Keynes and the failure of self-correction

Macroeconomic Policies

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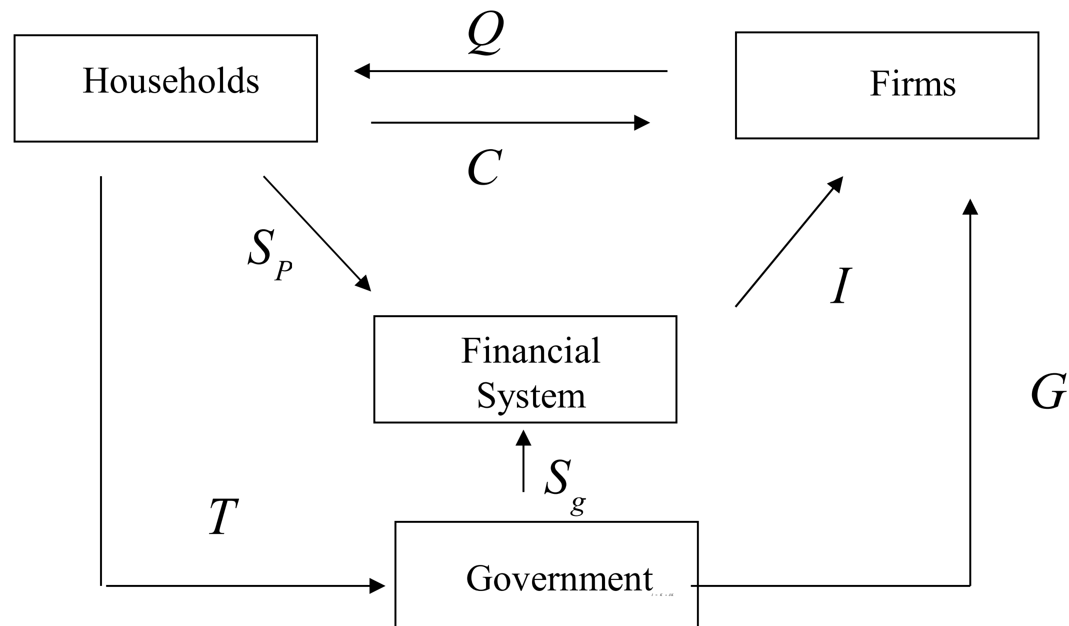
1. BASIC MODEL

Circular flow

Equilibrium: $Q = C + I + G$

Or, in alternative: $S = Q - C - G = I$



Assumptions

- Production function $Q = zF\left(N, \bar{K}\right)$ $F_N > 0$ $F_{NN} \leq 0$

- Savings and Investment
  - Private Savings: $S_P = S_P\left(\overset{+}{r}, Q \overset{+}{-} T\right)$
  - Government Savings: $S_G = T - G$
  - Investment:

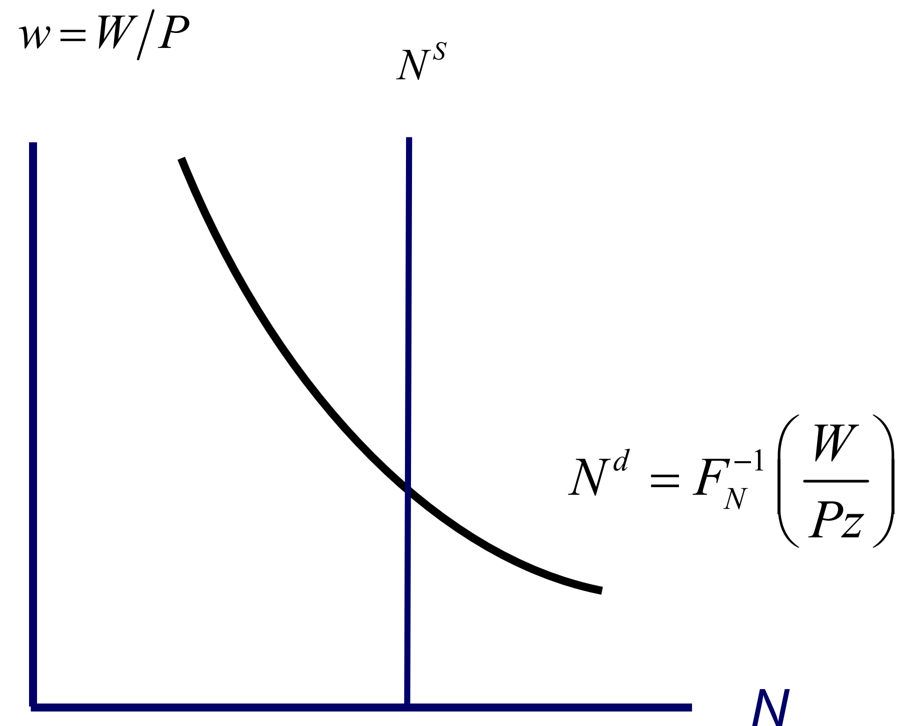
$$I = I\left(\overset{-}{r}, \overset{+}{z_{+1}^{E}}\right)$$

Labour Market

- Firms maximize profits:
  - Demand for labour:

