3.5 - 3.7 Demand-side and Supply-side Policies

Monetary Policy

Monetary policy involves management of money supply and interest rate to achieve macroeconomic objectives.

It is carried out by the central bank of each country such as:

- Hong Kong Monetary Authority
- Bank of England
- Federal Reserve
- European Central Bank

3.5 - 3.7 Demand-side and Supply-side Policies

Monetary Policy

The role of central banks

The **central bank** is usually a government financial institution with a number of important responsibilities which includes…

- Bank to the government
- Banker to commercial banks
- Regulator of commercial banks
- Conduct monetary policy

3.5 - 3.7 Demand-side and Supply-side Policies

Monetary Policy

Central bank independence

In many countries the **central bank** has a degree of independence from government.

Monetary policy can be conducted with the best longer-term interests of the economy, without interference from political pressures.

Example: The Federal Reserve can decide the goals of monetary policy and on the ways these goals can be achieved.

3.5 - 3.7 Demand-side and Supply-side Policies

Monetary Policy

Aims

- Low and stable rate of inflation
- Low unemployment
- Reduce business cycle fluctuations
- Promote a stable economic environment for long-term growth
- External balance

Inflation targeting

Many countries pursue an inflation target between 1.5 to 2.5%.

Target is based on *forecasts or predictions of future* inflation using the **consumer price index (CPI)**.

Used in countries such as…

Australia	Brazil
Canada	Finland
New Zealand	European Union

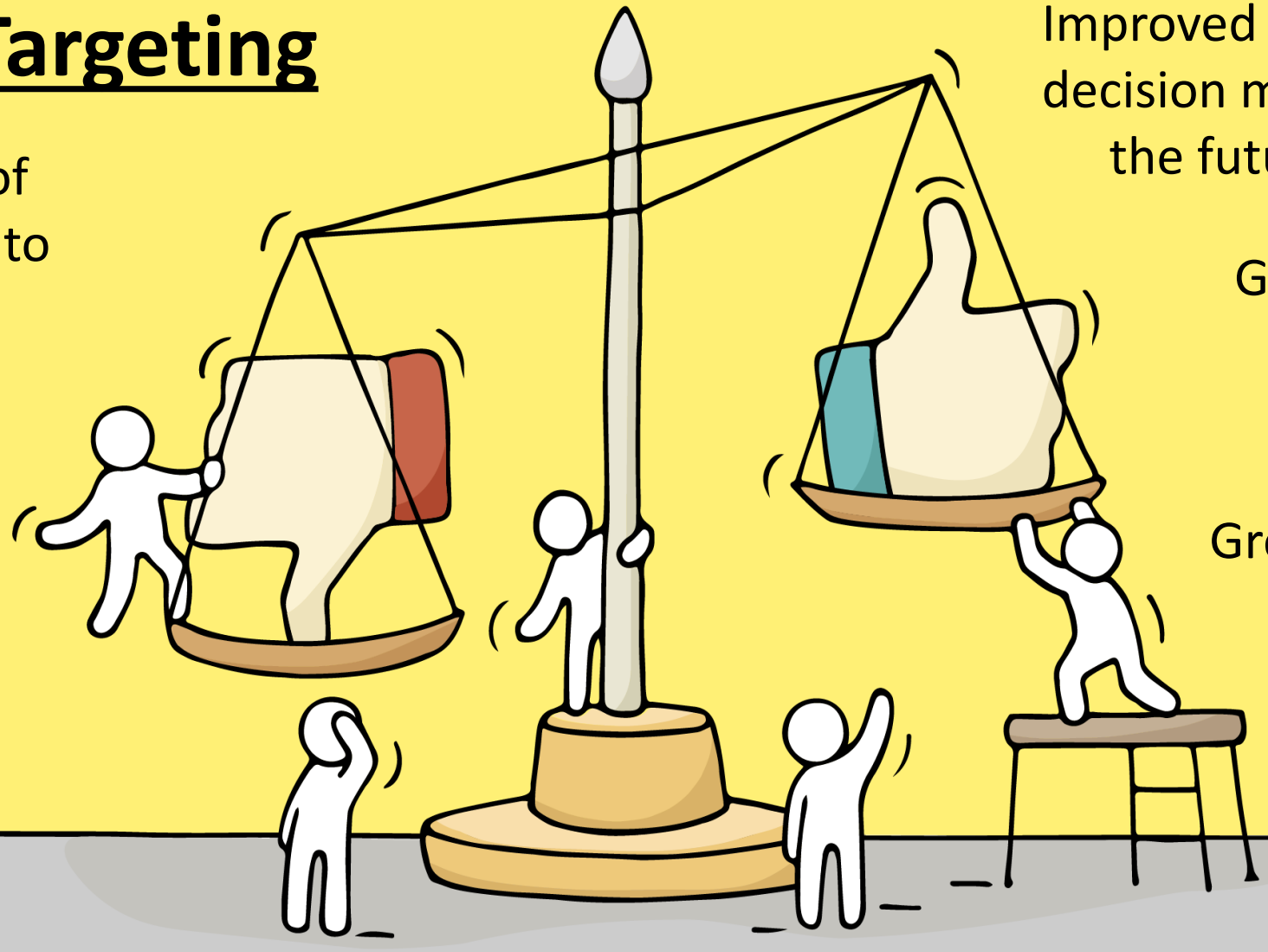
3.5 - 3.7 Demand-side and Supply-side Policies

Inflation Targeting

Reduced ability of the central bank to pursue other macroeconomic objectives

Finding an appropriate inflation target

Difficulties of implementation



Improved ability of economic decision makers to anticipate the future rate of inflation

Greater central bank transparency and accountability

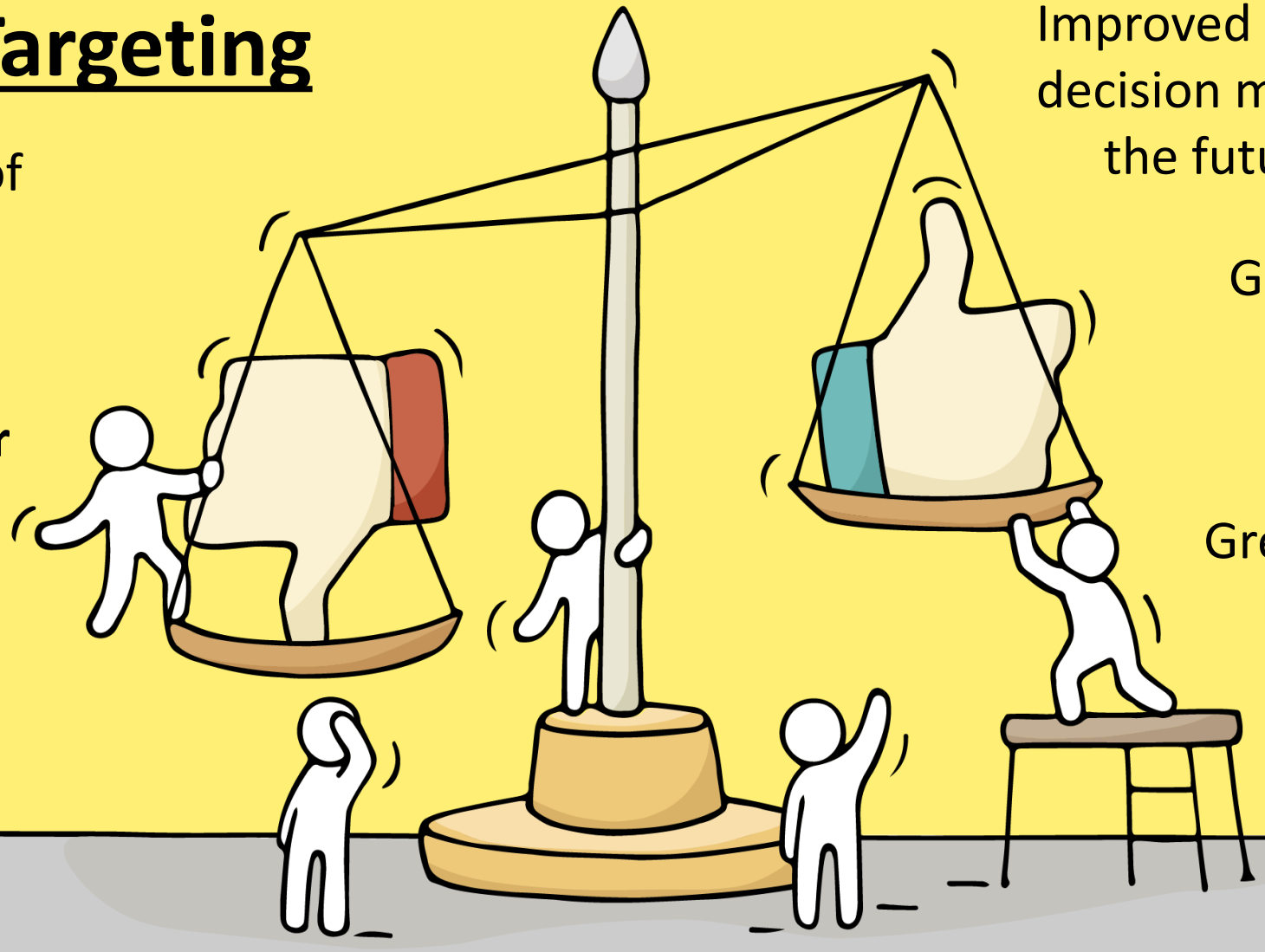
Greater co-ordination between monetary and fiscal policy

Lower and more stable rate of inflation

3.5 - 3.7 Demand-side and Supply-side Policies

Inflation Targeting

Reduced ability of the central bank to respond to **supply-side shocks and other unexpected events (e.g. financial crisis)**: *expansionary monetary policy*



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3.5 - 3.7 Demand-side and Supply-side Policies

Monetary Policy

The demand for money and interest rates

Interest rate is the cost of borrowing or reward for saving.

Money, like other assets, has a price. The price of money is the interest rate and it communicates two important pieces of information to **savers** and **borrowers**:

To potential savers: The interest rate is the opportunity cost of holding money as an asset.

If a household chooses to keep cash as an asset itself, they will give up the interest rate the money could be earning in a bank.

Monetary Policy

The demand for money and interest rates

To potential savers: The interest rate is the opportunity cost of holding money as an asset.

- **At higher interest rates:**
  The opportunity cost of holding money increases so the quantity demanded of money as an asset decreases as more households will wish to invest their money in banks and other institutions that offer a return on the investment.

- **At lower interest rates:**
  The opportunity cost of holding money decreases and the quantity of money demanded as an asset increases.

3.5 - 3.7 Demand-side and Supply-side Policies

Monetary Policy

The demand for money and interest rates

Interest rate is the cost of borrowing or reward for saving.

Money, like other assets, has a price. The price of money is the interest rate and it communicates two important pieces of information to **savers** and **borrowers**:

To potential borrowers: The interest rate is the cost of borrowing money.

When a household or firm considers borrowing money to invest, the interest rate is the percentage above and beyond the amount borrowed that must be repaid.

3.5 - 3.7 Demand-side and Supply-side Policies

Monetary Policy

The demand for money and interest rates

Interest rate is the cost of borrowing or reward for saving.

Money, like other assets, has a price. The price of money is the interest rate and it communicates two important pieces of information to **savers** and **borrowers**:

To potential borrowers: The interest rate is the cost of borrowing money.

Example: The bank may lend you $1000 for one year at a rate of 10% interest per year.
At the end of the year, you would need to pay back $1100.

Monetary Policy

The demand for money and interest rates

To potential borrowers: The interest rate is the cost of borrowing money.

- **At higher interest rates:**
  The quantity demanded of money by borrowers is lower since the cost of repaying the money borrowed is greater.

- **At lower interest rates:**
  The quantity of money demanded by borrowers is greater as it is cheaper to pay back.

What is the relationship between money and interest rate?

