Soochow University International Programs

2021 SCUIP Winter Session I

ECON202

Lecture 15: Monetary and Fiscal Policy: Part 1

ECON202: Macroeconomics
Soochow University

The Influence of Monetary and Fiscal Policy on AD

- Monetary policy refers to the control of a country's quantity of money by its central bank.
  - ▻ We saw the long-run effects of monetary policy in Lecture 10 (Money Growth and Inflation)
- Fiscal policy refers to the government's decisions about the government's purchases and taxation.
  - ▻ We saw the long-run effects of fiscal policy in Lecture 6 (Saving, Investment, and the Financial System)
- Now we will look at the short-run effects.

Influence of Monetary and Fiscal Policy on AD (Cont'd)

- To describe the short-run effects of fiscal and monetary policy, I will use the theory of aggregate demand and aggregate supply.

- So let's review lecture 14.

Recap of Lecture 14: Shifts of AD Curve

- The AD curve can shift rightward for reasons unrelated to government policy:
  - ▻ Consumption:
    - -> Increase in consumer optimism
    - -> Increase in prices of assets (stocks, bonds, real estate)
  - ▻ Investment:
    - -> Technological progress
    - -> Increase in business confidence
  - ▻ Net exports:
    - -> Increases in foreign GDP, and
    - -> The expectation of an increase in the value of a foreign currency

Recap of Lecture 14: Shifts of AD Curve (Cont'd)

- However, expansionary fiscal and monetary policy can also shift the AD curve rightward:
  - ▻ Consumption:
    - -> Tax cut
  - ▻ Investment:
    - -> Reduction in interest rates via an increase in the quantity of money
    - -> Cuts in business taxes
  - ▻ Net exports:
    - -> Reduction in the exchange value of the domestic currency via an increase in the quantity of money

Aggregate Demand

- When the AD curve shifts, it causes short-run fluctuations in output and employment.
- Monetary and fiscal policy are sometimes used to offset those shifts and stabilize the economy.
- This topic takes a closer look at how monetary policy and fiscal policy shift the Aggregate Demand curve.

Recap: The three effects behind Aggregate Demand

- The aggregate demand curve slopes downward for three reasons:
  - The wealth effect
  - The interest-rate effect
  - The exchange-rate effect

Least important for the US, because little of our wealth consists of cash

Not very important for the US. Usually important for small countries that are heavily dependent on trade.

Recap: The three effects behind Aggregate Demand (Cont'd)

- The aggregate demand curve slopes downward for three reasons:
  - The wealth effect
  - The interest-rate effect
  - The exchange-rate effect

Most important for the US; the theory of this effect is called the *Theory of Liquidity Preference*

The Theory of Liquidity Preference

- John Maynard Keynes developed the theory of liquidity preference in order to explain what factors influence the interest rate in the short run.

- According to the theory, the interest rate adjusts to balance the supply and demand for **money**.
  - ▻ Warning: The theory of interest rates in Lecture 6 no longer applies.
  - ▻ That was the long run; now it's the short run.

The Theory of Liquidity Preference (Cont'd)

- Recall that in previous topics we have seen two kinds of interest rates: nominal and real.
  - ▻ The nominal interest rate is what people commonly understand as the interest rate.
    - -> it is not adjusted for inflation
    - -> it measures how fast the money in your bank account grows over time
  - ▻ The real interest rate = nominal interest rate - expected inflation
    - -> it is adjusted for inflation
    - -> it measures how fast the purchasing power of the money in your bank account is expected to grow

The Theory of Liquidity Preference (Cont'd)

- I had earlier said that the real interest rate = nominal interest rate - inflation
- Now I am saying that the real interest rate = nominal interest rate - expected inflation
- Q: Why is the definition different in the short run?
- A: In long-run analysis it is assumed that expected inflation = actual inflation

The Theory of Liquidity Preference (Cont'd)

- The theory of liquidity preference is
  - ▻ a short-run theory
  - ▻ of the nominal interest rate
- However, short-run analysis assumes that the expected inflation is exogenous.
- Therefore, any change in the nominal interest rate causes an identical change in the real interest rate.

The Theory of Liquidity Preference (Cont'd)

