CHAPTER 34

PRINCIPLES OF Economics

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Introduction

- This chapter focuses on the <u>short-run</u> 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.

The Theory of Liquidity Preference

- A simple theory of the interest rate (denoted ***r***)
- ***r*** adjusts to balance supply and demand for money
- Money supply: assume fixed by central bank, does not depend on interest rate

The Theory of Liquidity Preference

- Money demand reflects how much wealth people want to hold in liquid form.
- For simplicity, suppose household wealth includes only two assets:
  - (   ) – liquid but pays no interest
  - (   ) – pay interest but not as liquid
- A household's "money demand" reflects its *preference* for *liquidity*.
- The variables that influence money demand: ***Y***, ***r***, and ***P***.

Money Demand

- Suppose real income (***Y***) rises. Other things equal, what happens to money demand?
- If ***Y*** rises:
  - (   ) want to buy more g&s, so they need more money.
  - To get this money, they attempt to sell some of their bonds.
- *I.e.*, 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?

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ACTIVE LEARNING 1

Answers

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.

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ACTIVE LEARNING **1**

Answers

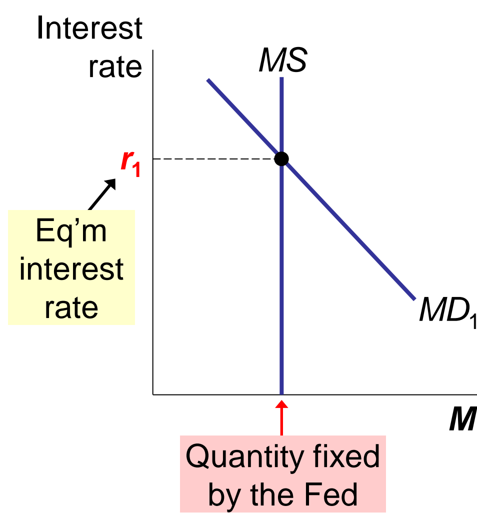
B. Suppose ***P*** rises, but ***Y*** and ***r*** are unchanged. What happens to money demand?

If ***Y*** is unchanged, people will want to buy the same amount of g&s.

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

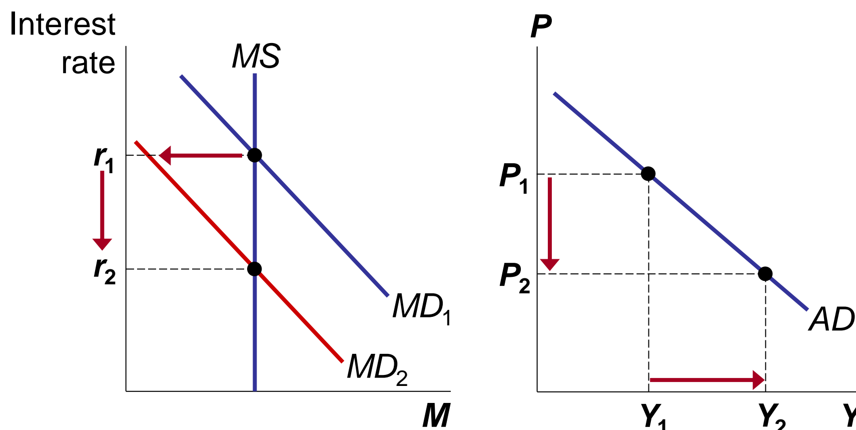


MS curve is vertical: Changes in ***r*** do not affect *MS*, which is fixed by the Fed.

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

How the Interest-Rate Effect Works

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



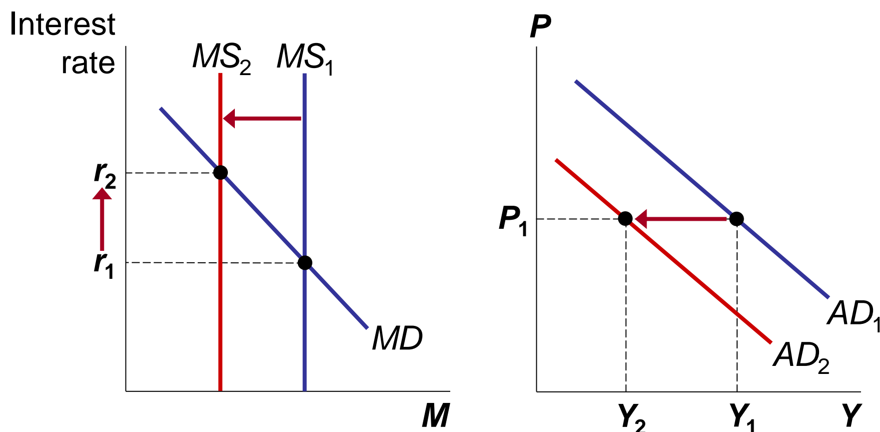
A fall in ***r*** increases ***I*** and the quantity of g&s demanded.