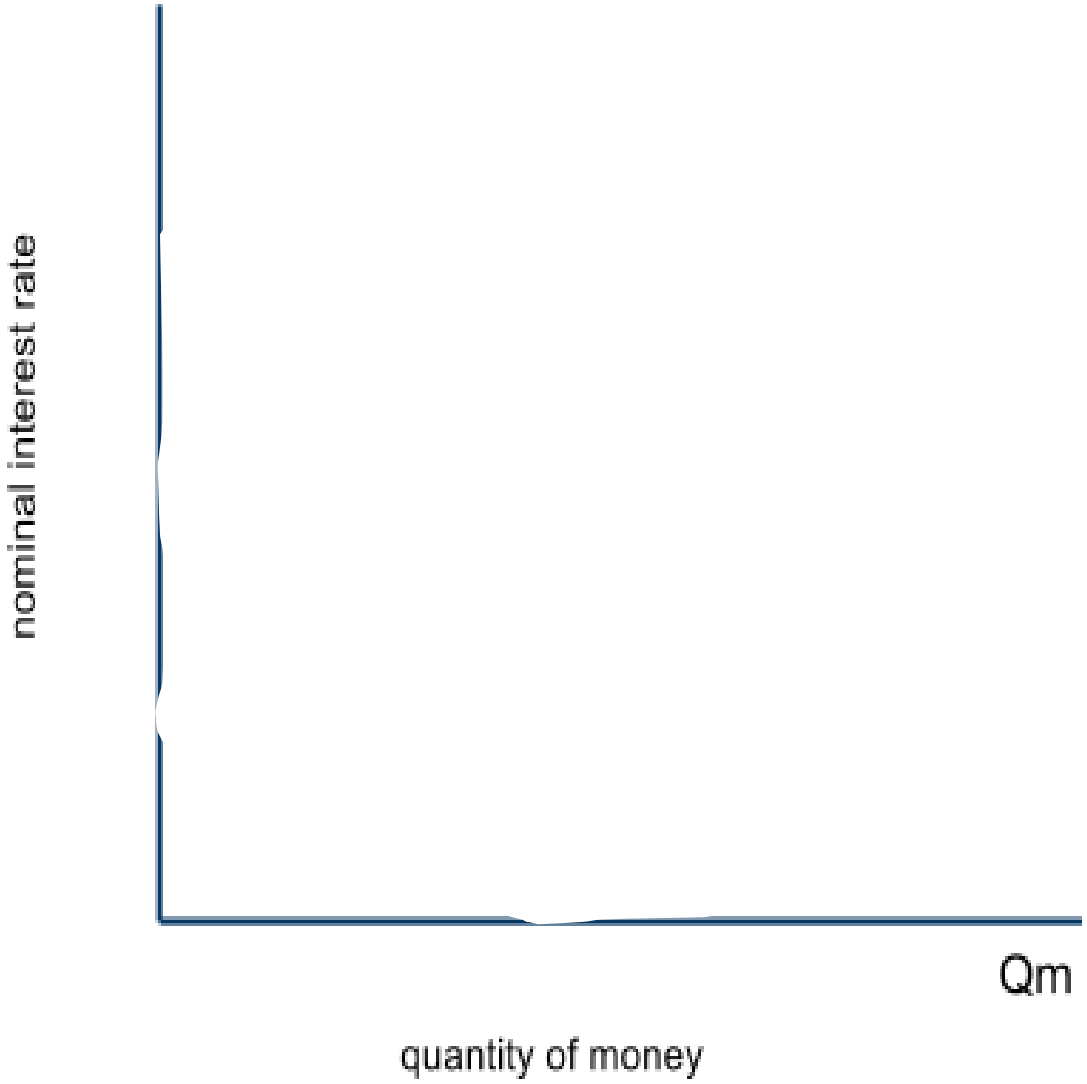
Monetary Policy

Determination of the rate of interest

Demand for money **(Dm)** slopes downwards.

As the rate of interest falls, the quantity of money demanded by the public (consumers, firms and the government) increases (vice versa).

Reminder: Money in this case does not earn interest as it is not placed in savings account.



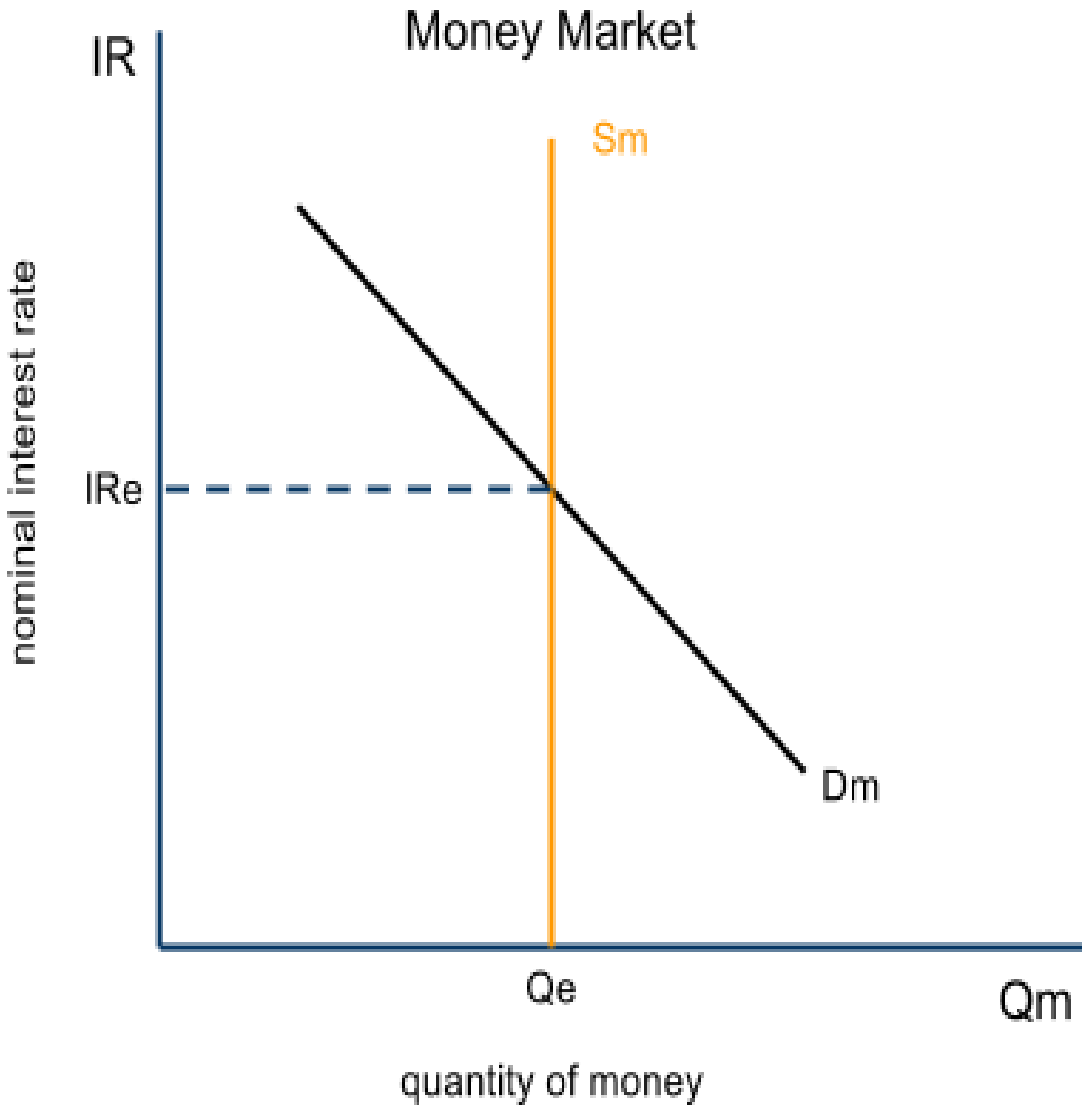
Monetary Policy

Determination of the rate of interest

The supply of money **(Sm)** is determined by the monetary policies of the Central Bank.

It is vertical or **perfectly inelastic** because the Central Banks *do not respond to changes in the interest rate*, rather they set the interest rate by controlling the money supply.

Point of intersection between **Dm** and **Sm** determines the equilibrium rate of interest.



Monetary Policy

Changes in the demand for money

Changes in the interest rate will therefore cause a movement along the money demand curve.

If the national output and income change, the entire money demand curve will shift.

Higher level of output = Rise in Dm

Lower level of output = Fall in Dm

Monetary Policy

Changes in the demand for money

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Higher level of output = Rise in Dm

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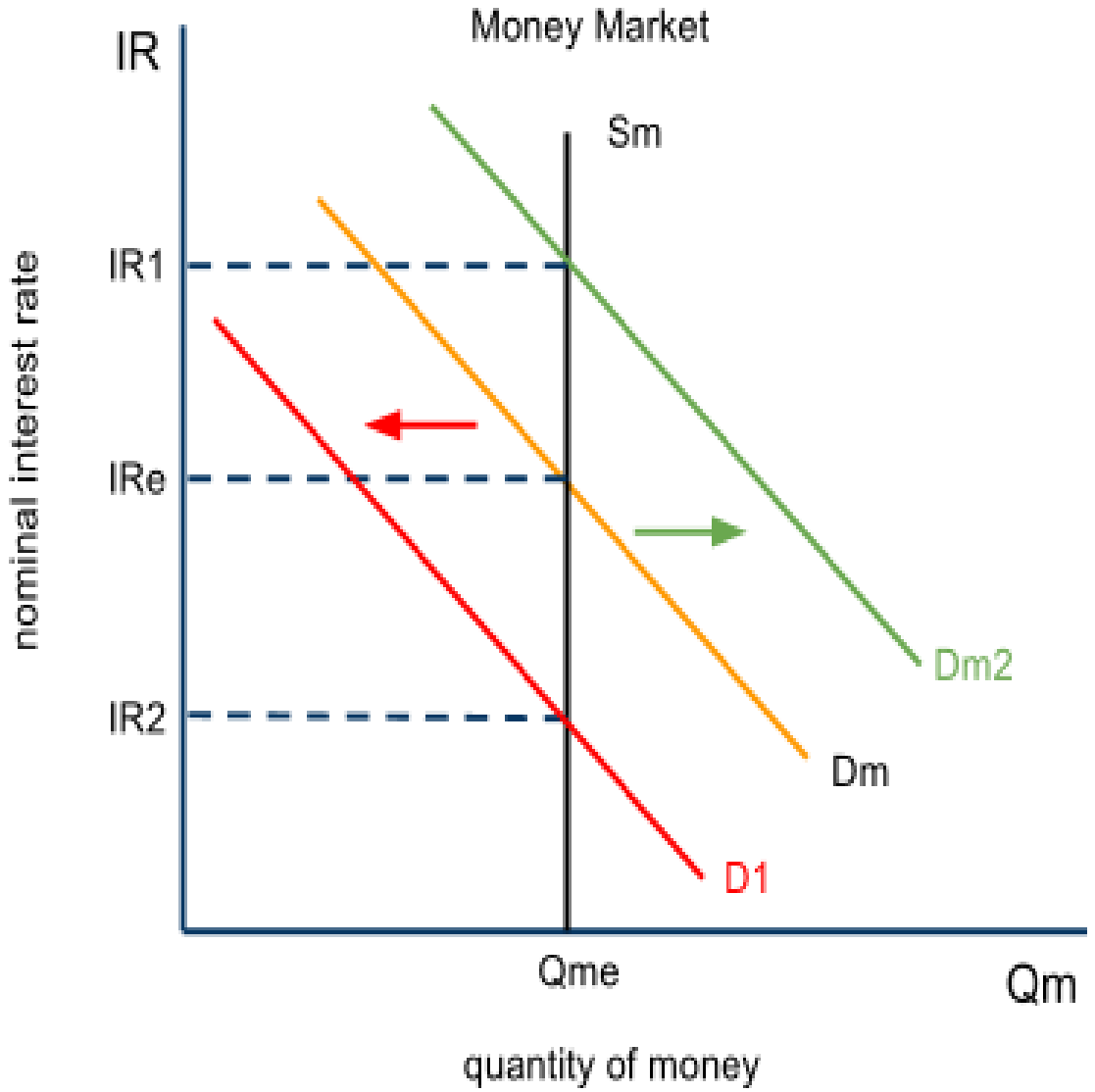
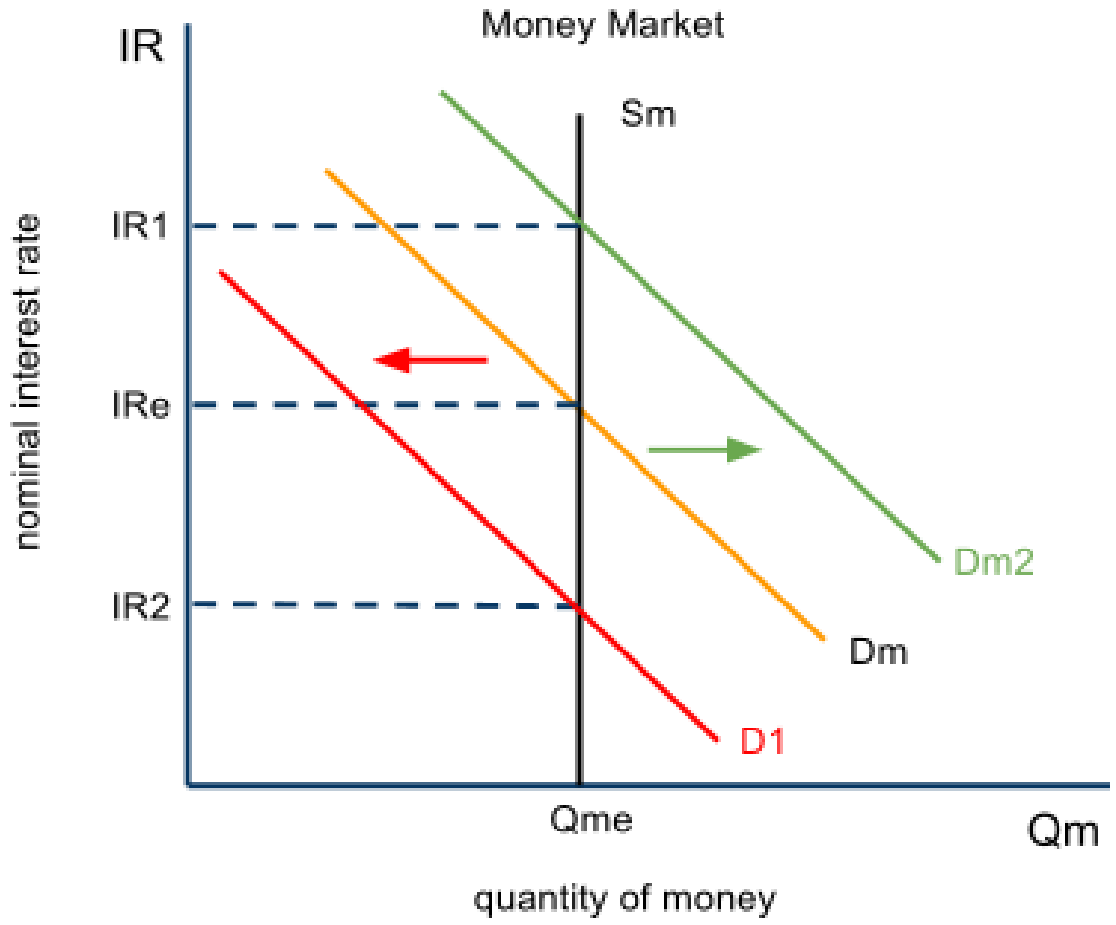