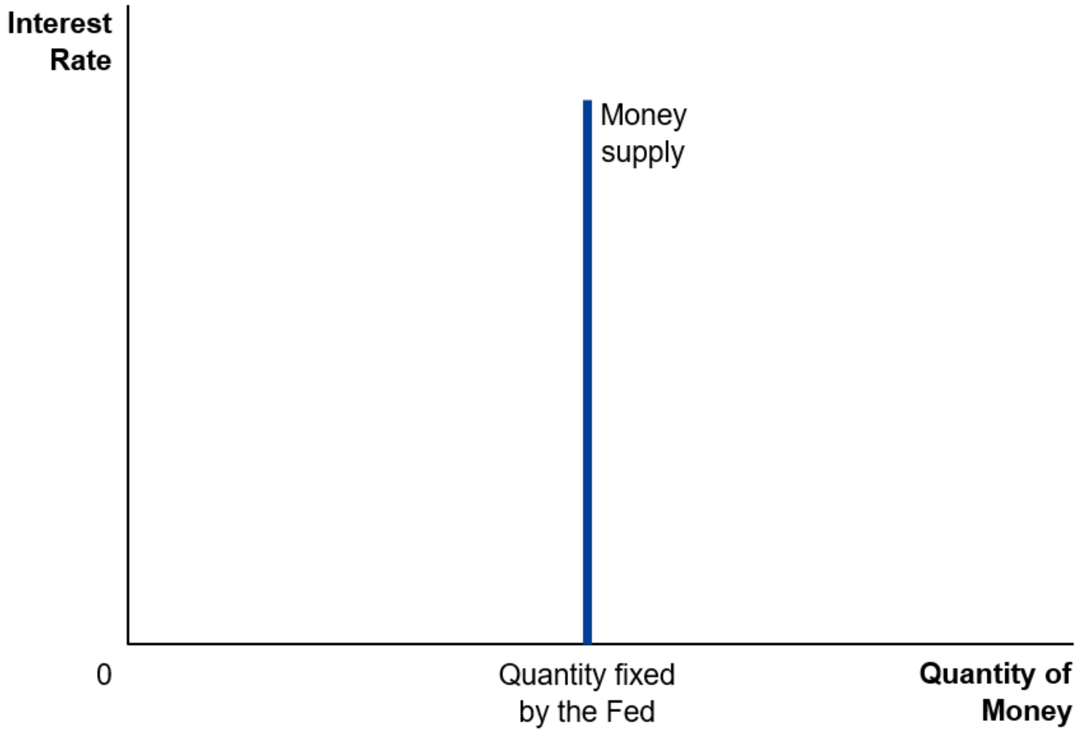
- So, the theory of liquidity preference can also be seen as a theory of the real interest rate.

- Consequently, from now on, I will not distinguish between nominal and real interest rates.

The Theory of Liquidity Preference: Money Supply

- The money supply is controlled by the Fed through:
  - ▻ Open-market operations
  - ▻ Changing the reserve requirements
  - ▻ Changing the discount rate
- Because it is fixed by the Fed, the quantity of money supplied does not depend on the interest rate.
- The fixed money supply is represented by a vertical supply curve.

Equilibrium in the Money Market



The Theory of Liquidity Preference: Money Demand

- Money demand is determined by three main factors:

  ▻ interest rate↑⇒ money demand ↓

  -> People choose to hold money instead of other assets that offer higher rates of return because money can be used to buy goods and services.

  -> The opportunity cost of holding money is the interest that could be earned on interest-earning assets.

  -> An increase in the interest rate raises the opportunity cost of holding money.

  -> As a result, the quantity of money demanded decreases.

Theory of Liquidity Preference: Money Demand (Cont'd)

- Money demand is determined by three main factors:
  - ▻ overall price level↑⇒ money demand↑

    -> When prices rise people need to keep more cash at hand for transactions purposes.

Theory of Liquidity Preference: Money Demand (Cont'd)

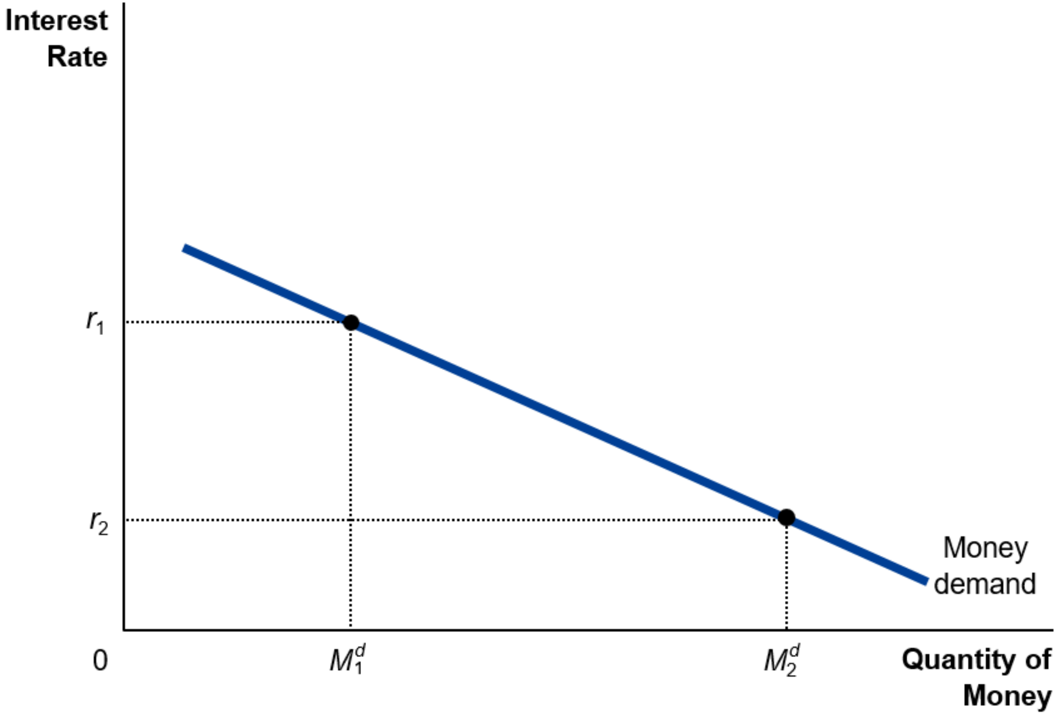
- Money demand is determined by three main factors:
  - ▻ real GDP↑⇒ money demand↑

    -> When more output is being produced, more stuff is being bought.

