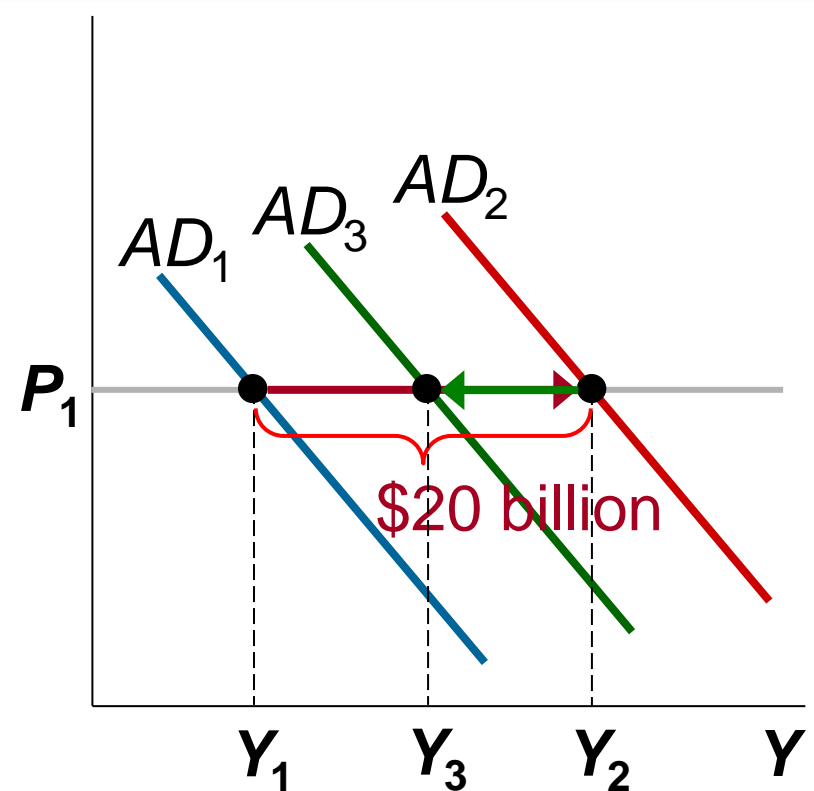
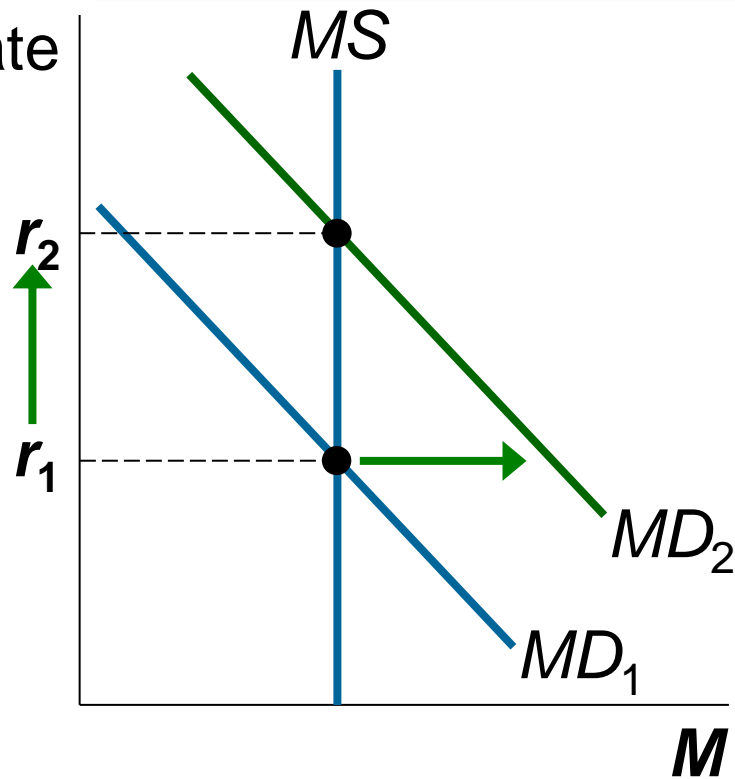
The crowding-out effect

- Offset in aggregate demand
- Results when expansionary fiscal policy raises the interest rate
- Thereby reduces investment spending
- Which reduces the net increase in aggregate demand.
- So, the size of the AD shift may be smaller than the initial fiscal expansion.

HOW THE CROWDING-OUT EFFECT WORKS

A \$20b increase in G initially shifts AD right by \$20b

Interest rate



But higher Y increases MD and r , which reduces AD .