Monetary Policy



Decrease in Dm

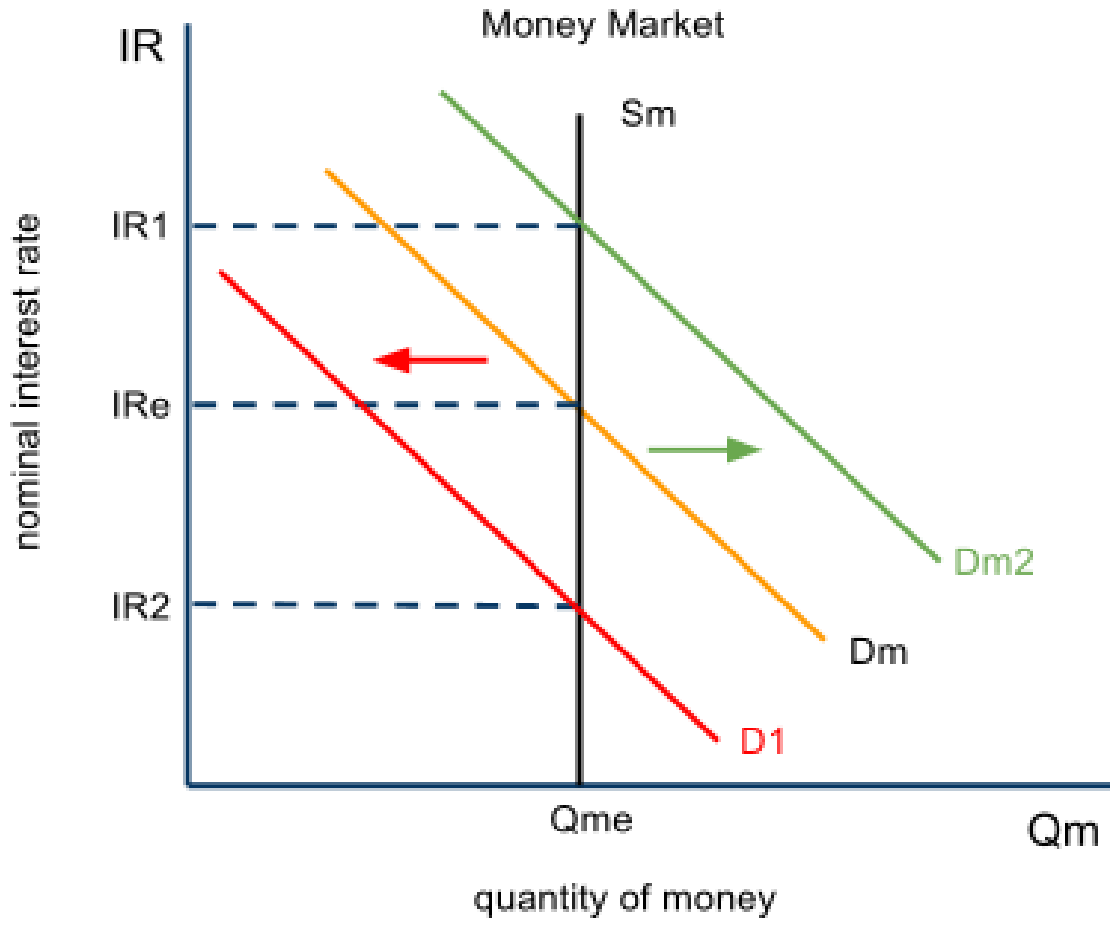
If the nation goes into a **recession**, less money is demanded since there is…

- More unemployment
- Fewer workers to pay
- Less demand for goods and services

This causes a **leftward shift to D1** and money becomes less scarce.

Banks will lower **interest rates** to try and keep borrowers coming through the doors.

Monetary Policy



Increase in Dm

If the nation's GDP rises, more money is demanded since households are earning higher incomes and wish to consume more.

An increase in demand for money causes a **rightward shift to Dm2**, *ceteris paribus* making it more scarce.

Banks find they must raise **interest rates** as money demand rises.

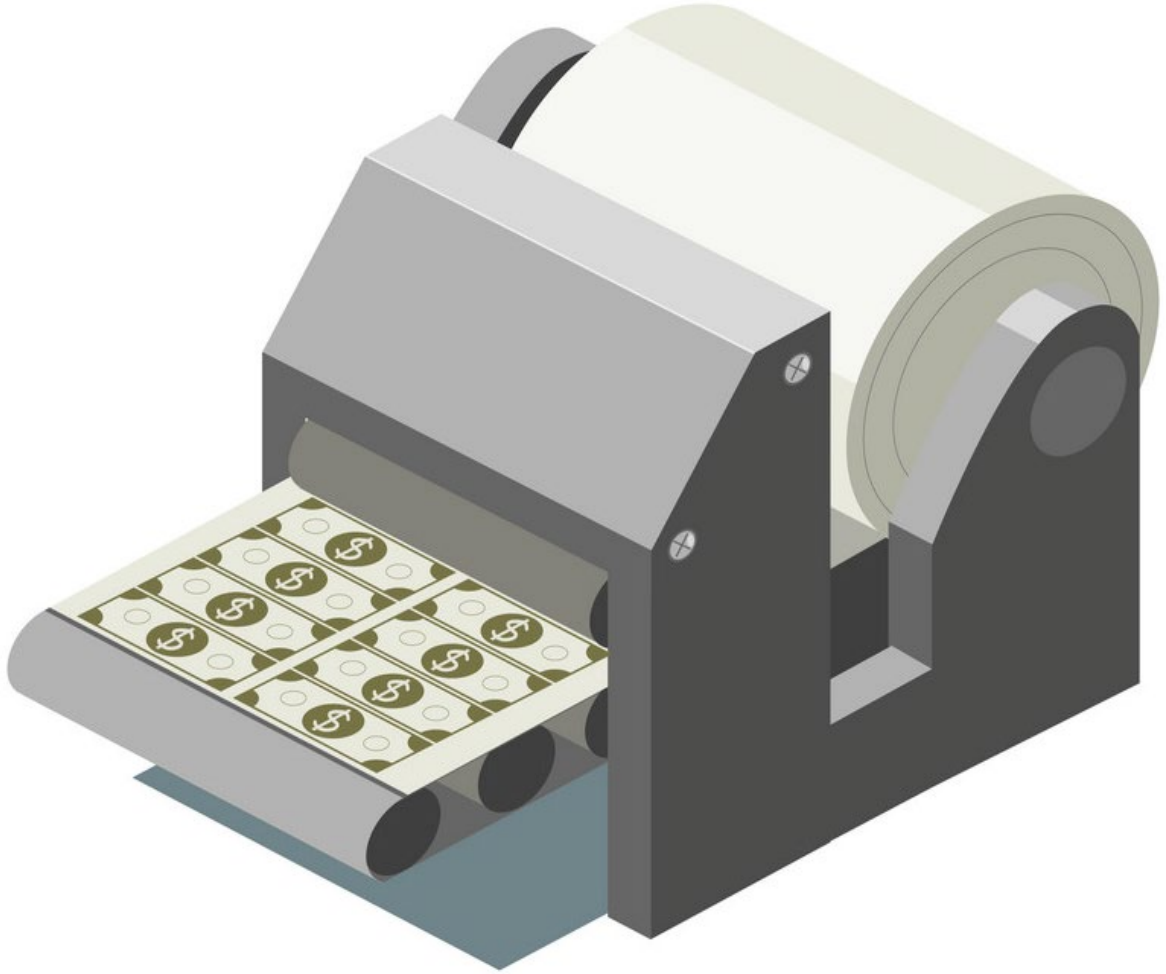
Monetary Policy

Changes in the supply of money

If the supply of money changes, the equilibrium **interest rate** will change in the economy.

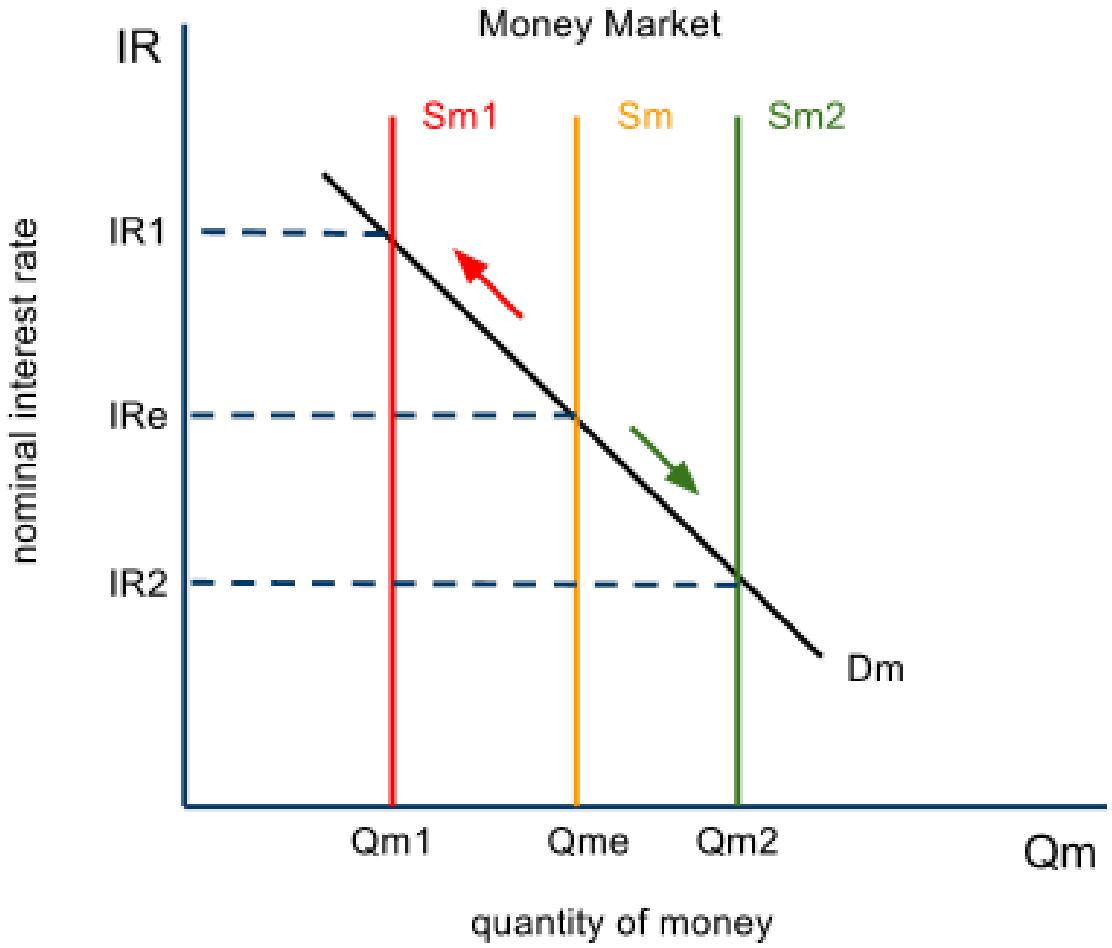
Money supply changes result from monetary policy actions taken by the central bank:

- Expansionary (easy) monetary policy
- Contractionary monetary policy



3.5 - 3.7 Demand-side and Supply-side Policies

Monetary Policy



Expansionary monetary supply

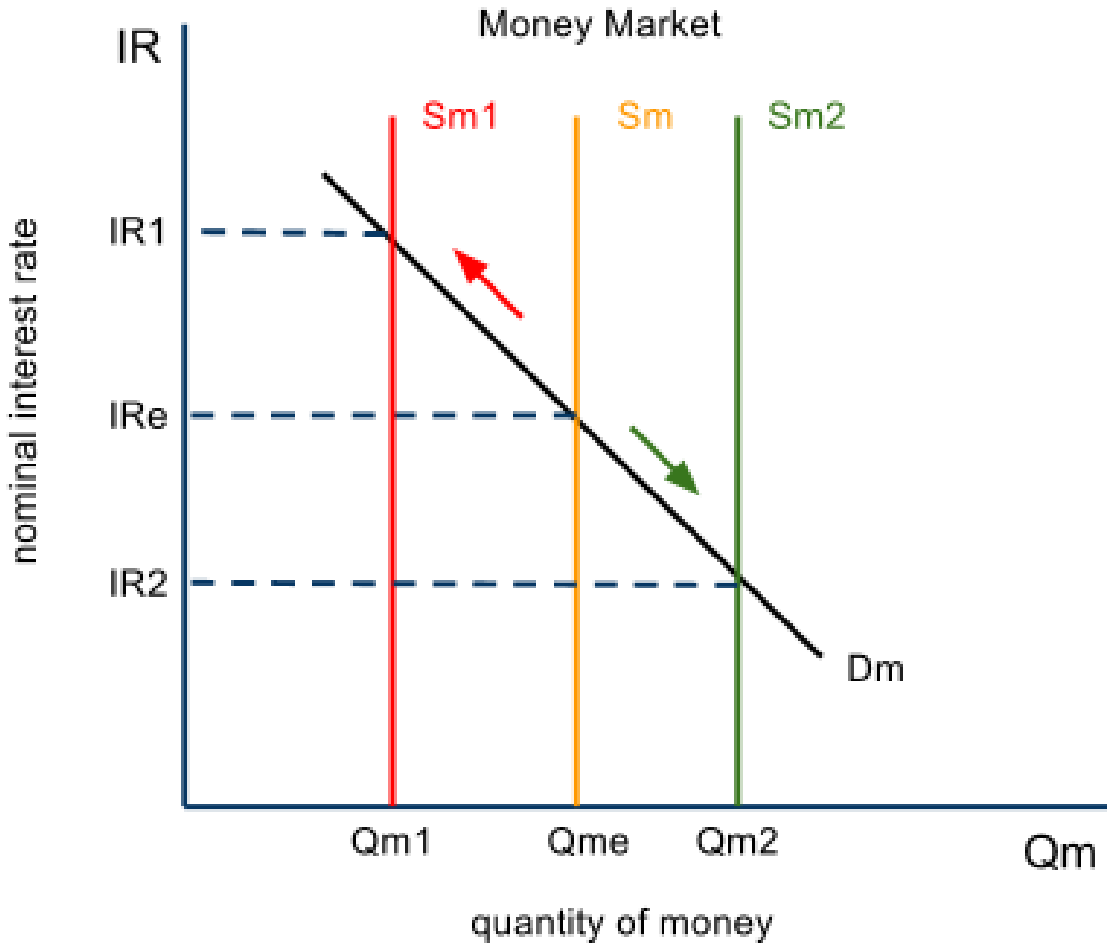
An action by the central bank which causes the money supply to increase.

- This will cause the supply curve to **shift to the right from Sm to Sm2**
- **Interest rate** falls from **IRe to IR2**

Banks have more money in their reserves which they want to loan out, so they will lower the rates to attract more borrowers.

3.5 - 3.7 Demand-side and Supply-side Policies

Monetary Policy



Contractionary monetary supply

An action by the central bank which causes the money supply to decrease.

- This will cause the supply curve to **shift to the left from Sm to Sm1**
- **Interest rate** rises from **IRe to IR1**

Banks have less money in their reserves, therefore have less to loan out.

Money becomes more scarce.

3.5 - 3.7 Demand-side and Supply-side Policies

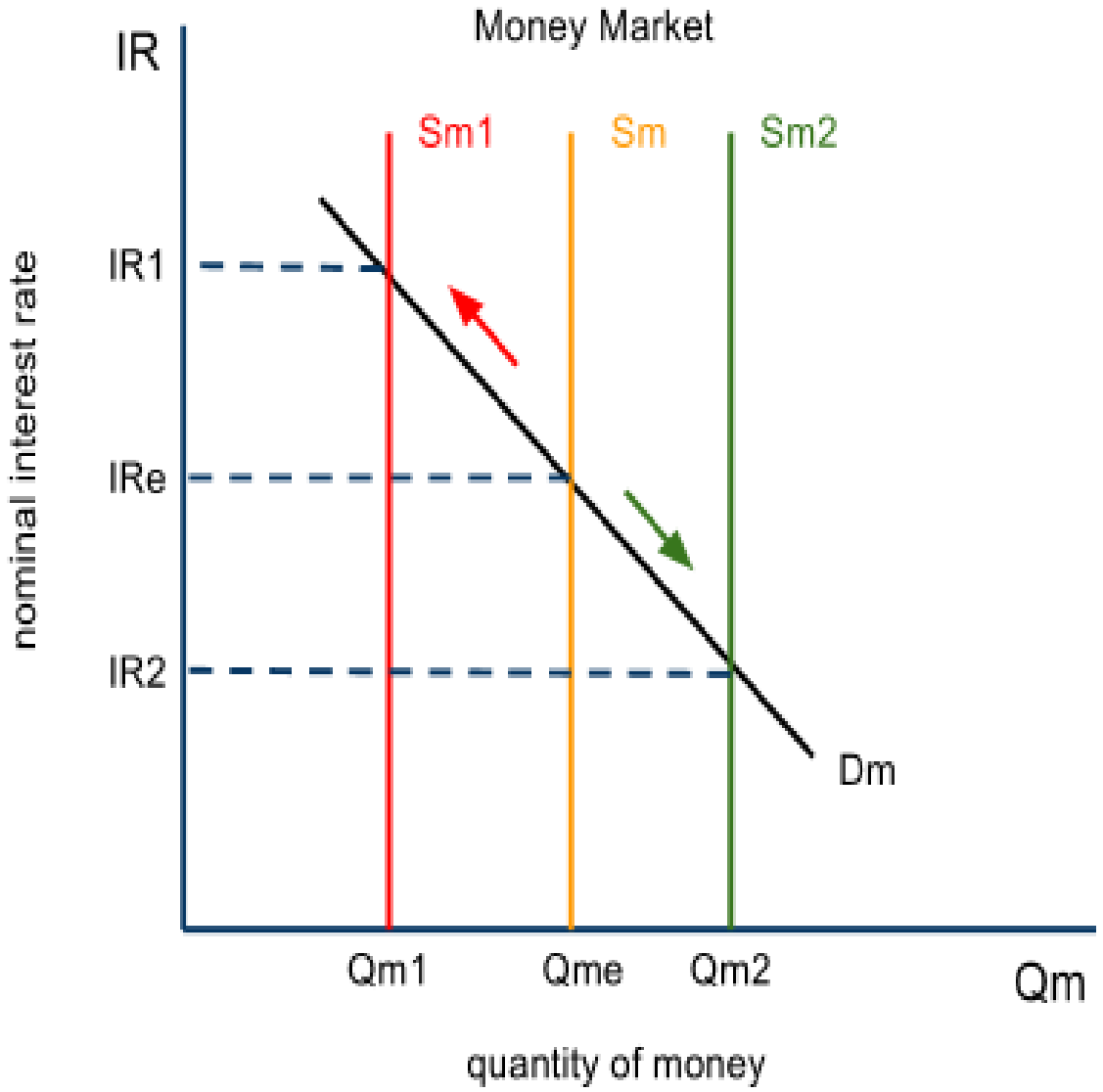
Monetary Policy

Setting a target interest rate

Central bank adjusts the money supply so that the actual equilibrium interest rate will become equal to the **target interest rate**.

The interest rate is not set or fixed – the **central bank** will continue to adjust money supply in order to achieve the target rate.

In the real world, there are many different types of interest rates.



3.5 - 3.7 Demand-side and Supply-side Policies

HL Content only

Monetary Policy

How central bank changes the money supply

Central bank keeps only a fraction of total deposits as part of **minimum reserve requirement** (required reserve ratio).

The *excess reserves* can be lent out to 'create money'.

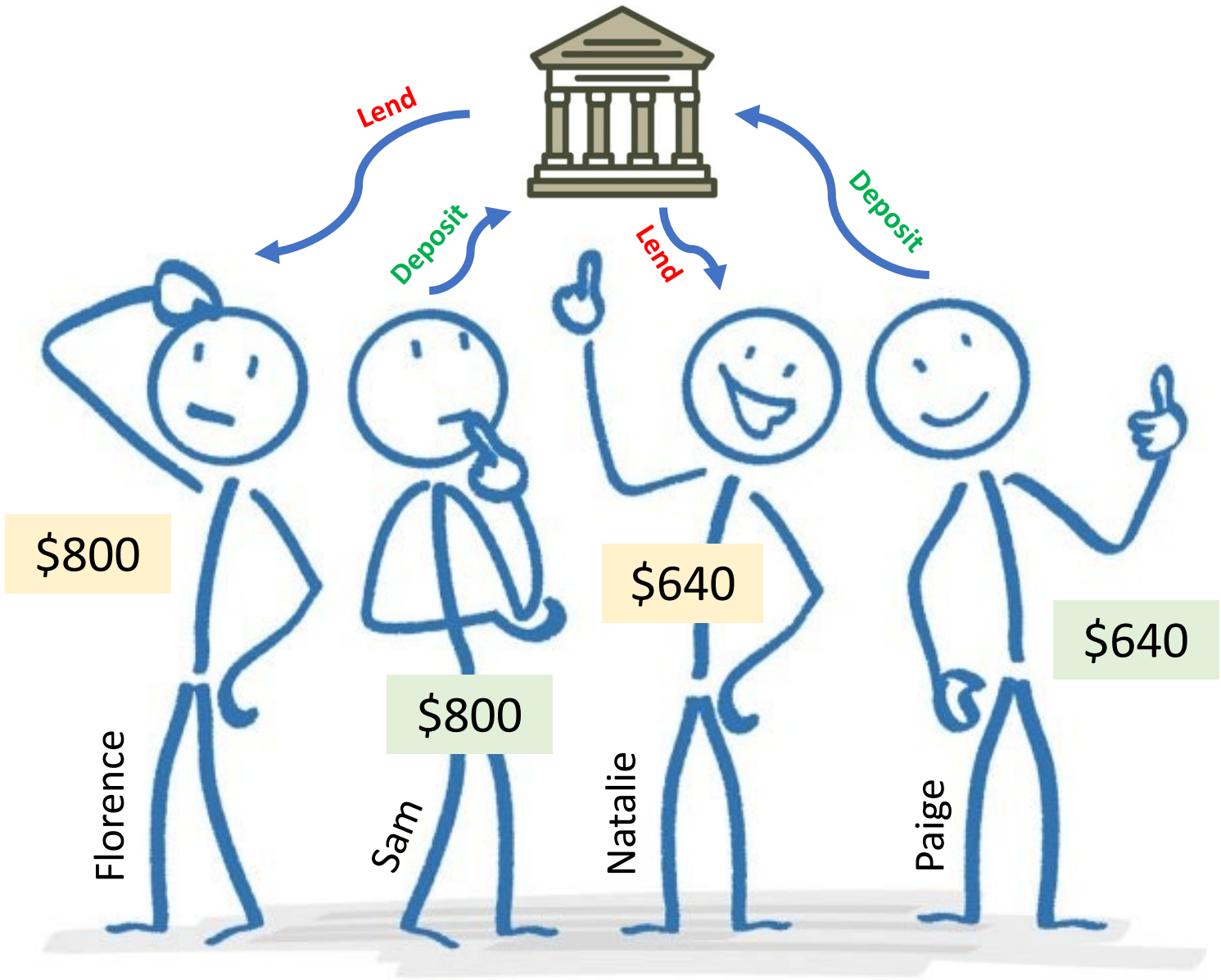
Monetary Policy

How central bank changes the money supply

Suppose the ***minimum reserve requirement*** in Rivendell is 20%.