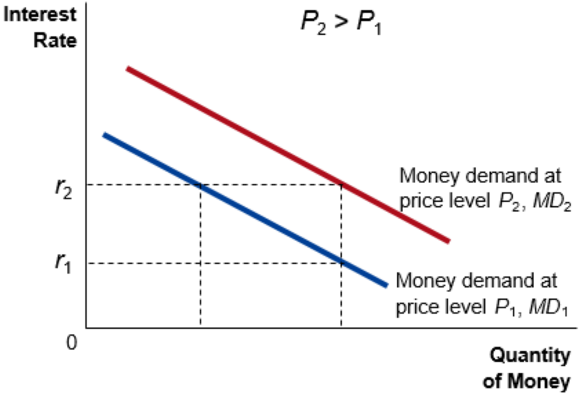
    -> … which is why people will be keeping more money with them and in their checkable accounts.

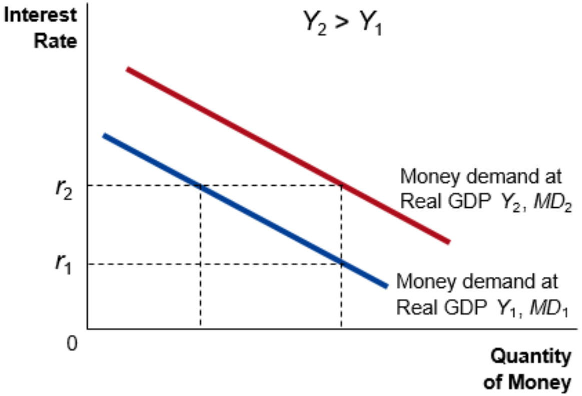
    -> This means higher money demand.

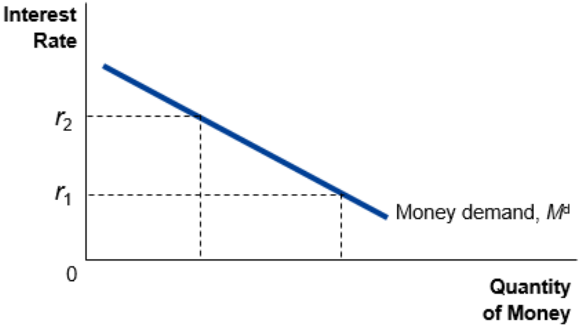
Interest Rate↑⇒ Money Demand↓



$P\uparrow$, $Y\uparrow$, $r\downarrow$ ⇒ Money Demand↑







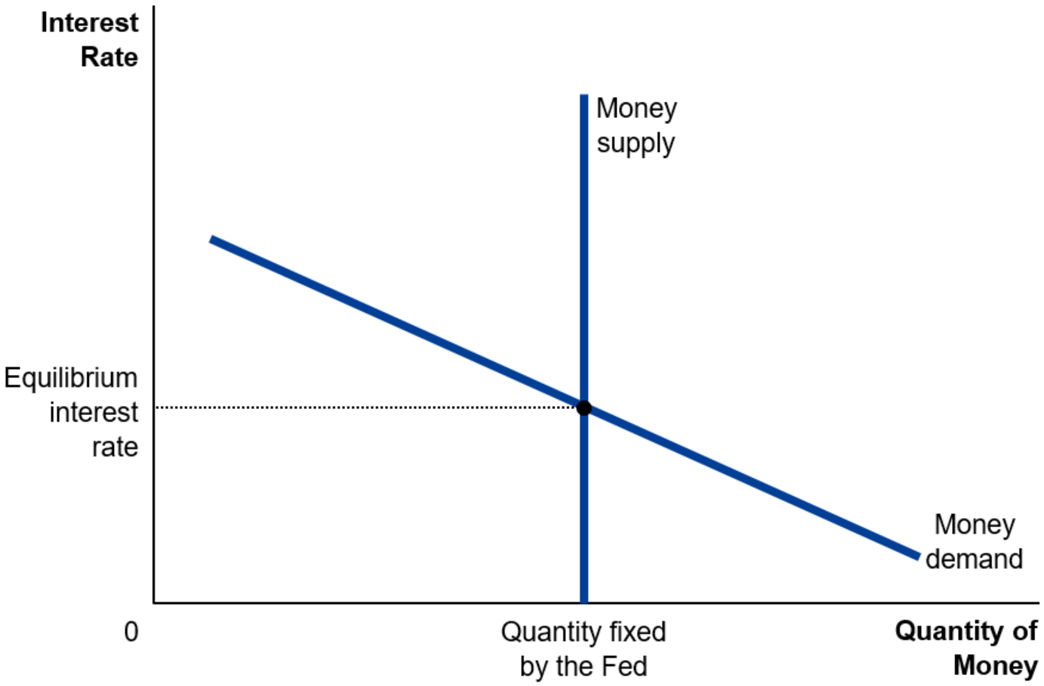
The Theory of Liquidity Preference (Cont'd)