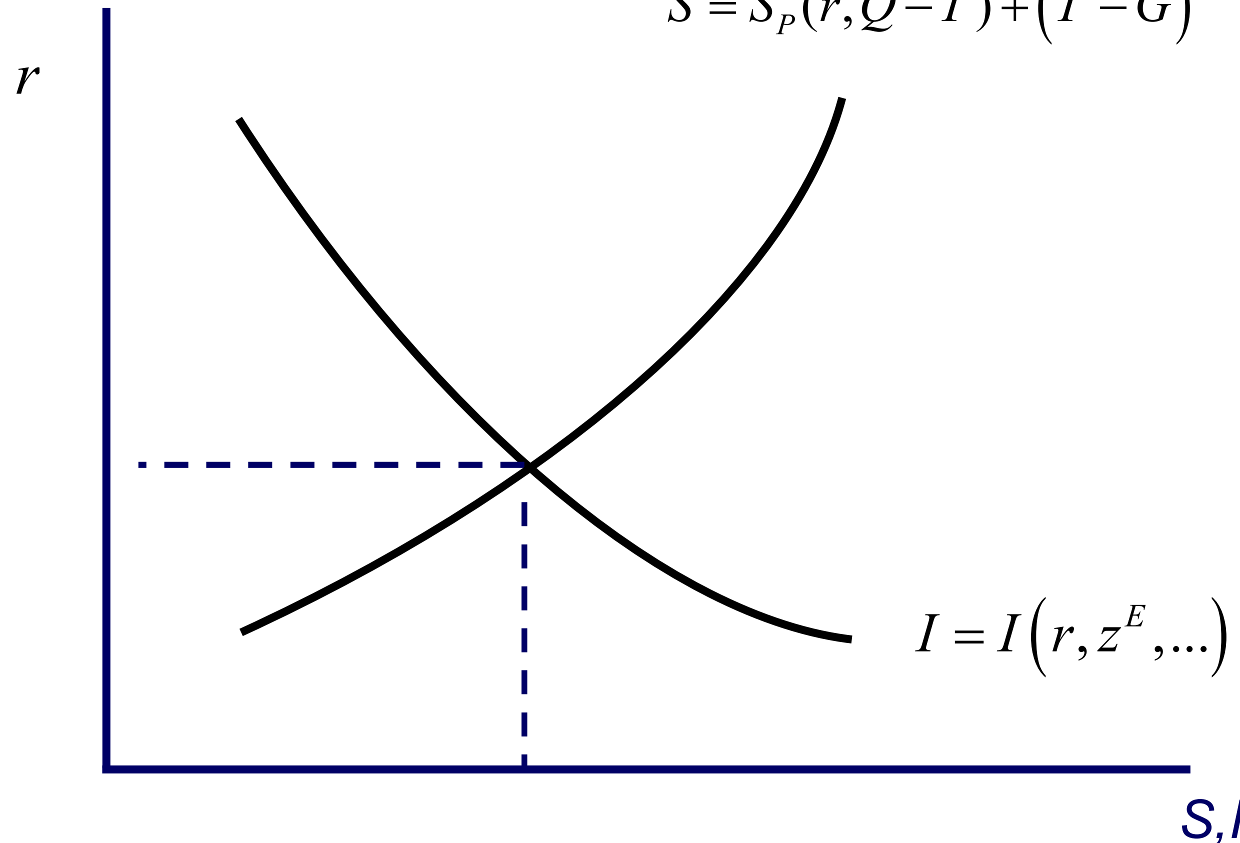
$$zF_N\left(N\right)=\frac{W}{P}$$

- Labour supply exogenous



Market for loanable funds

$$S_P\left(\overset{+}{r}, \overset{+}{Q} - T\right) + (T - G) = I\left(\overset{-}{r}, \overset{+}{z}{}^{E}_{t+1}\right)$$



There are two possible candidates to clear the market for goods and services:

- income (Q),
- interest rate (r)

The variable that actually adjusts is a matter of disagreement between the classical and the Keynesian views.

“My Wife and My Mother-in-Law”, William Ely Hill.

2. THE CLASSICAL VIEW

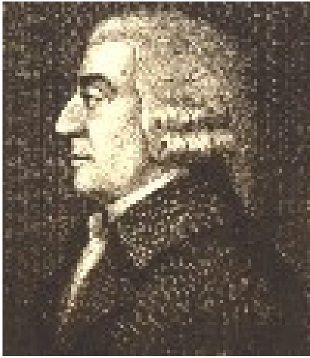
The Classical view

The term 'classical' refers to work done by a group of economists in the 18th and 19th centuries who advocated the *Laissez-faire*

Adam Smith
(1723-1790)

Thomas Malthus
(1766-1834)

David Ricardo
(1772-1823)



Adam Smith
(1723-1790)

- Scottish, Graduated from Glasgow at the age of 17
- Father of Economics
- Developed much of the theory about free markets, that we regard as standard now.

✓ Market forces ensure the production of the right goods and services.

✓ This happens because producers want to make profits.

✓ Under laissez-faire, public well-being would increase from competition.

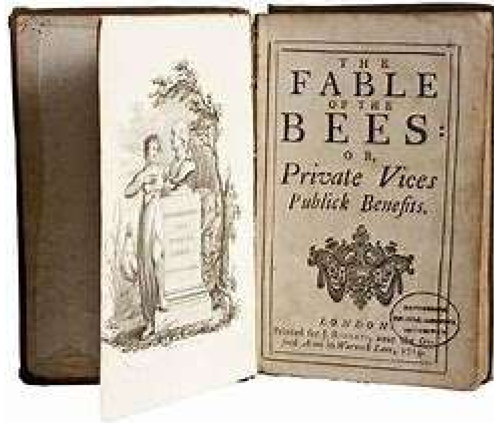
Invisible Hand:

•Competition (and free entry) would mean that producers would try to outsell each other and this would bring prices down to their lowest possible levels (making minimal profit).

- This would end up benefiting the consumer without government intervention.
- But Smith recognized the danger of monopolies

• Classical economists trusted the self correction forces of the economy

Private vices, public benefits



Bernard Mandeville (1670—1733)

- Self-seeking individuals will interact in mutually beneficial ways without being coordinated from above.
- Interference with this self-seeking will pervert the balance.
- Vice can be disguised, and yet is necessary in the attainment of collective goods
  - For instance, pride is a vice, and yet without pride there would be no fashion industry, as individuals would lack the motivation to buy new and expensive clothes.
- Private vices result in public benefits like industry, employment and economic flourishing.