Monetary Policy and Aggregate Demand

- To achieve macroeconomic goals, the Fed can use monetary policy to shift the *AD* curve.
- The Fed's policy instrument is *MS*.
- The news often reports that the Fed targets the interest rate.
  - More precisely, the ( ) – which banks charge each other on short-term loans
- To change the interest rate and shift the *AD* curve, the Fed 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.

Fiscal Policy and Aggregate Demand

- ( ): the setting of the level of govt spending and taxation by govt policymakers
- **Expansionary** fiscal policy
  - an increase in G and/or decrease in T
  - shifts *AD* right
- ( ) 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

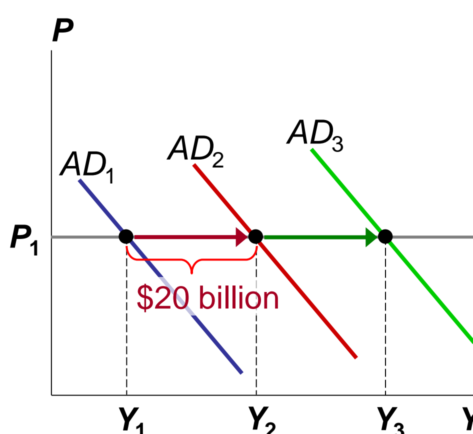
- If the govt buys $20b of planes from Boeing, Boeing's revenue increases by $20b.
- This is distributed to Boeing's workers (as wages) and owners (as profits or stock dividends).
- These people are also consumers and will spend a portion of the extra income.
- This extra consumption causes further increases in aggregate demand.

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

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.



Marginal Propensity to Consume

- How big is the multiplier effect?
  It depends on how much consumers respond to increases in income.
- **( ) to consume (MPC)**:
  the fraction of extra income that households consume rather than save

  E.g., if $MPC = 0.8$ and income rises $100,
  C rises $80.

A Formula for the Multiplier

Notation: $\Delta \boldsymbol{G}$ is the change in ***G***,
$\Delta \boldsymbol{Y}$ and $\Delta \boldsymbol{C}$ are the ultimate changes in ***Y*** and ***C***

$Y = C + I + G + NX$	identity
$\Delta Y = \Delta C + \Delta G$	***I*** and ***NX*** do not change
$\Delta Y = MPC\,\Delta Y + \Delta G$	because $\Delta C = MPC\,\Delta Y$
$\Delta Y = \dfrac{1}{1 - MPC}\Delta G$	solved for ΔY

The multiplier

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 more 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 agg demand.
- Also true for the other components of GDP.

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

  Initially, agg demand falls by $10b.

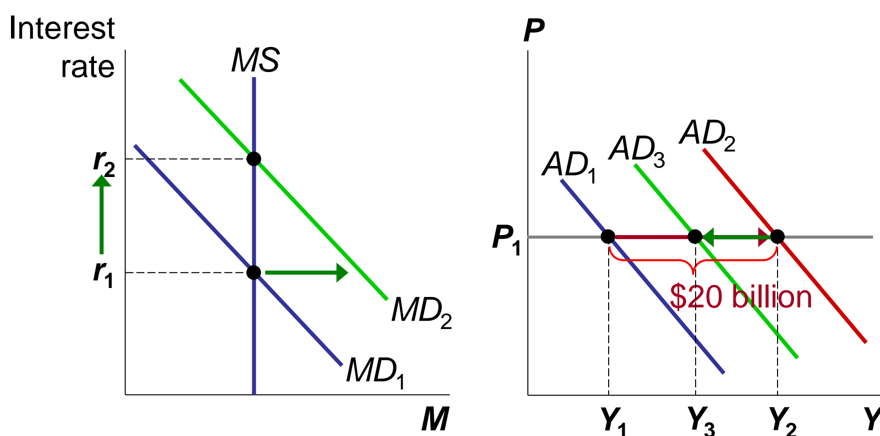
  The fall in ***Y*** causes ***C*** to fall, which further reduces agg demand and income.