- Equilibrium in the Money Market
  - ▻ According to the theory of liquidity preference:

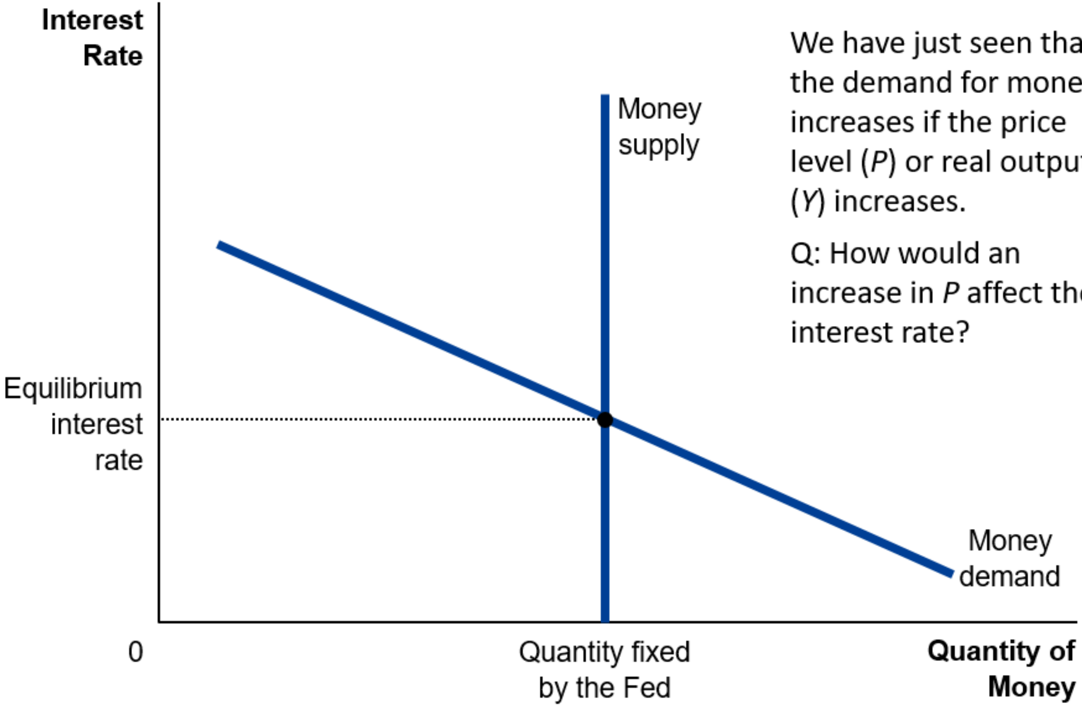
    -> The interest rate adjusts to balance the supply and demand for money.

    -> There is one interest rate, called the equilibrium interest rate, at which the quantity of money demanded equals the quantity of money supplied.

Equilibrium in the Money Market (Cont'd)



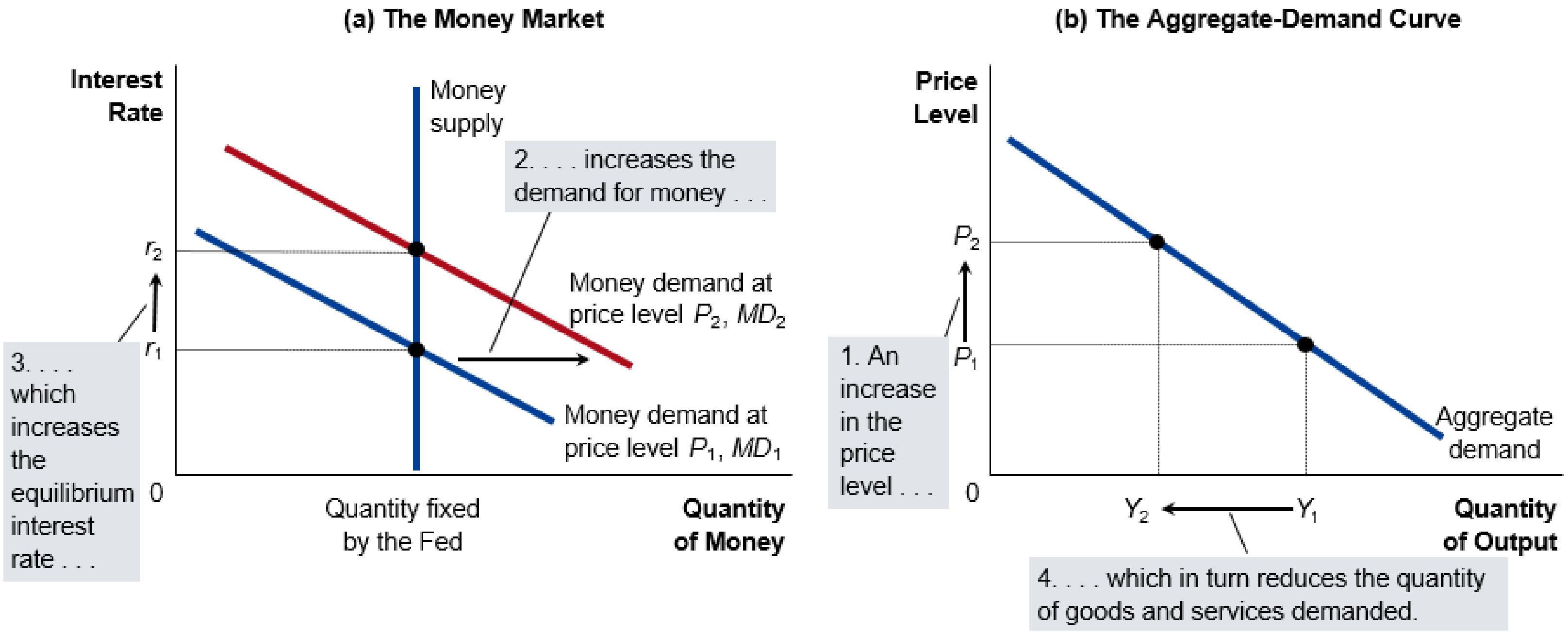
Equilibrium in the Money Market (Cont'd)