David goes to the bank with $1000 and deposits the money.

What happens from here?



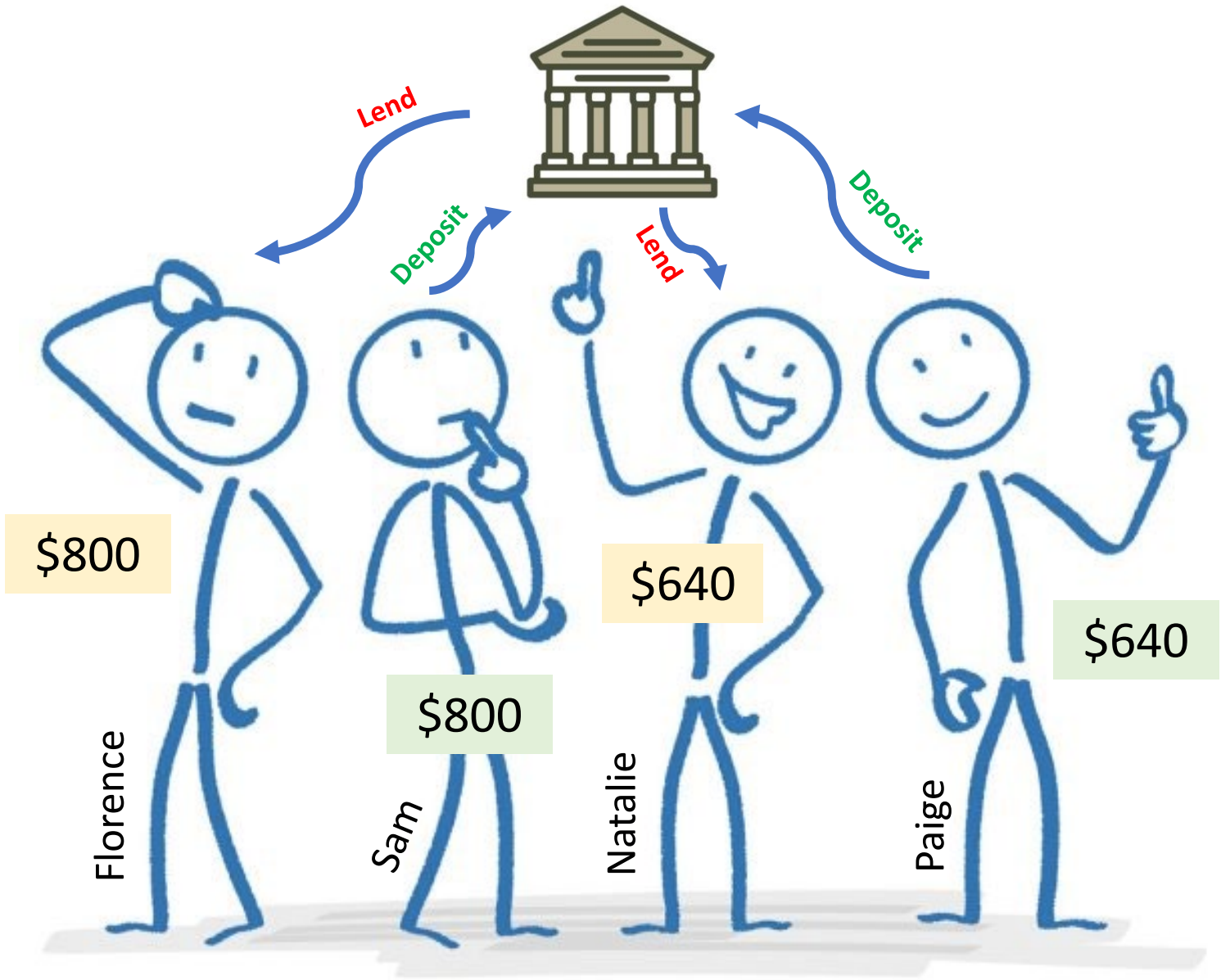
Monetary Policy

How central bank changes the money supply

How much would the next person be able to borrow?

Borrower 3	$512
Borrower 4	$409.6
Borrower 5	$327.68

These are all **newly created money**

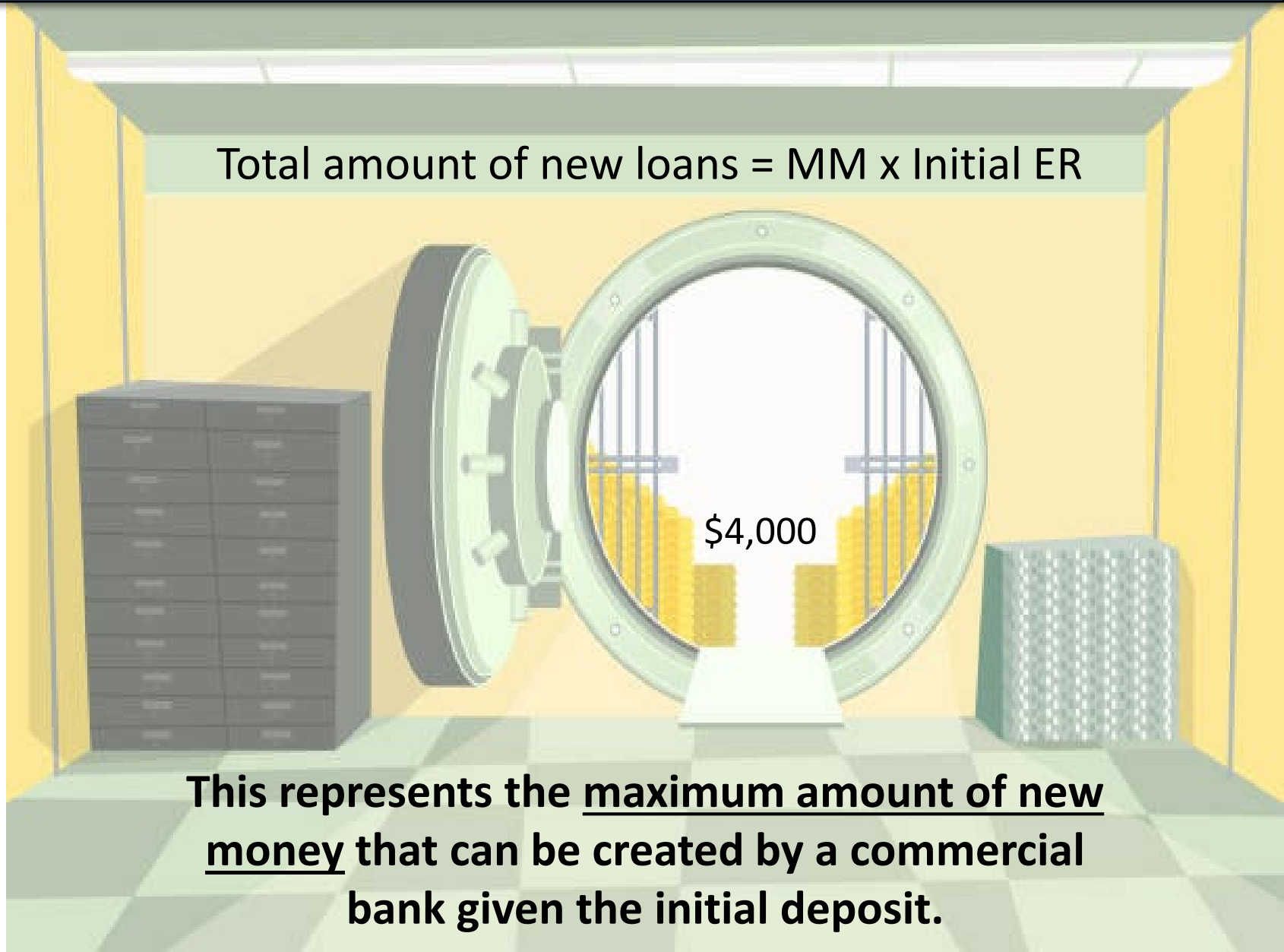


Monetary Policy

How central bank changes the money supply

We can work out the total amount of new loans created by using the **monetary multiplier**.

$$MM = \frac{1}{Require\ Reserve\ Ratio}$$



This represents the maximum amount of new money that can be created by a commercial bank given the initial deposit.

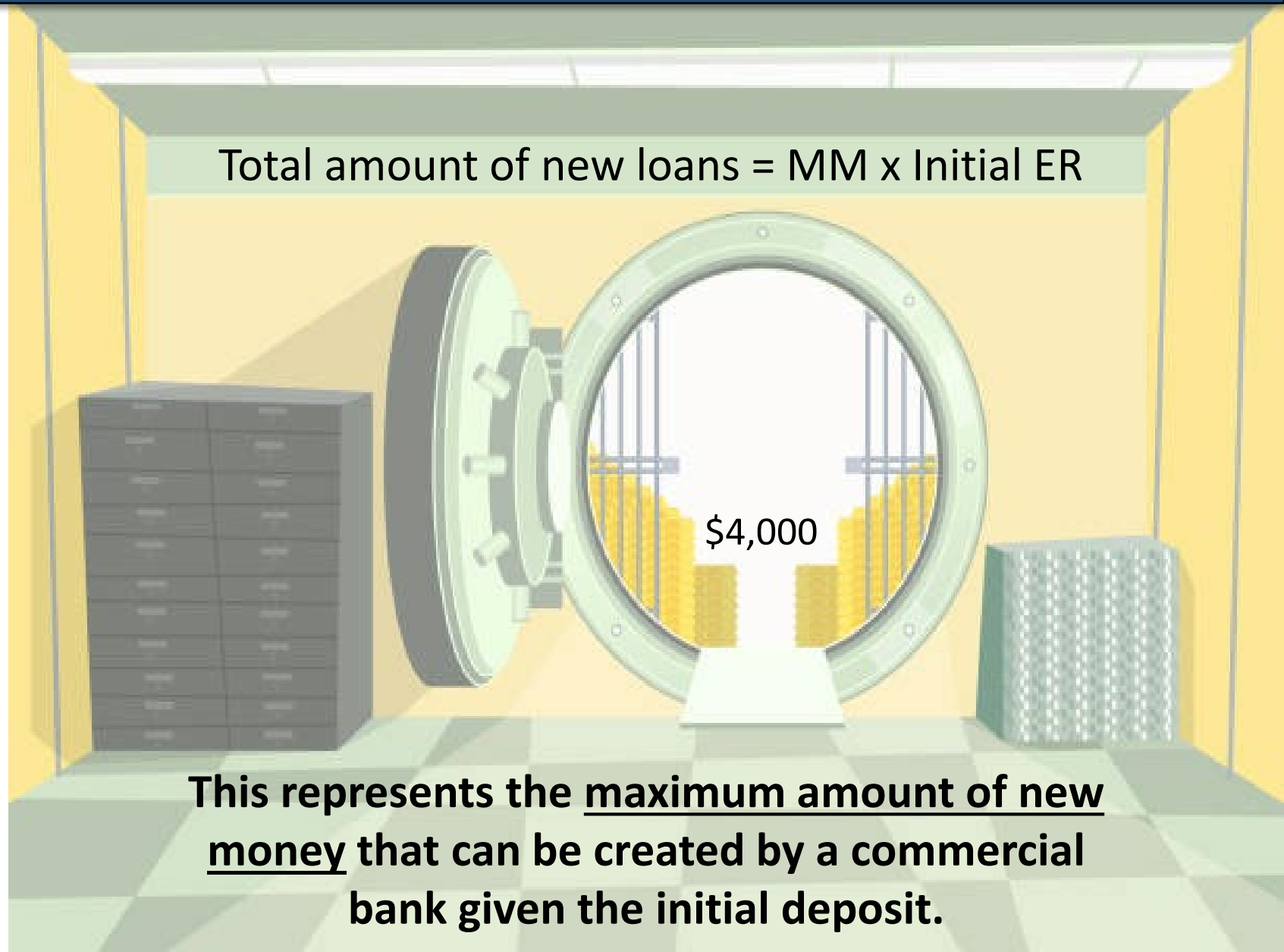
Monetary Policy

How central bank changes the money supply

The lower the MRR, the more new money can be created.