Macroeconomics Prior to the Great Depression

"Classical economists" stressed the importance of **production** and paid little heed to the demand side

Two key assumptions:

- Competitive markets
- Flexible prices

Thus:

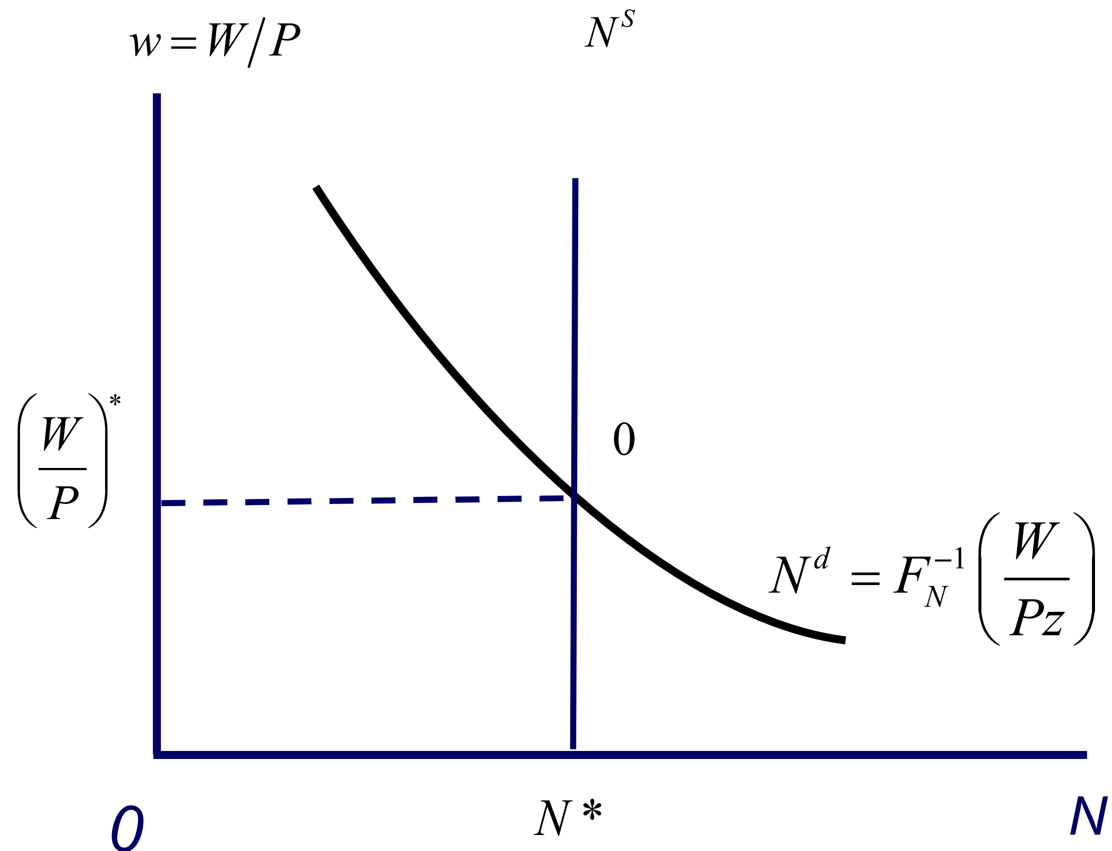
- The real wage clears the labour market: $w^* : N^S = N^d$
  - Same for other markets
- Output will be at full employment: $Q^* = zF\left(N^*\right)$

Equilibrium in the labour market

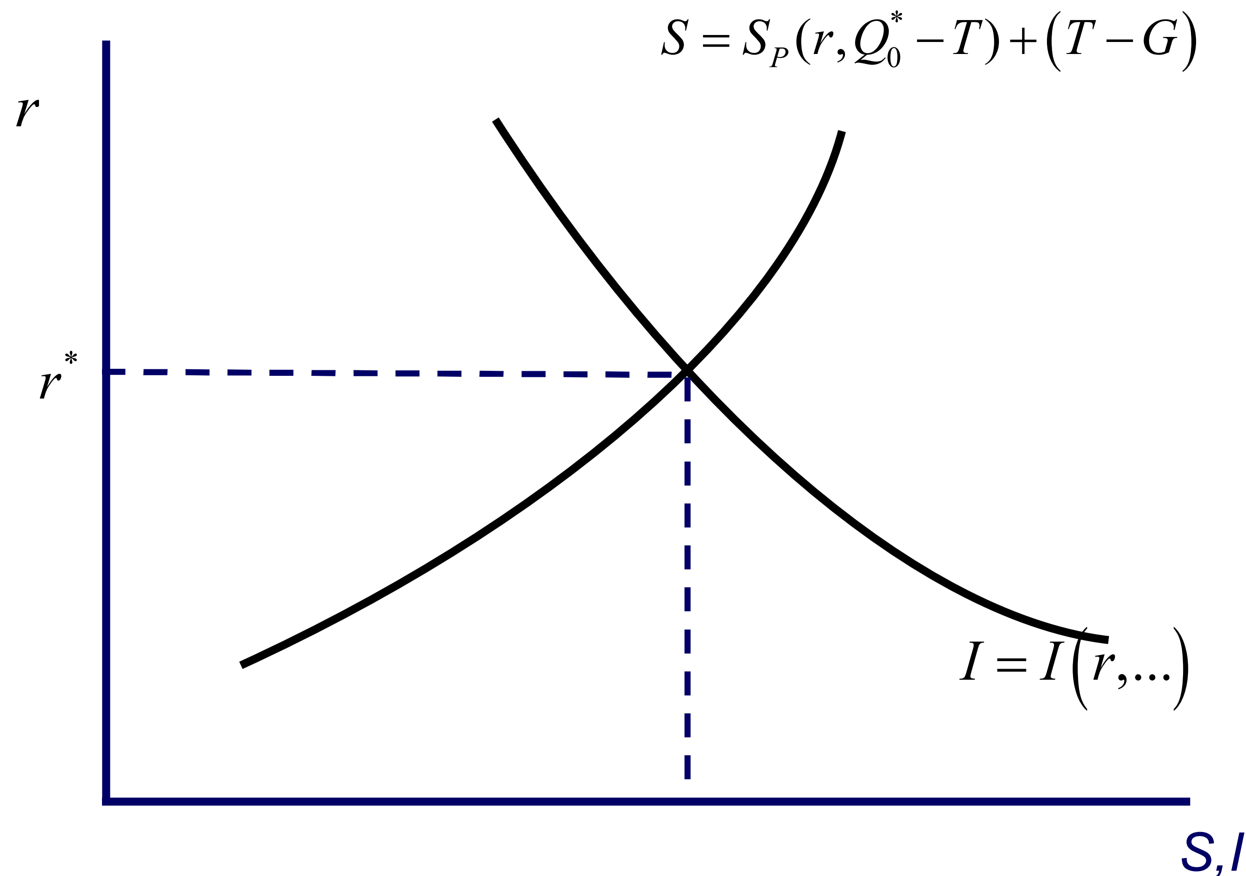
- Wages and prices flexible

- Real wages adjust to ensure full employment

$$Q^* = zF\left(N^*\right)$$



Market for loanable funds



Given output, the real interest rate adjusts to clear the market for loanable funds