We have just seen that the demand for money increases if the price level (P) or real output (Y) increases.

Q: How would an increase in P affect the interest rate?

Money Market and Slope of AD Curve



The Theory of Liquidity Preference (Cont'd)

- Equilibrium in the Money Market
  - ▻ Assume the following about the economy:
    - -> For any given price level, the interest rate adjusts to balance the supply and demand for money.
    - -> The interest rate determines aggregate demand.
      - ▸ Along with the other factors we saw in Lecture 14.
    - -> So, Price Level ⟶ Interest Rate ⟶ Aggregate Demand.
    - -> This gives the AD curve.
    - -> The level of output is determined by the equality of aggregate demand and aggregate supply.

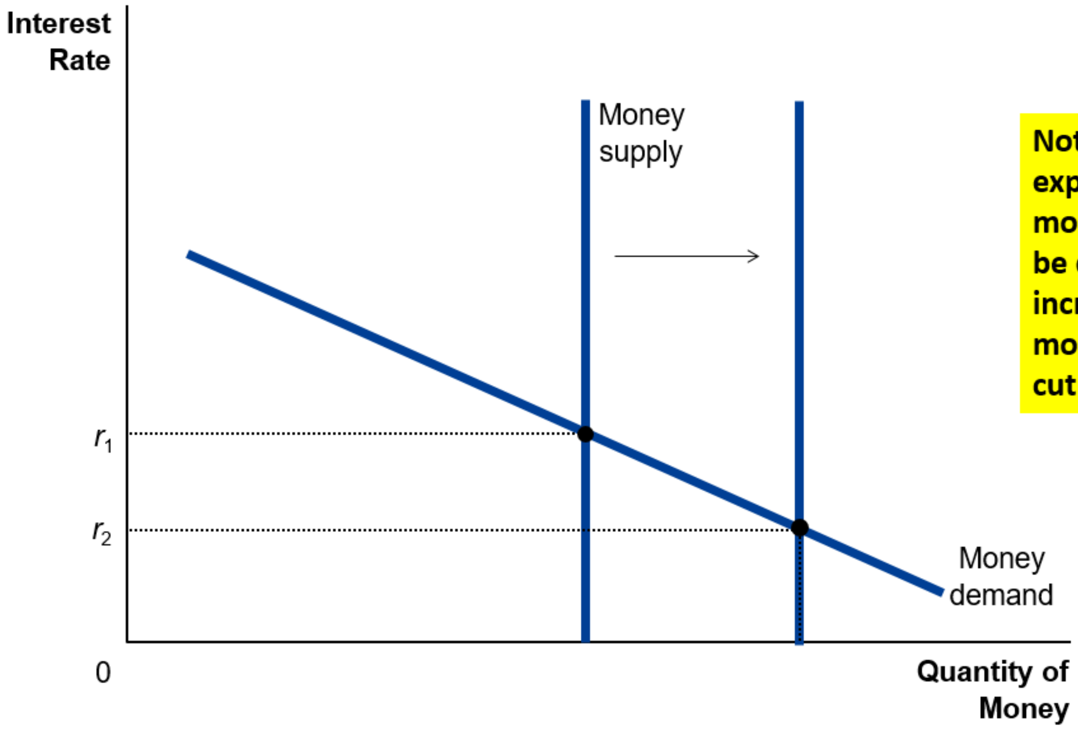
Downward Slope of AD Curve: Interest Rate Effect

- Overall price level (P)↑⇒ money demand↑
- Higher money demand leads to a higher interest rate.
- At a higher interest rate the quantity of goods and services demanded falls.
  ▻ interest rate↑⇒ investment spending by businesses (I)↓
  ▻ even consumption spending (C) may ↓
- Therefore, $P\uparrow \Rightarrow C + I + G + NX \downarrow$
- The end result of this analysis is a negative relationship between the price level and the quantity of goods and services demanded.