2. The Crowding-Out Effect

- Fiscal policy has another effect on *AD* that works in the opposite direction.
- A fiscal expansion raises ***r***, which reduces investment, which reduces the net increase in agg demand.
- So, the size of the *AD* shift may be smaller than the initial fiscal expansion.
- This is called the **crowding-out effect**.

How the Crowding-Out Effect Works

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



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: whether households perceive the tax cut to be temporary or permanent.
  - A permanent tax cut causes a bigger increase in ***C*** – and a bigger shift in the *AD* curve – than a temporary tax cut.

ACTIVE LEARNING ***3***

Exercise

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?

ACTIVE LEARNING 3

Answers

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 agg demand by 5 x $40b = $200b.

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ACTIVE LEARNING 3

Answers

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.

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Fiscal Policy and Aggregate Supply

- Most economists believe the short-run effects of fiscal policy mainly work through agg demand.
- But fiscal policy might also affect agg supply.
- Recall one of the Ten Principles from Chap 1:
  People respond to incentives.
- A cut in the tax rate gives workers incentive to work more, so it might increase the quantity of g&s supplied and shift *AS* to the right.
- People who believe this effect is large are called "Supply-siders."

Fiscal Policy and Aggregate Supply

- Govt purchases might affect agg supply. Example:
  - Govt increases spending on roads.
  - Better roads may increase business productivity, which increases the quantity of g&s supplied, shifts *AS* to the right.
- This effect is probably more relevant in the long run: it takes time to build the new roads and put them into use.

Using Policy to Stabilize the Economy

- Economists debate how active a role the govt should take to stabilize the economy.

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, *e.g.,*
  - 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 believe the govt 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.

Keynesians in the White House

1961:
John F Kennedy pushed for a tax cut to stimulate agg demand. Several of his economic advisors were followers of Keynes.

2001:
George W Bush pushed for a tax cut that helped the economy recover from a recession that had just begun.

The Case Against Active Stabilization Policy

- (   ) 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.
- (   ) policy also works with a long lag:
  - Changes in ***G*** and ***T*** require Acts of Congress.
  - The 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 agg demand, the economy's condition may have changed.
- These critics contend that policymakers should focus on long-run goals like economic growth and low inflation.

Automatic Stabilizers

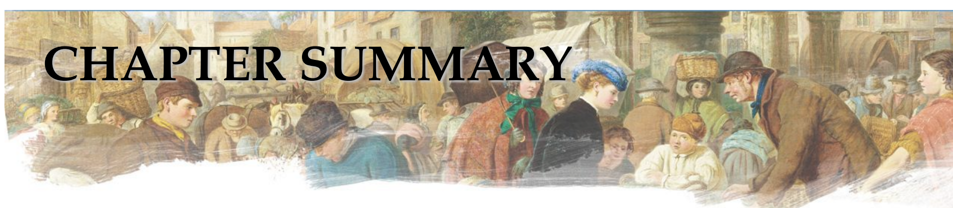
- **( ) stabilizers**:
  changes in fiscal policy that stimulate
  agg demand when economy goes into recession,
  without policymakers having to take any
  deliberate action

Automatic Stabilizers: Examples

- The tax system
  - In recession, taxes fall automatically,
    which stimulates agg demand.
- Govt spending
  - In recession, more people apply for public
    assistance (welfare, unemployment insurance).
  - Govt spending on these programs automatically
    rises, which stimulates agg demand.

CONCLUSION

- Policymakers need to consider all the effects of their actions. For example,
  - When Congress cuts taxes, it should consider the short-run effects on agg demand and employment, and the long-run effects on saving and growth.
  - When the Fed reduces the rate of money growth, it must take into account not only the long-run effects on inflation but the short-run effects on output and employment.



CHAPTER SUMMARY

- In the 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.

CHAPTER 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.

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CHAPTER 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.

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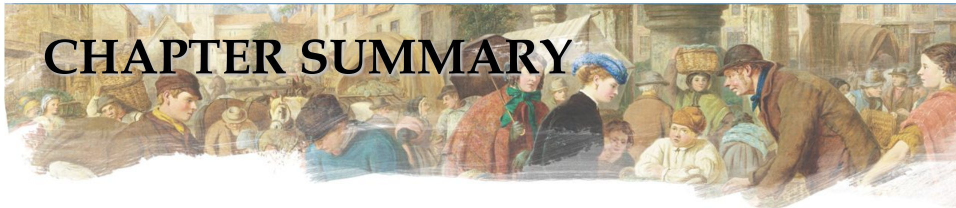

CHAPTER SUMMARY

- 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.