- Today we label it as the "natural interest rate"

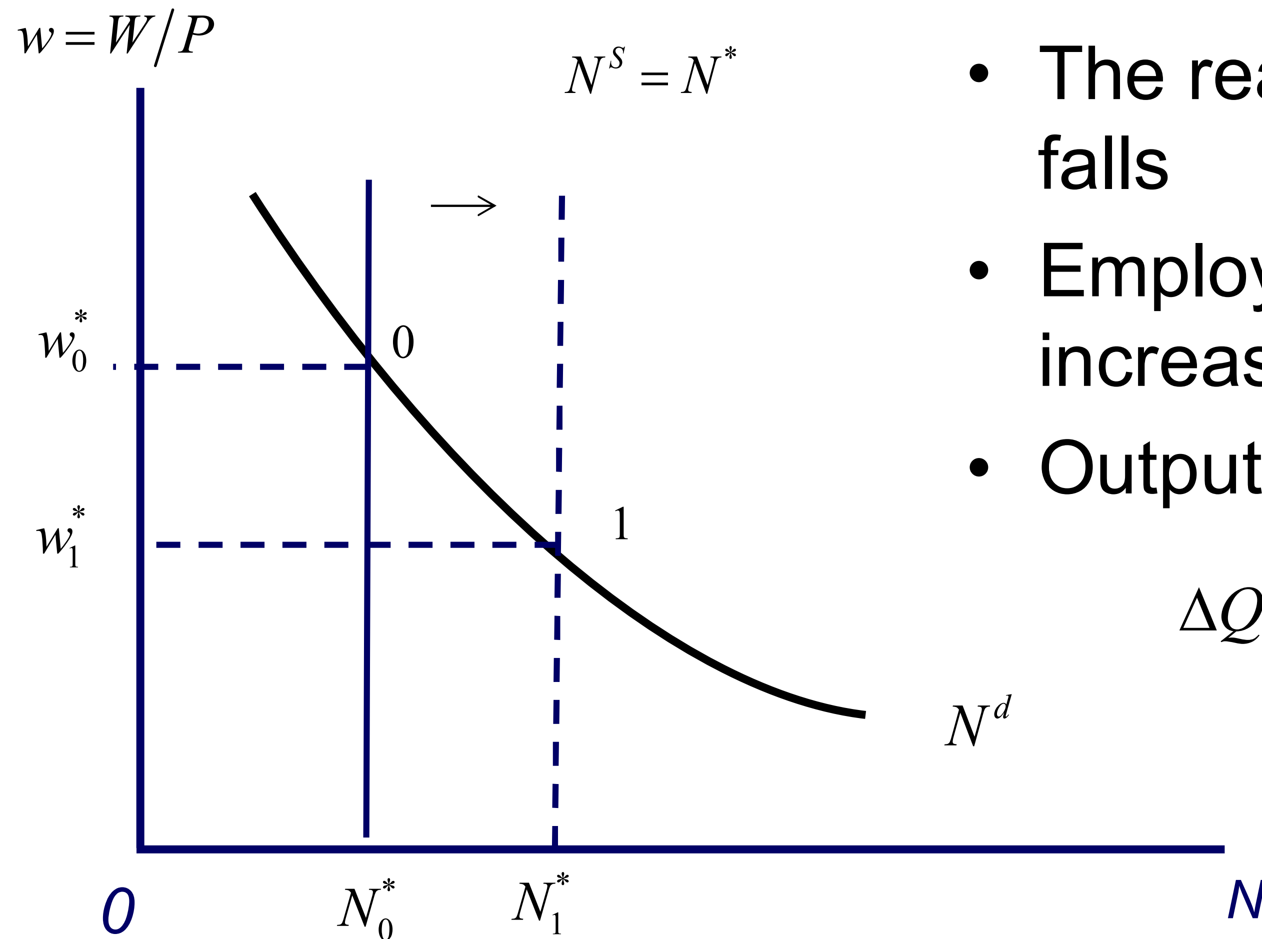
Jean-Baptiste SAY (1776-1832)

French businessman that introduced the work of Adam Smith to Europe.

- Say can take credit for the way in which we tend to divide the factor of production into Land (all natural resources, Labor (all human resources, and Capital (man-made resources to aid production)
- However, he is best known for his "LAW OF MARKETS" or Say's Law, which states: "Supply creates it's own demand."