Changes in Money Supply

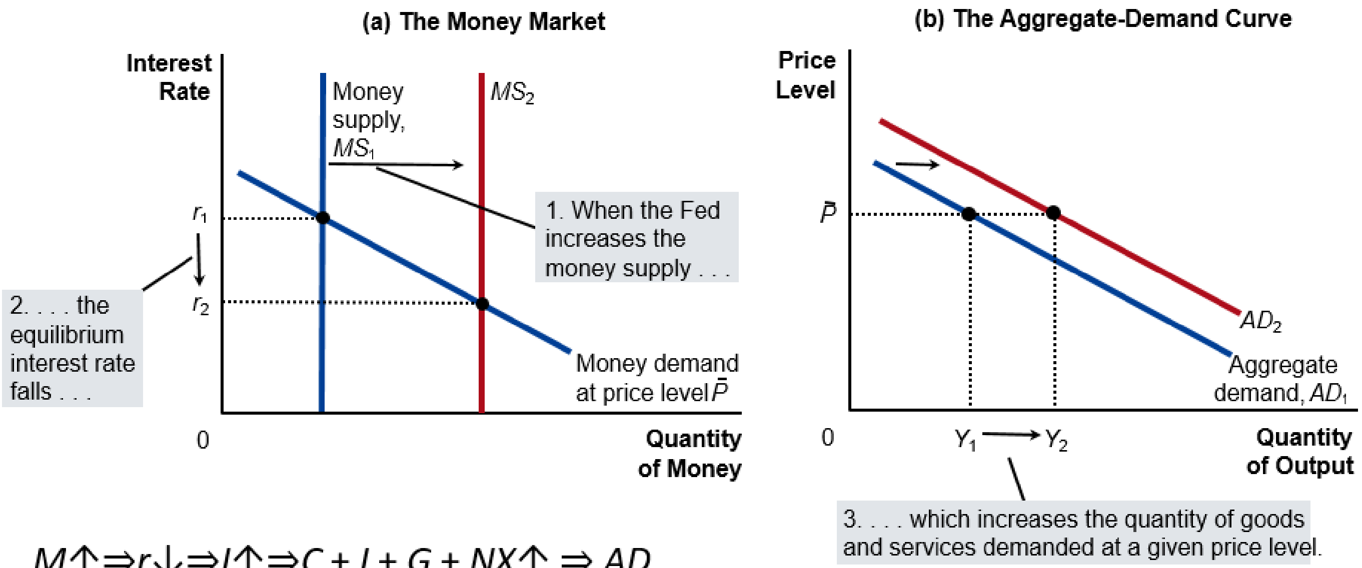
- The Fed can shift the aggregate demand curve when it changes its monetary policy.
- An increase in the money supply shifts the money supply curve to the right.
- The interest rate falls.
- Falling interest rates increases the quantity of goods and services demanded.

Expansionary Monetary Policy



Note that expansionary monetary policy can be described as an increase in the money supply or as a cut in interest rates

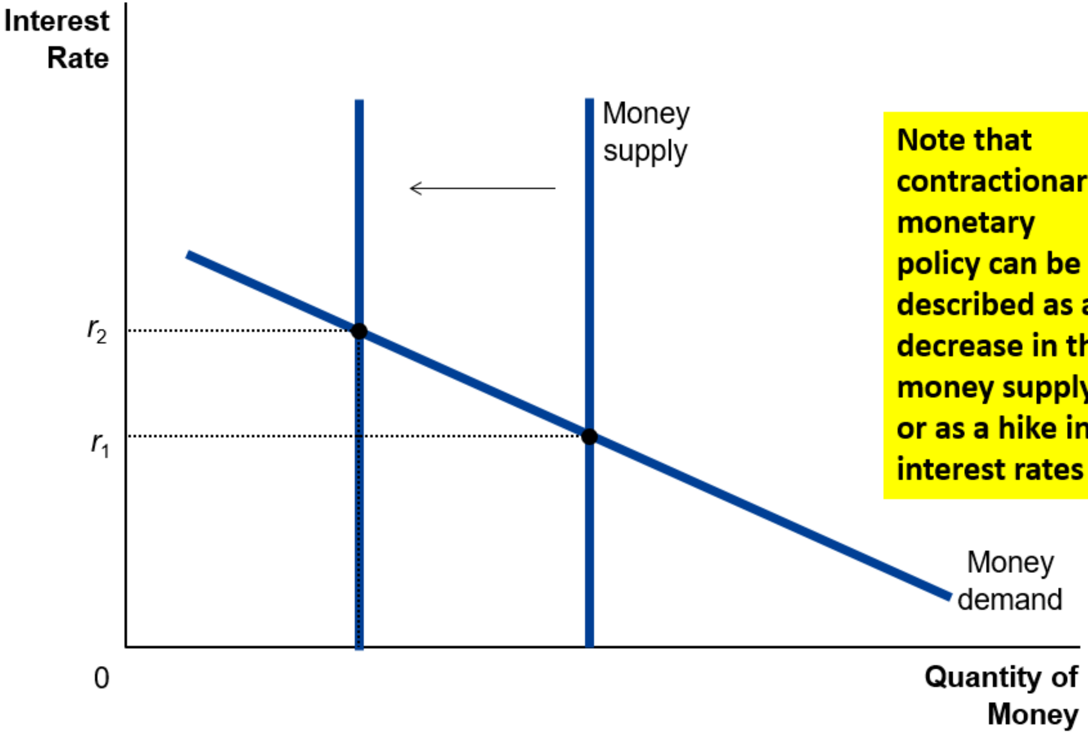
Expansionary Monetary Policy (Cont'd)