The higher the MRR, the less money can be created.

What is the MRR in Hong Kong?



This represents the maximum amount of new money that can be created by a commercial bank given the initial deposit.

3.5 - 3.7 Demand-side and Supply-side Policies

Monetary Policy

Real vs Nominal interest rates

The **nominal rate of interest** is the market rate that prevails at any moment in time.

Real interest rate is the interest rate that has been corrected for inflation.

Real IR = Nominal IR – Rate of Inflation

Interest rate needs to be at least as high as inflation rate to protect value of savings.

3.5 - 3.7 Demand-side and Supply-side Policies

Monetary Policy

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Philippines Keeps Rate Steady With Inflation Concerns Rising

The Philippine central bank held its benchmark interest rate at a record low for a second straight meeting to boost an economy that remains in recession and with inflationary pressures starting to mount.

Bangko Sentral ng Pilipinas left the benchmark rate at 2% Thursday, as predicted by all 19 analysts in a Bloomberg survey. The bank significantly raised its inflation forecast for the year-- to 4% from the 3.2% it predicted in December -- but said supply problems driving up food costs were transitory.

"The manageable inflation outlook continues to allow the BSP to maintain an accommodative policy stance, and thus complement crucial fiscal policy measures in supporting economic activity and market confidence," Governor Benjamin Diokno said. Still, he called for "urgent and coordinated efforts with government agencies" to address the food-supply issues.

Philippine stocks closed down 1.3% on the day before the rates decision. The peso was little changed at 48.045 per dollar.

3.5 - 3.7 Demand-side and Supply-side Policies

Monetary Policy

Interest rates & aggregate demand

Changes in interest rates mainly affect two of the four components of aggregate demand

$$AD = C + I + G + (X - M)$$

Test your understanding…

Identify the two components which interest rates mainly affect.

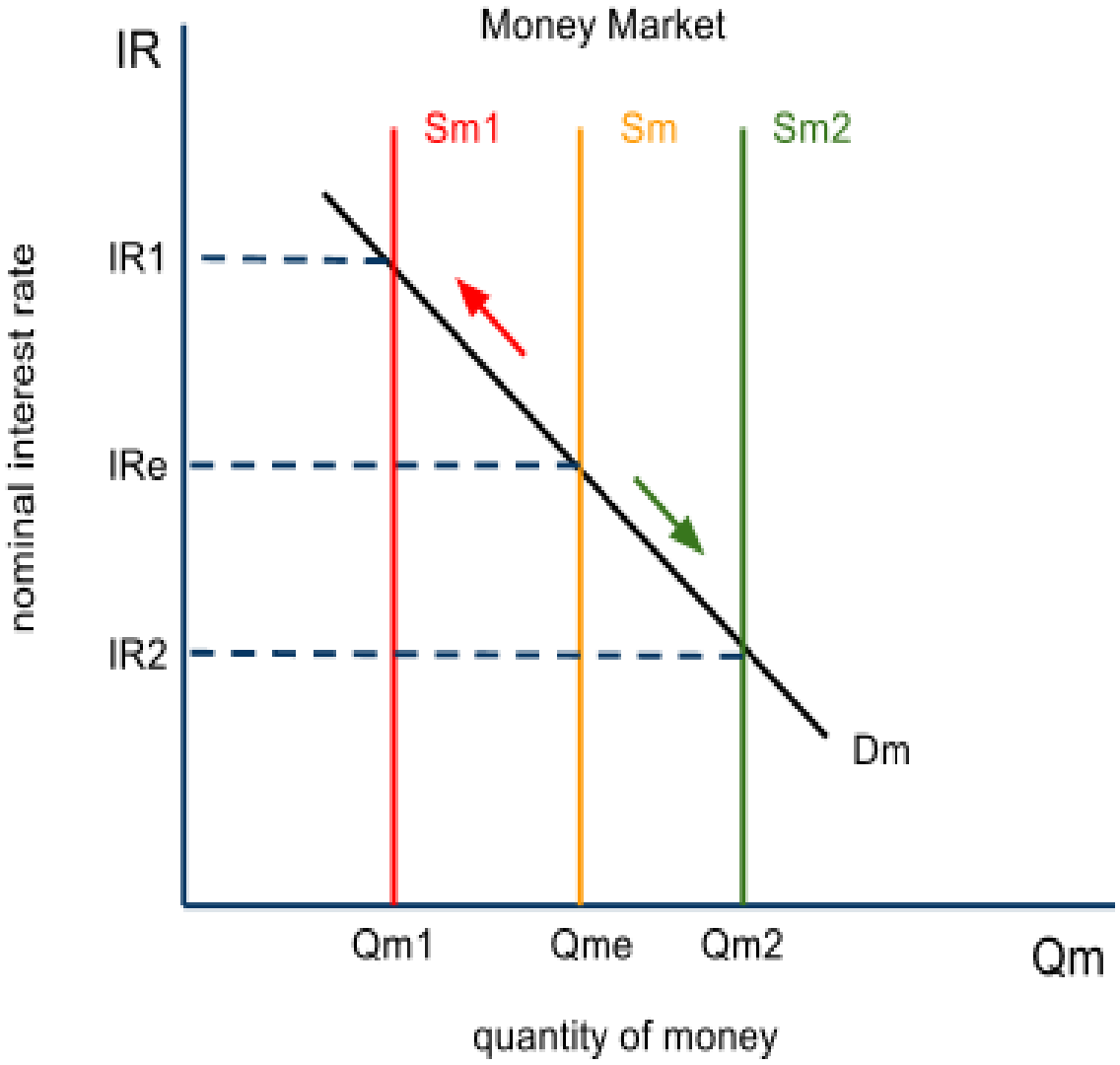
3.5 - 3.7 Demand-side and Supply-side Policies

Monetary Policy

Expansionary monetary supply

An action by the central bank which causes the money supply to <u>increase</u>.

- This will cause the supply curve to **shift to the right from Sm to Sm2**
- **Interest rate** falls from **IRe to IR2**
- Banks have more money in their reserves which they want to loan out, so they will lower the rates to attract more borrowers.



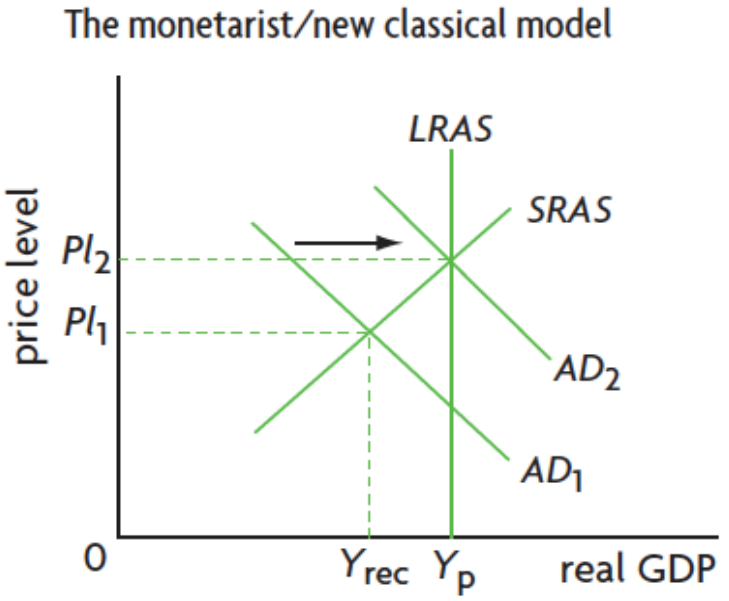
3.5 - 3.7 Demand-side and Supply-side Policies

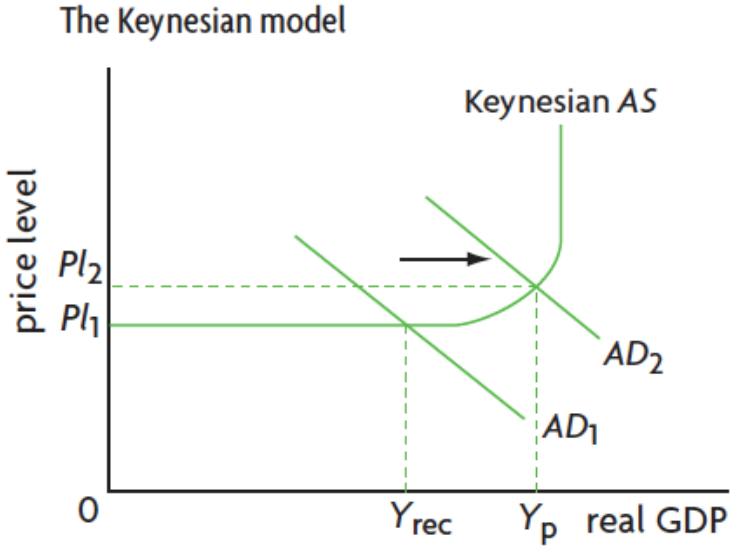
Monetary Policy

Expansionary monetary supply (effects)

Recessionary gap can be reduced when the central bank decides to increase the money supply.

- Lower interest rate stimulates spending in the economy by firms and consumers.
- Aggregate demand increases and the curve **shifts to the right from AD1 to AD2**.
- Effect of the AD increase are different depending on the shape of the AS curves.





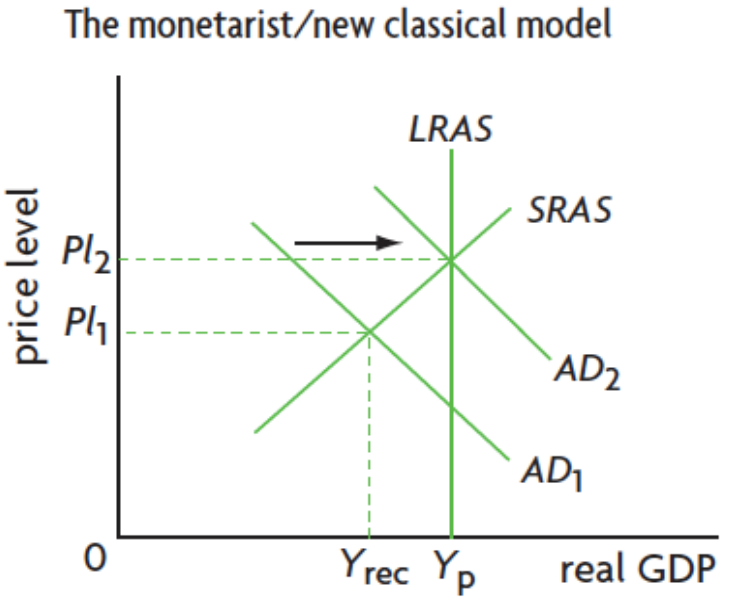
3.5 - 3.7 Demand-side and Supply-side Policies