CHANGES IN TAXES

A tax cut

- Increases households' take-home pay
- Households respond by spending a portion of this extra income, shifting AD to the right
- The size of the shift is affected by the multiplier and crowding-out effects

Another factor: households perception

- Permanent tax cut – large impact on AD
- Temporary tax cut – small impact on AD

The economy is in recession.

Shifting the AD curve rightward by \$200b would end the recession.

- A. If $MPC = .8$ and there is no crowding out, how much should Congress increase G to end the recession?
- B. If there is crowding out, will Congress need to increase G more or less than this amount?

The economy is in recession.

Shifting the AD curve rightward by \$200b would end the recession.

A. If $MPC = .8$ and there is no crowding out, how much should Congress increase G to end the recession?

- Multiplier = $1 / (1 - .8) = 5$
- Increase G by \$40b to shift aggregate demand by $5 \times \$40b = \$200b$.

The economy is in recession.

Shifting the AD curve rightward by \$200b would end the recession.

- B.** If there is crowding out, will Congress need to increase G more or less than this amount?
- Crowding out reduces the impact of G on AD.
 - To offset this, Congress should increase G by a larger amount.

THE CASE FOR ACTIVE STABILIZATION POLICY

Keynes: “Animal spirits” cause waves of pessimism and optimism among households and firms, leading to shifts in aggregate demand and fluctuations in output and employment.

Also, other factors cause fluctuations,

- Booms and recessions abroad
- Stock market booms and crashes

If policymakers do nothing

- These fluctuations are destabilizing to businesses, workers, consumers.

THE CASE FOR ACTIVE STABILIZATION POLICY

Proponents of active stabilization policy

- Government should use policy to reduce these fluctuations:
 - When GDP falls below its natural rate, use expansionary monetary or fiscal policy to prevent or reduce a recession.
 - When GDP rises above its natural rate, use contractionary policy to prevent or reduce an inflationary boom

THE CASE AGAINST ACTIVE STABILIZATION POLICY

Monetary policy affects economy with a long lag:

- Firms make investment plans in advance, so I takes time to respond to changes in r
- Most economists believe it takes at least 6 months for monetary policy to affect output and employment

Fiscal policy also works with a long lag:

- Changes in G and T require acts of Congress.
- Legislative process can take months or years

THE CASE AGAINST ACTIVE STABILIZATION POLICY

Due to these long lags

- Critics of active policy argue that such policies may destabilize the economy rather than help it:
 - By the time the policies affect aggregate demand, the economy's condition may have changed.
 - Contend that policymakers should focus on long-run goals like economic growth and low inflation.

AUTOMATIC STABILIZERS

Automatic stabilizers:

- Changes in fiscal policy that stimulate aggregate demand when economy goes into recession
- Without policymakers having to take any deliberate action

AUTOMATIC STABILIZERS: EXAMPLES

The tax system

- In recession, taxes fall automatically, which stimulates aggregate demand

Government spending

- In recession, more people apply for public assistance (welfare, unemployment insurance)
- Government spending on these programs automatically rises, which stimulates aggregate demand

CONCLUSION

When gvt cuts taxes

- Should consider the short-run effects on aggregate demand and employment
- And the long-run effects on saving and growth

When the CB reduces the rate of money growth

- Must take into account not only the long-run effects on inflation
- But the short-run effects on output and employment

SUMMARY

- Theory of liquidity preference: the interest rate adjusts to balance the demand for money with the supply of money.
- The interest-rate effect helps explain why the aggregate-demand curve slopes downward:
 - An increase in the price level raises money demand, which raises the interest rate, which reduces investment, which reduces the aggregate quantity of goods & services demanded.

SUMMARY

- An increase in the money supply causes the interest rate to fall, which stimulates investment and shifts the aggregate demand curve rightward.
- Expansionary fiscal policy—a spending increase or tax cut—shifts aggregate demand to the right. Contractionary fiscal policy shifts aggregate demand to the left.

SUMMARY

- When the government alters spending or taxes, the resulting shift in aggregate demand can be larger or smaller than the fiscal change:
 - The multiplier effect tends to amplify the effects of fiscal policy on aggregate demand.
 - The crowding-out effect tends to dampen the effects of fiscal policy on aggregate demand.

SUMMARY

- Economists disagree about how actively policymakers should try to stabilize the economy.
- Some argue that the government should use fiscal and monetary policy to combat destabilizing fluctuations in output and employment.
- Others argue that policy will end up destabilizing the economy because policies work with long lags.