$M\uparrow \Rightarrow r\downarrow \Rightarrow I\uparrow \Rightarrow C + I + G + NX\uparrow \Rightarrow AD$ curve shifts right

And when $M\downarrow$, the reverse happens

Contractionary Monetary Policy



Note that contractionary monetary policy can be described as a decrease in the money supply or as a hike in interest rates

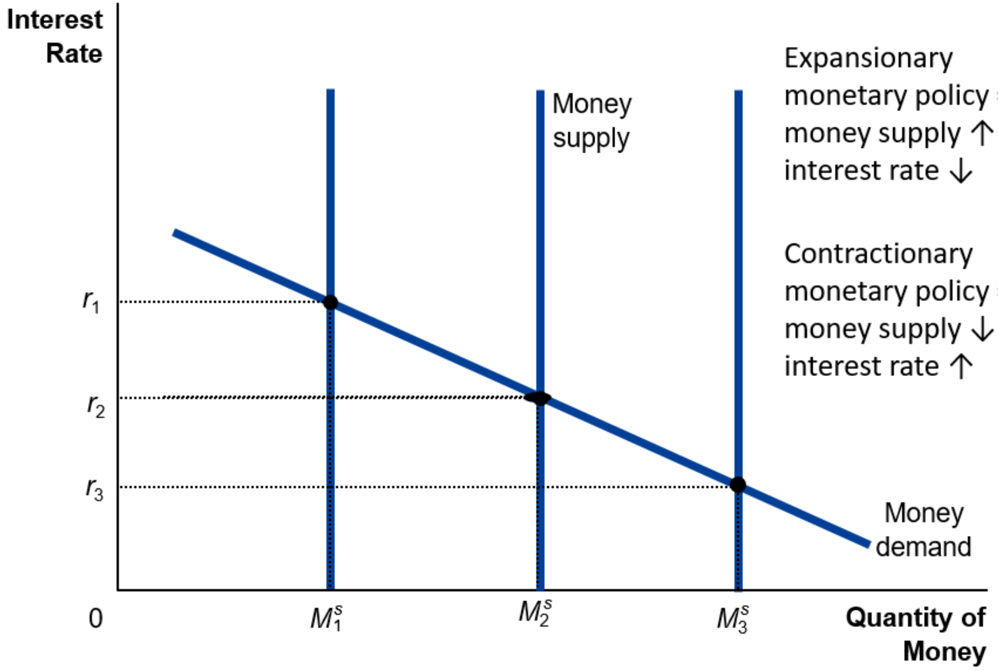
Changes in Money Supply (Cont'd)

- When the Fed increases the money supply, it lowers the interest rate and increases the quantity of goods and services demanded at any given price level, shifting aggregate-demand to the right.

- When the Fed reduces the money supply, it raises the interest rate and reduces the quantity of goods and services demanded at any given price level, shifting aggregate-demand to the left.

Monetary Policy

When the Fed changes the money supply, it also changes the interest rate. Therefore, the Fed's monetary policy can be described by the money supply or by the interest rate.



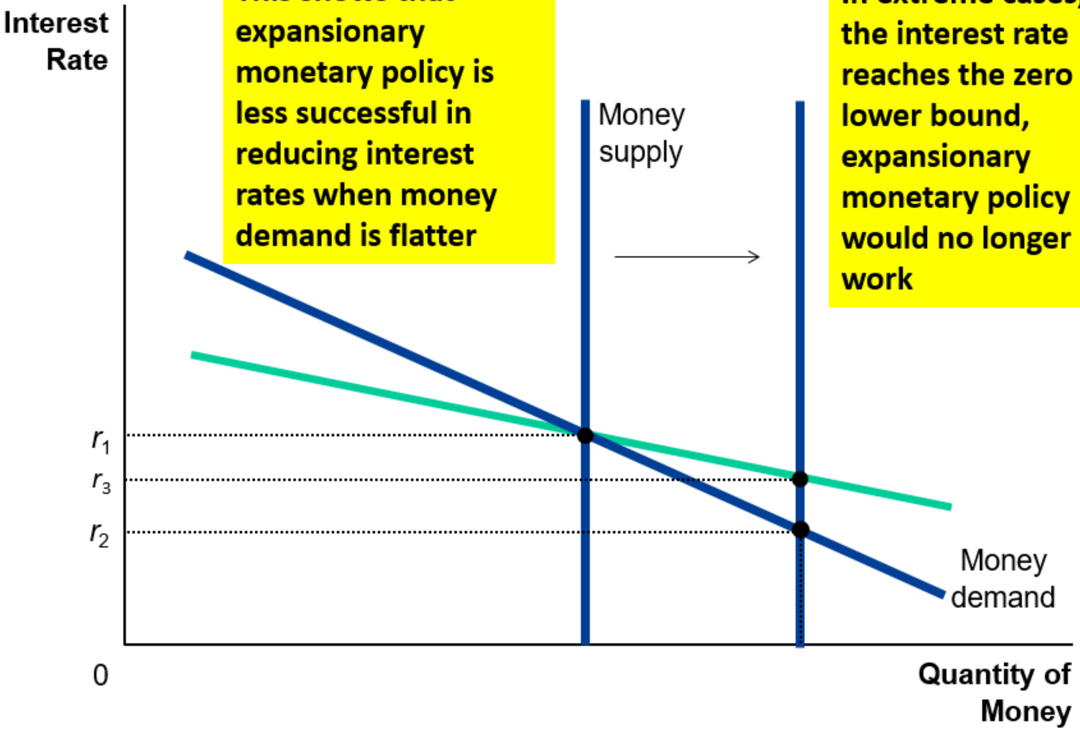
Expansionary monetary policy = money supply ↑ or interest rate ↓