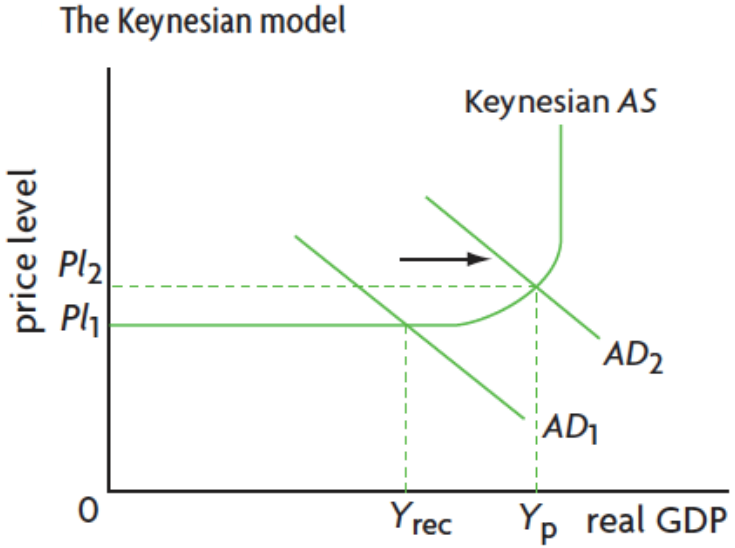
Monetary Policy

Expansionary monetary supply (effects)

Impact on **macroeconomic objectives**:

- *Price levels increase*
- Real GDP increase
- Unemployment decrease
- Income distribution - uncertain





3.5 - 3.7 Demand-side and Supply-side Policies

Monetary Policy

Expansionary monetary supply

Impact on **macroeconomic objectives**:

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- Real GDP increase
- Unemployment decrease
- Income distribution - uncertain

Expansionary policy (in recession)

Type of policy	Measures	Effects
Fiscal policy	increase government spending	increase *AD*
	lower personal income taxes → increase consumption spending	increase *AD*
	lower business taxes → increase investment spending	increase *AD*
Monetary policy	increase supply of money → lower interest rate →	
	(i) increase consumption spending	increase *AD*
	(ii) increase investment spending	increase *AD*

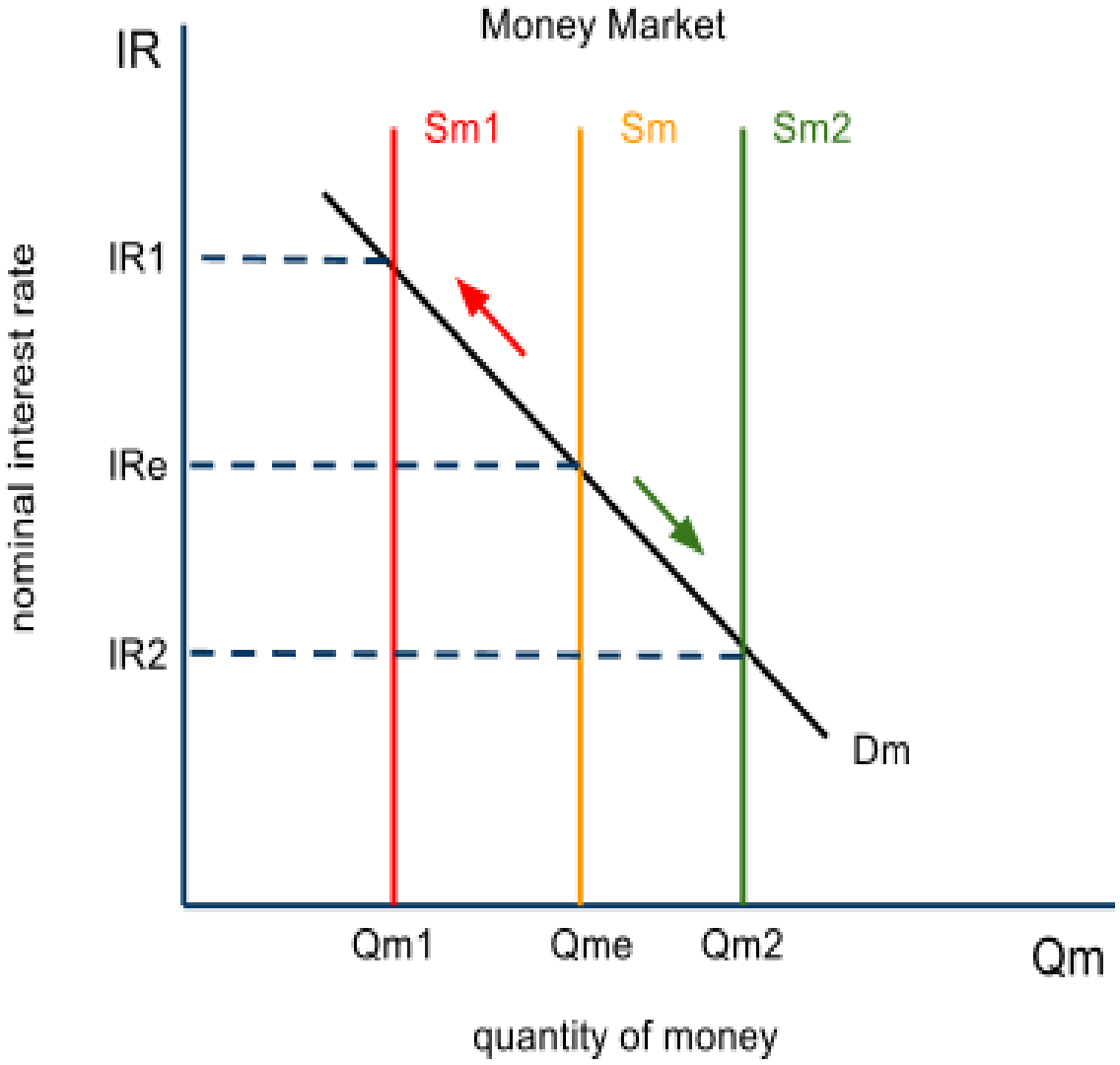
3.5 - 3.7 Demand-side and Supply-side Policies

Monetary Policy

Contractionary monetary supply

An action by the central bank which causes the money supply to decrease.

- This will cause the supply curve to **shift to the left from Sm to Sm1**
- **Interest rate** rises from **IRe to IR1**
- Banks have less money in their reserves, therefore have less to loan out.
  Money becomes more scarce.



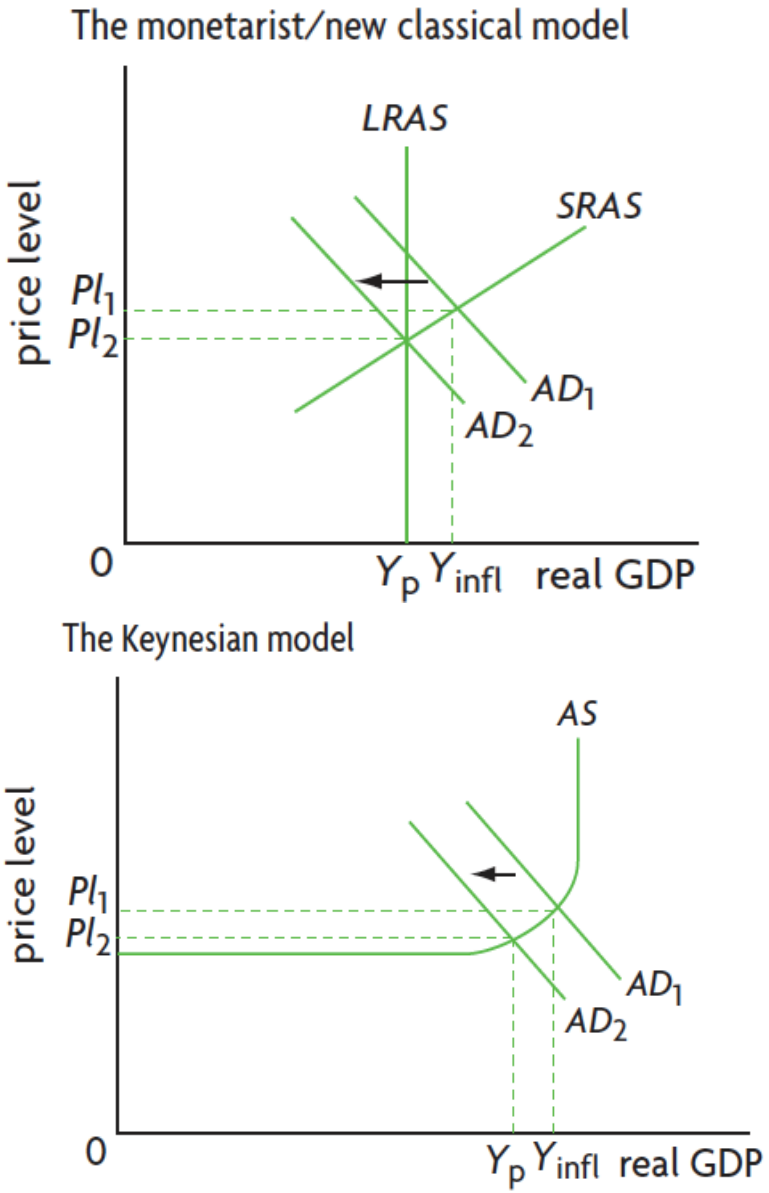
3.5 - 3.7 Demand-side and Supply-side Policies

Monetary Policy

Contractionary monetary supply (effects)

Inflationary gap can be reduced when the central bank decides to decrease the money supply.

- Higher interest rate discourages spending by firms and consumers.
- Aggregate demand decreases and the curve **shifts to the left from AD1 to AD2**.



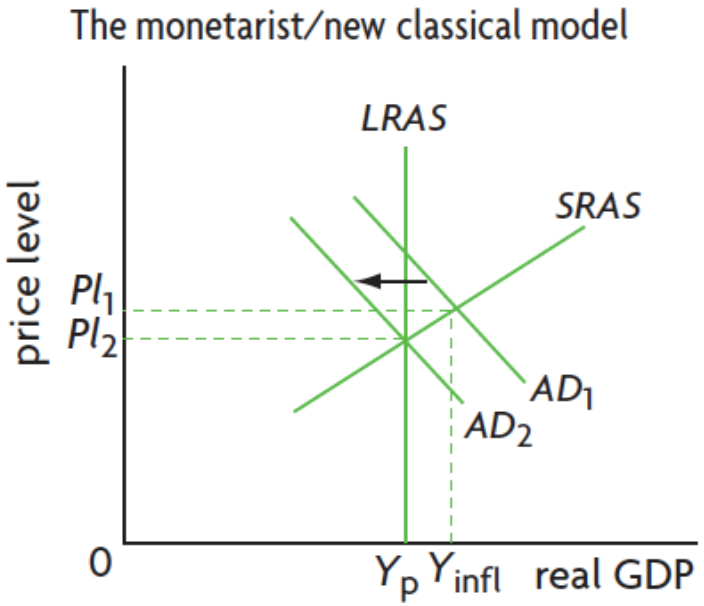
3.5 - 3.7 Demand-side and Supply-side Policies

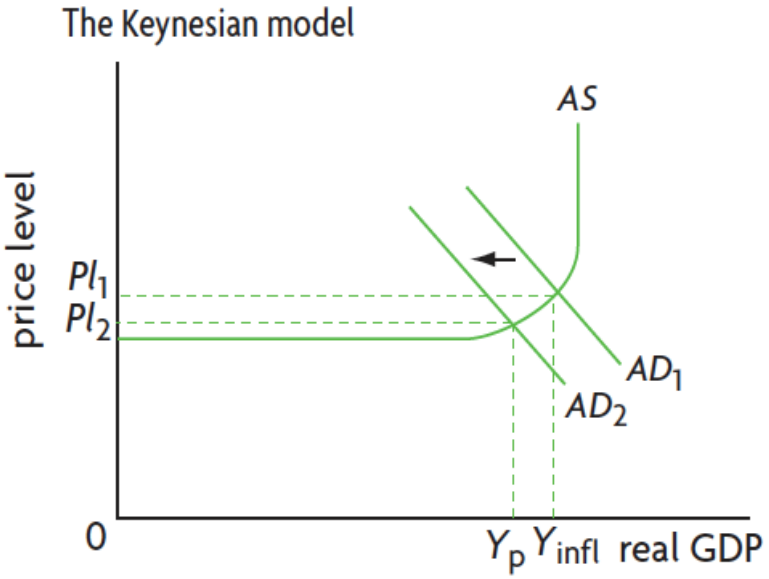
Monetary Policy

Contractionary monetary supply (effects)

Keynesian AS/AD Model

- If AD falls within the downward sloping section, the effects are similar to the New Classical Model
- If AD falls into the horizontal section, there would be a larger fall in real GDP and a smaller fall in the price level