Illustration of the Say's Law

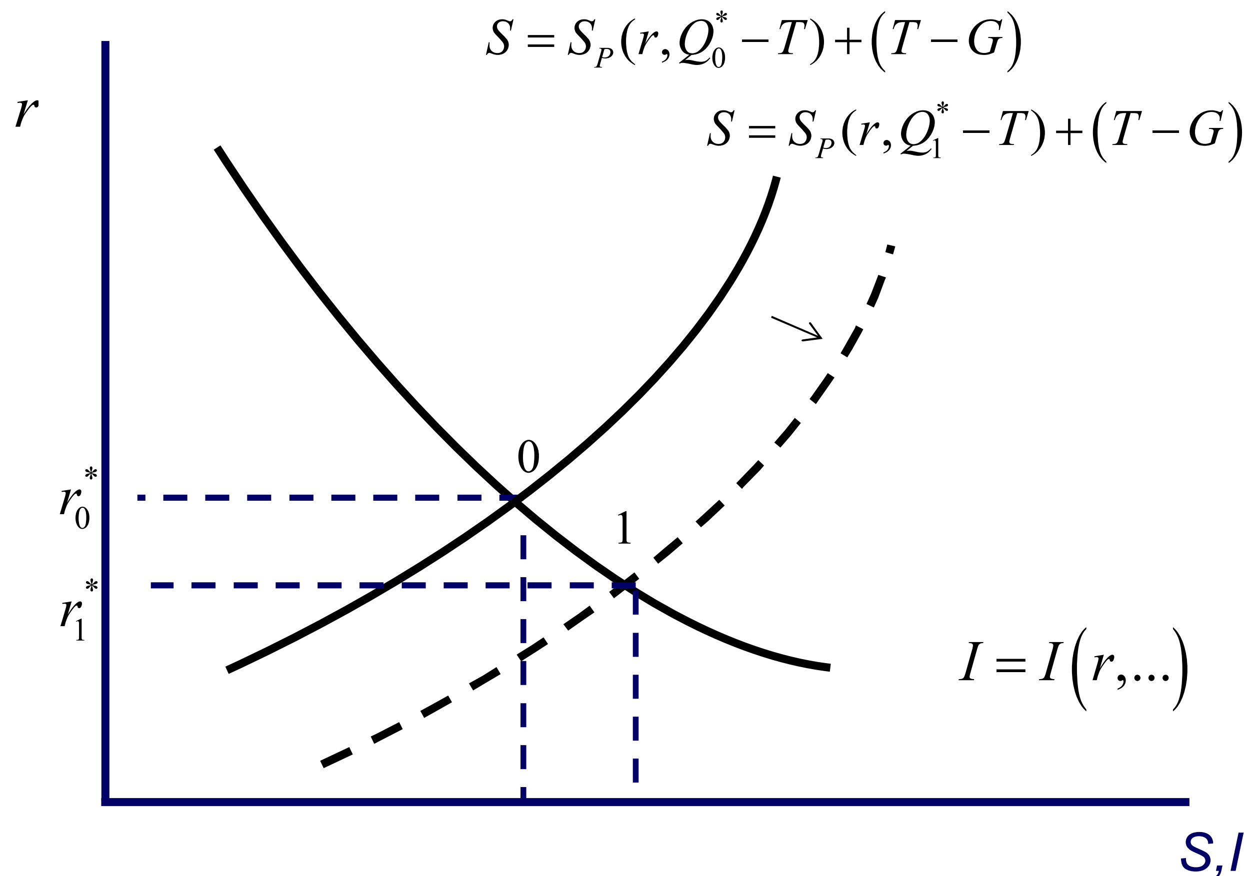
- What happens if population expands?



- The real wage falls
- Employment increases
- Output expands

$$\Delta Q^* = zF_N \Delta N^*$$

Market for loanable funds



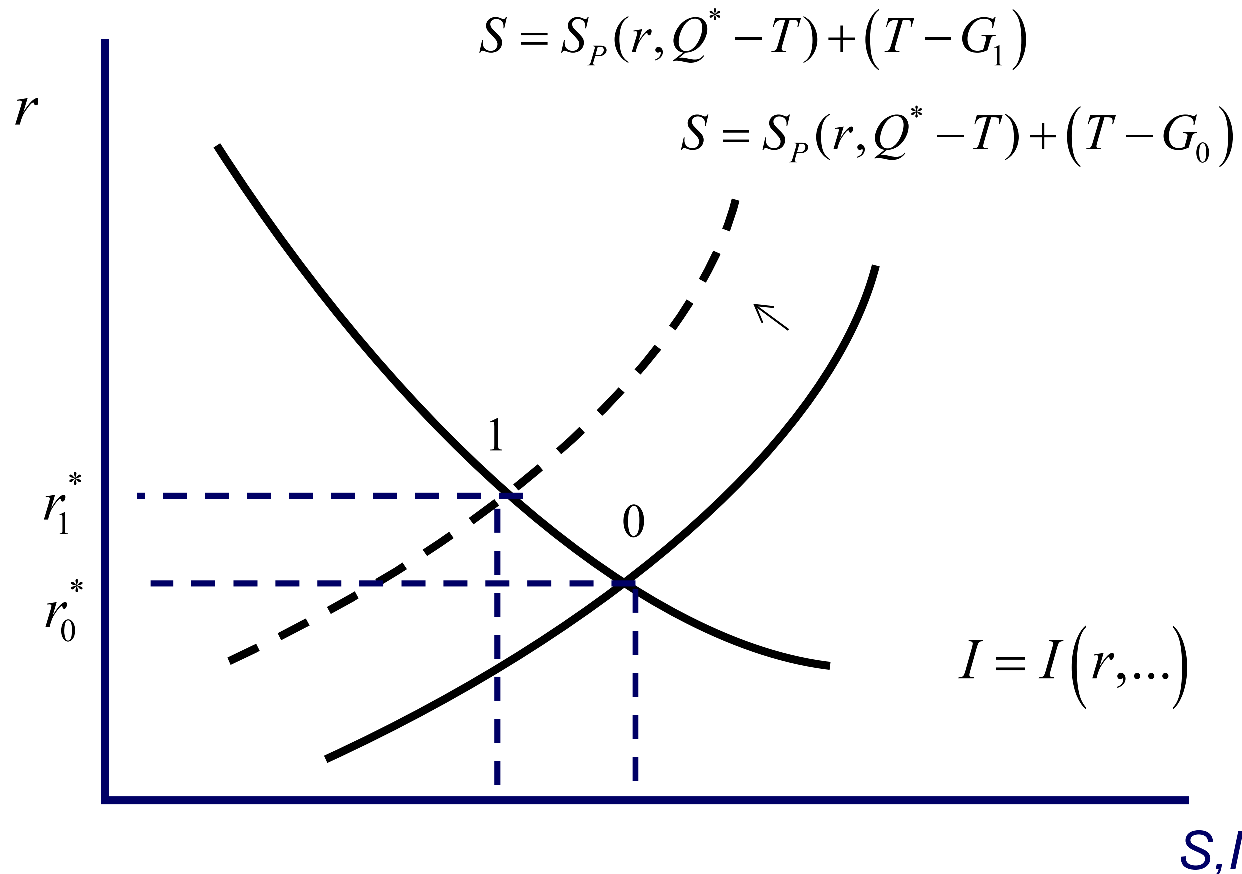
The fall in the real interest rate ensures the increase in aggregate demand:

- Savings decline
- Investment increases

$$\Delta I + \Delta C = \Delta Q^*$$

Crowding out

Government expenditures crowd out private spending



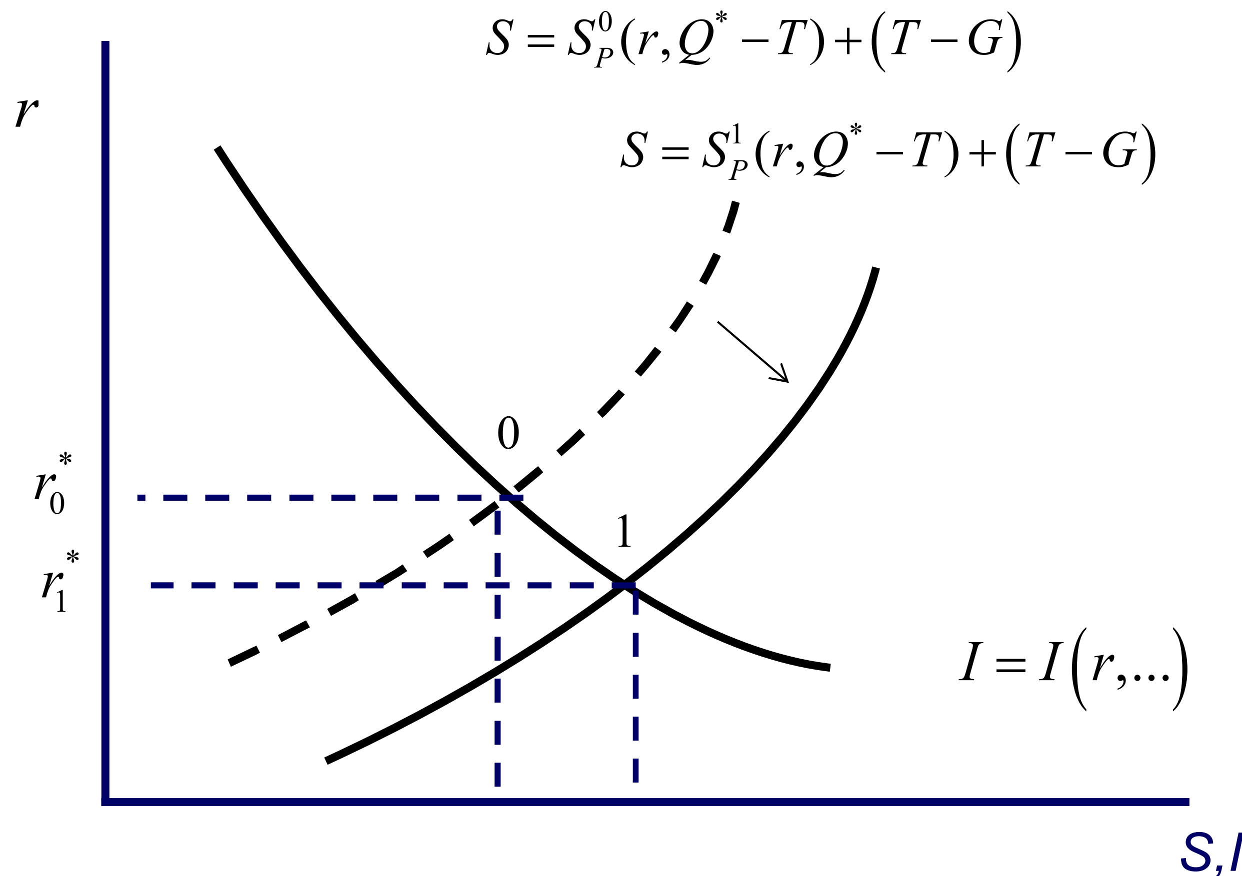
If government expenditures increase, savings will decline, causing the interest rate to increase

$$\Delta G + \Delta I + \Delta C = 0$$

Composition of demand has changed

Savings are good for growth

If the desire for savings increase, the interest rate will fall



Investment will increase

$$\Delta I + \Delta C = 0$$

Current output is unaffected, but future output will expand

Irwin Fisher
(1867-1947)

Classical dichotomy

"Real variables are independent of the price level"