Contractionary monetary policy = money supply ↓ or interest rate ↑

The Role of Interest Rate Targets in Fed Policy

- Monetary policy can be described
  - ▻ either in terms of the money supply
  - ▻ or in terms of the interest rate
- Changes in monetary policy can be viewed
  - ▻ either in terms of a changing target for the interest rate
  - ▻ or in terms of a change in the money supply
- A target for the federal funds rate affects the money market equilibrium, which influences aggregate demand.

Expansionary Monetary Policy: Criticisms

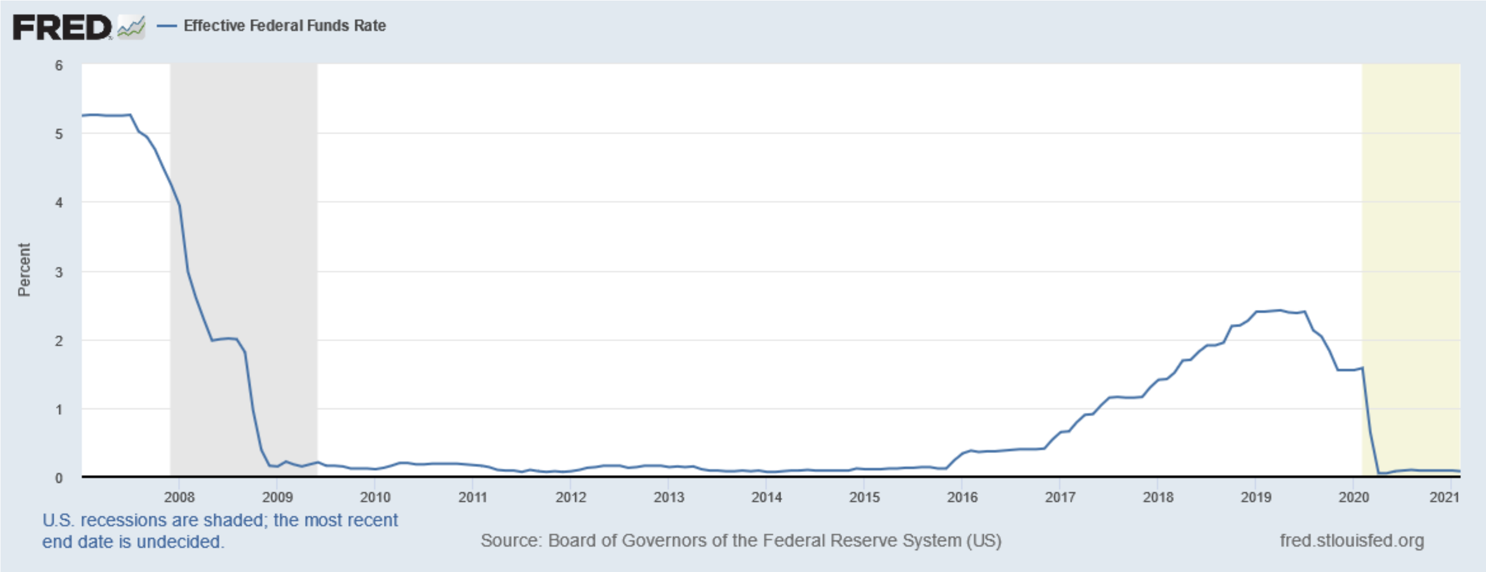


This shows that expansionary monetary policy is less successful in reducing interest rates when money demand is flatter

In extreme cases, if the interest rate reaches the zero lower bound, expansionary monetary policy would no longer work

2008 Global Financial Crisis: Monetary Stimulus

- The Federal Reserve did all it could.
- But the Federal Funds Rate could not be reduced below zero!



Expansionary Monetary Policy: Criticisms (Cont'd)

- Critics of expansionary monetary policy have also argued that even if an increase in the money supply succeeds in reducing the interest rate, the fall in the interest rate may not lead to an increase in investment spending by businesses (*I*).
- Why? Business investment spending is heavily influenced by optimism or pessimism; interest rates play a minor role.

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