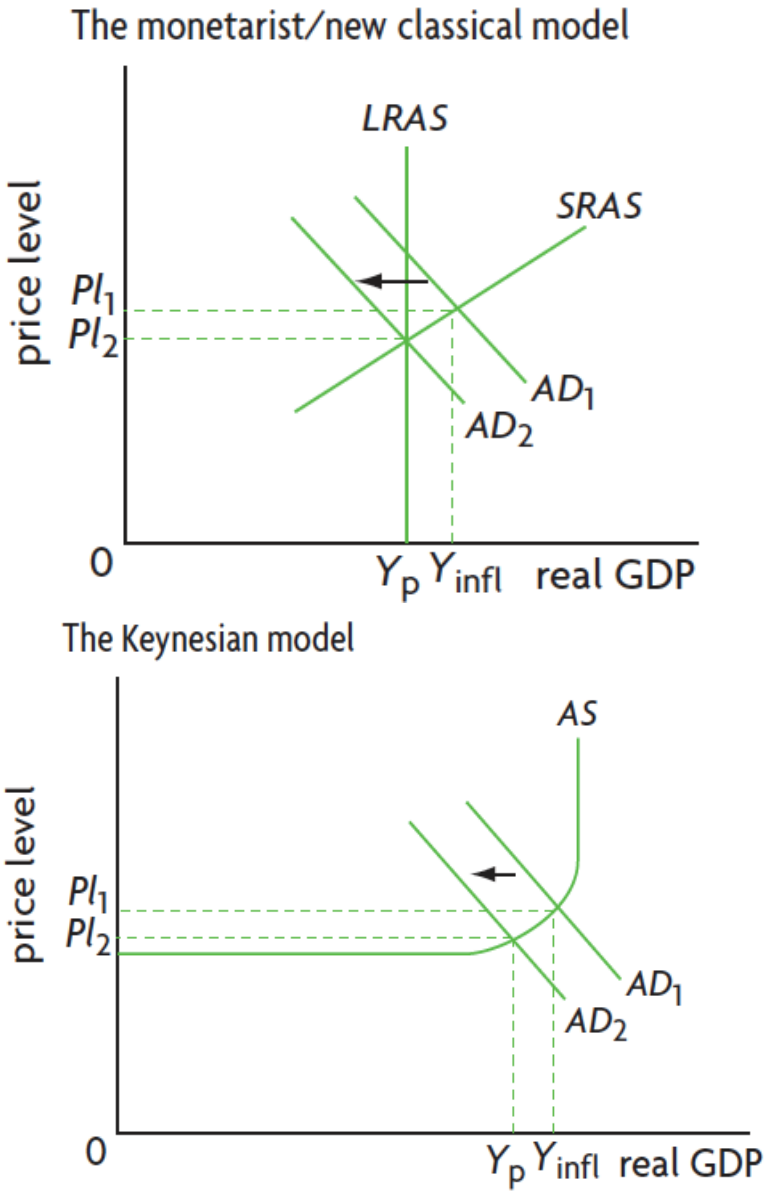
3.5 - 3.7 Demand-side and Supply-side Policies

Monetary Policy

Contractionary monetary supply (effects)

Impact on **macroeconomic objectives**:

- Price levels decrease
- Real GDP decrease
- Unemployment increase
- Income distribution - uncertain



3.5 - 3.7 Demand-side and Supply-side Policies

Monetary Policy

Contractionary monetary supply

Impact on **macroeconomic objectives**:

- Price levels decrease
- Real GDP decrease
- Unemployment increase
- Income distribution - uncertain

Contractionary policy (in inflation)

Type of policy	Measures	Effects
Fiscal policy	decrease government spending	decrease *AD*
	raise personal income taxes → decrease consumption spending	decrease *AD*
	raise business taxes → decrease investment spending	decrease *AD*
Monetary policy	decrease supply of money → raise interest rate →	
	(i) decrease consumption spending	decrease *AD*
	(ii) decrease investment spending	decrease *AD*

3.5 - 3.7 Demand-side and Supply-side Policies

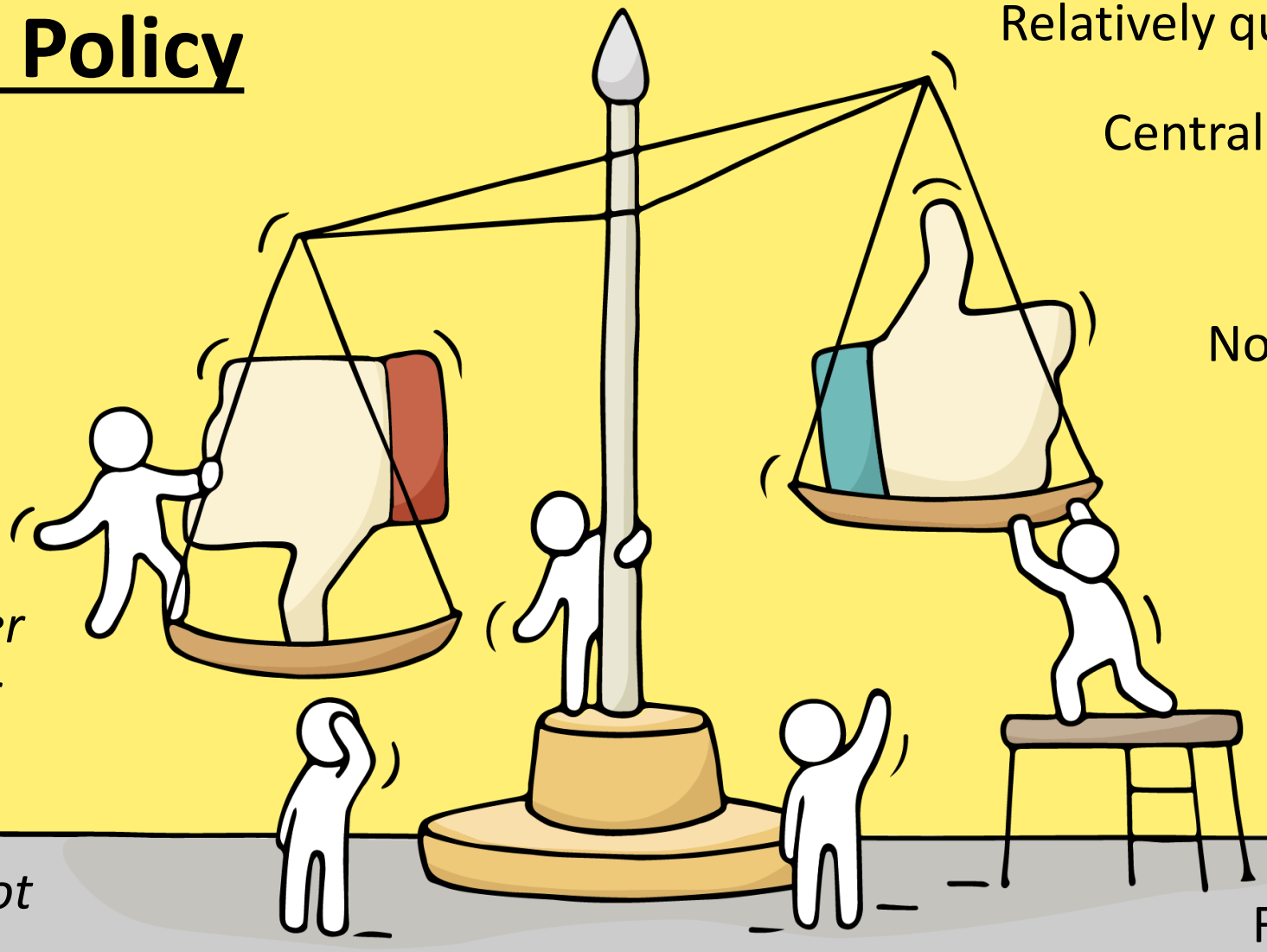
Monetary Policy

Possible ineffectiveness in recession

IR cannot fall below zero

Low consumer and producer confidence

Banks may not want to lend



Relatively quick implementation

Central bank independence

No budgets or debts

No political constraints

No crowding out

Ability to adjust interest rates incrementally (in small steps)

Flexible and reversible

3.5 - 3.7 Demand-side and Supply-side Policies

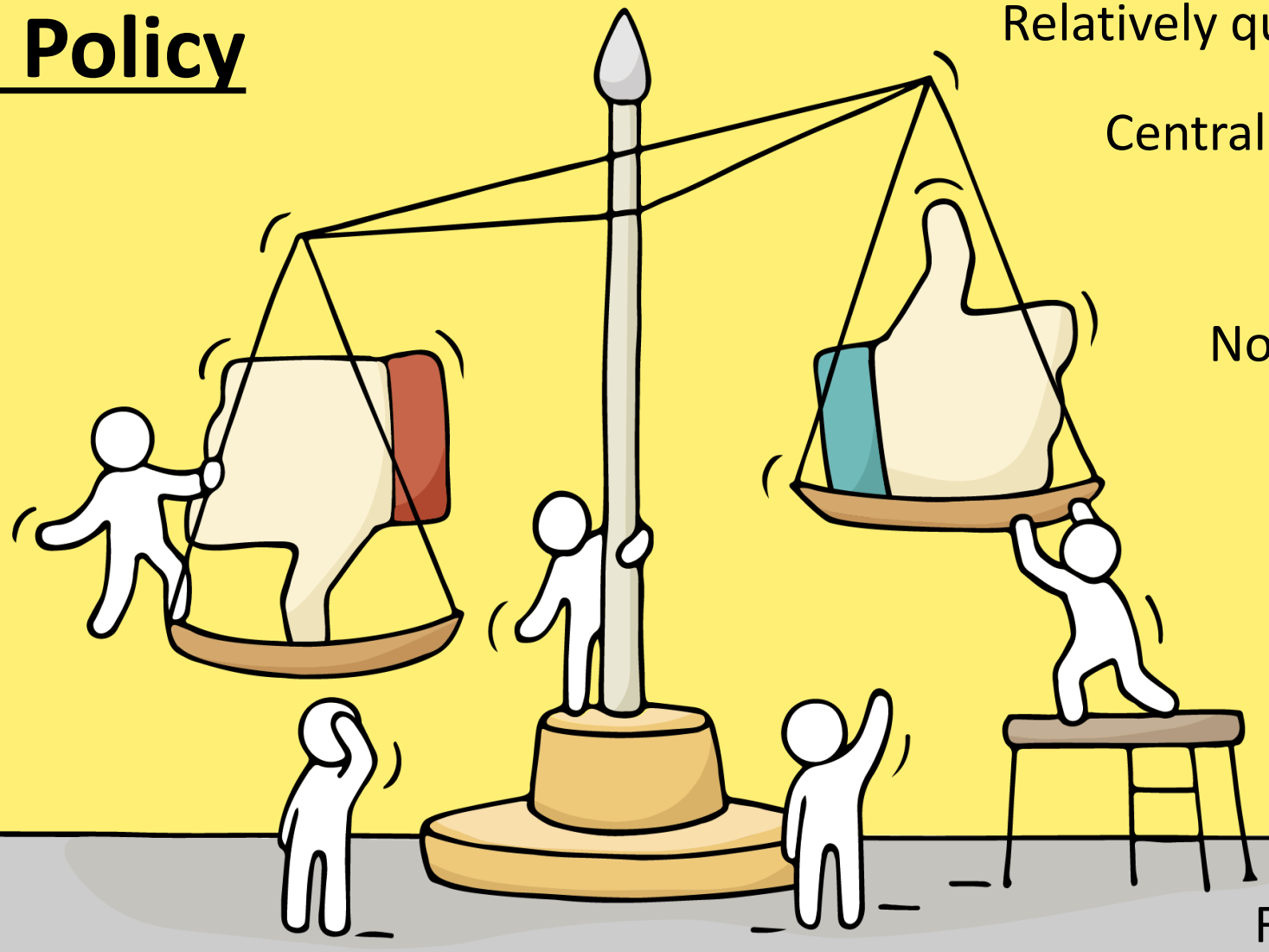
Monetary Policy

Possible ineffectiveness in recession

Time lags

Conflict between government objectives

Inability to deal with stagflation



Relatively quick implementation

Central bank independence

No budgets or debts

No political constraints

No crowding out

Ability to adjust interest rates incrementally (in small steps)

Flexible and reversible