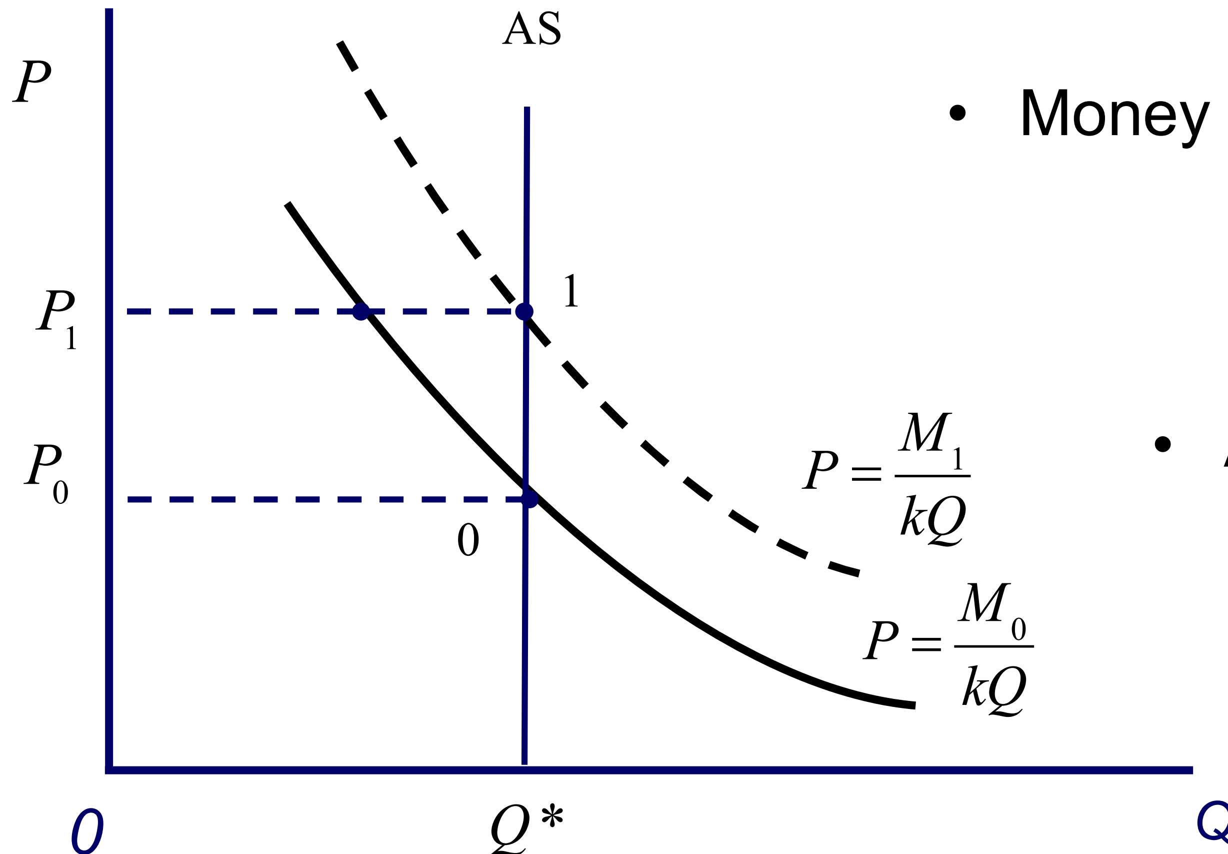
- Quantity theory of money

$$m^d = kQ$$

- Money market equilibrium

$$\frac{M^S}{P} = kQ$$

- AS: $Q = Q^*$



"Money only produces nominal effects"

Summary: the classical view

1 - **Say's law**: "Supply creates its own demand".

Real interest rates ensures S=I.

Hence, aggregate demand is determined by income.

2 – **Classical dichotomy** : "Real variables are independent of the price level"

Irwin Fisher formulated the quantity theory of money in terms of the "equation of exchange: MV=PQ

- Only relative prices matter
- The equilibrium price level is determined by the money supply and demand.

Classical economists believed that competitive markets and flexible prices would ensure that the economy would naturally gravitate toward full employment. No need for stabilization.

At most, government could promote wage flexibility

- The sole classical economist concerned with high unemployment was Pigou: in 1913, he claimed that policy should be directed to promote wage flexibility, so as to ease the automatic adjustment,

Jean-Baptiste SAY (1776-1832)

Irwin Fisher (1867-1947)

Arthur Pigou (1877-1959)

3. STICKY WAGES

The great depression

The Great Depression was an intellectual failure for the economists working on **business cycle theory**—as macroeconomics was then called.

- Output fell by 30 percent and unemployment rose to 20 percent.
- People wanted to work but could not find jobs at any wage.
- The lengthy duration of the Great Depression undermined the classical view.
- After the Depression, most people believed government should have a role in regulating the economy.
- The classical laissez-faire looked factually wrong and immoral.

Keynes and the failure of self-correction

John Maynard KEYNES (1883-1946)

[Graduate of Cambridge -studied Classics and Math]

Keynes asked:

- "If supply creates its own demand, why are we having a worldwide depression?"

The publication of Keynes's *General Theory of Employment, Interest, and Money, in 1936, launches macroeconomics as a discipline.*

Keynes and the failure of self-correction

- The price mechanism is not fast enough
- The economy may reach an equilibrium which is not full employment
  - Potential output is driven by technology and resources
  - But firms produce only the quantity of goods they believe consumers, investors, governments, and foreigners are planning to buy.
  - When inventories rise, production declines
- " Effective demand determines output"
  - Say's Law holds in Reverse

John Maynard KEYNES (1883-1946)

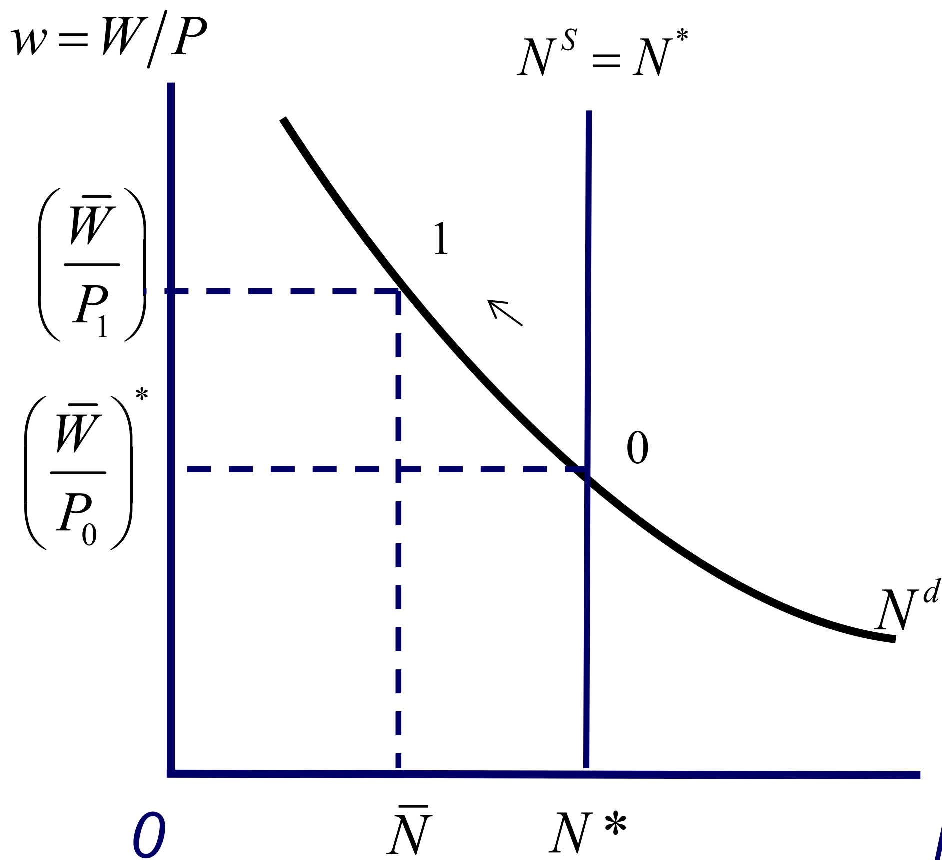
Key ingredients:

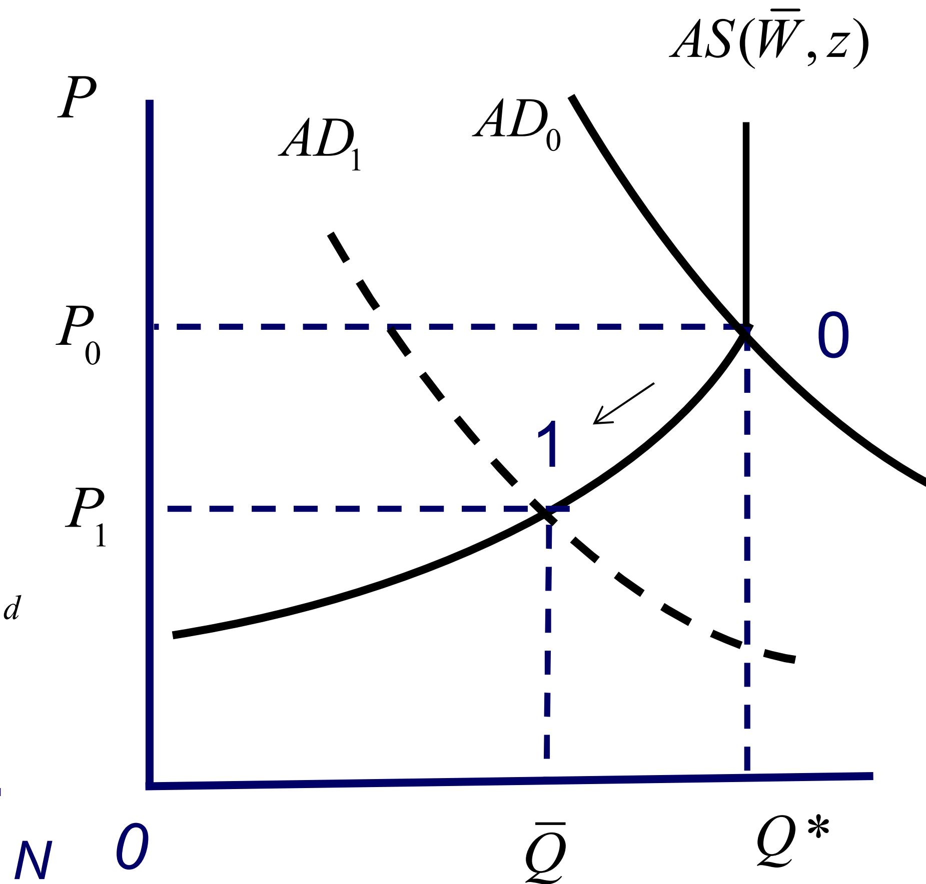
1. Wage and price stickiness
2. The theory of liquidity preference

Sticky wages

- Demand contraction (animal spirits)
- Sticky nominal wages
- Workers are rationed but firms are not
- Classical unemployment

$$Q = zF\left[N^d\left(\bar{W}/P\right)\right]$$



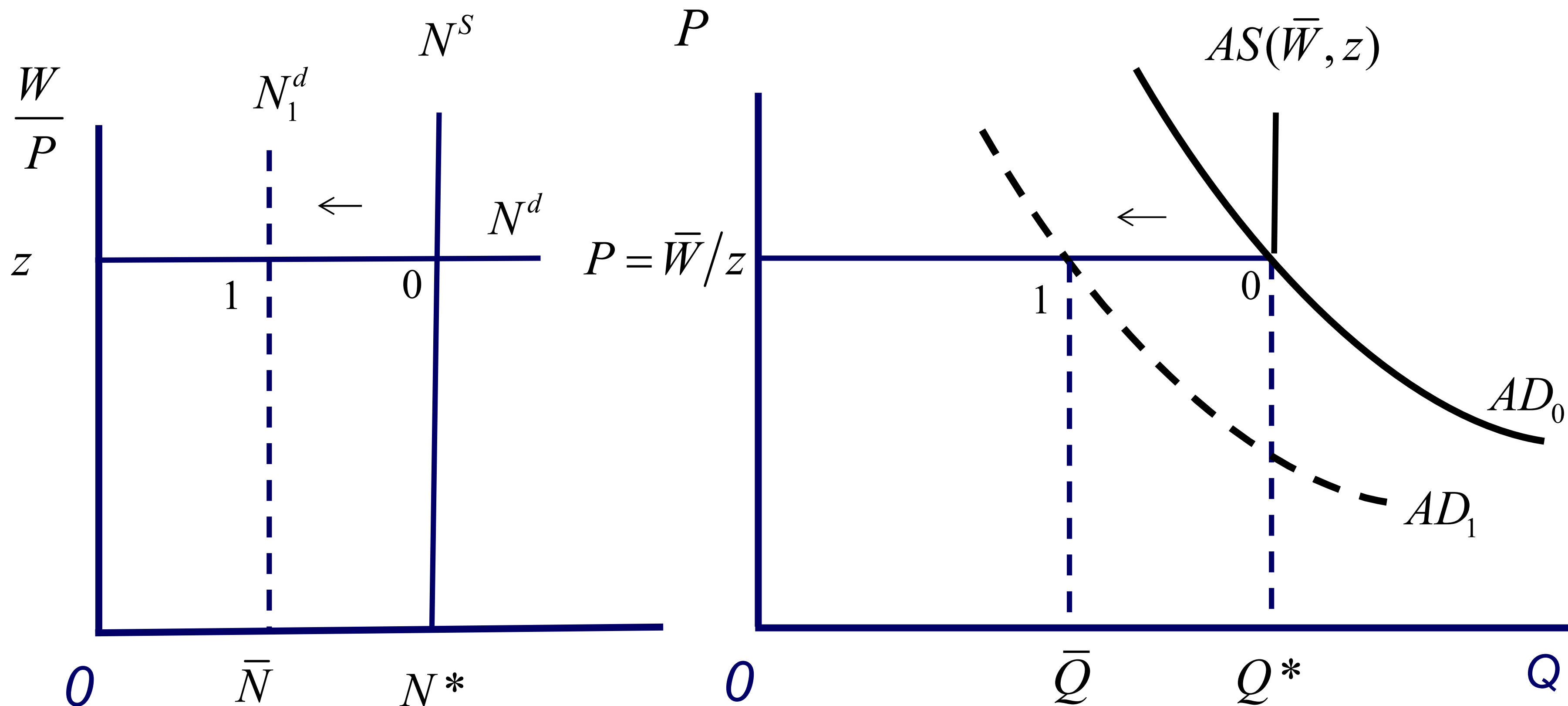


Keynesian supply curve

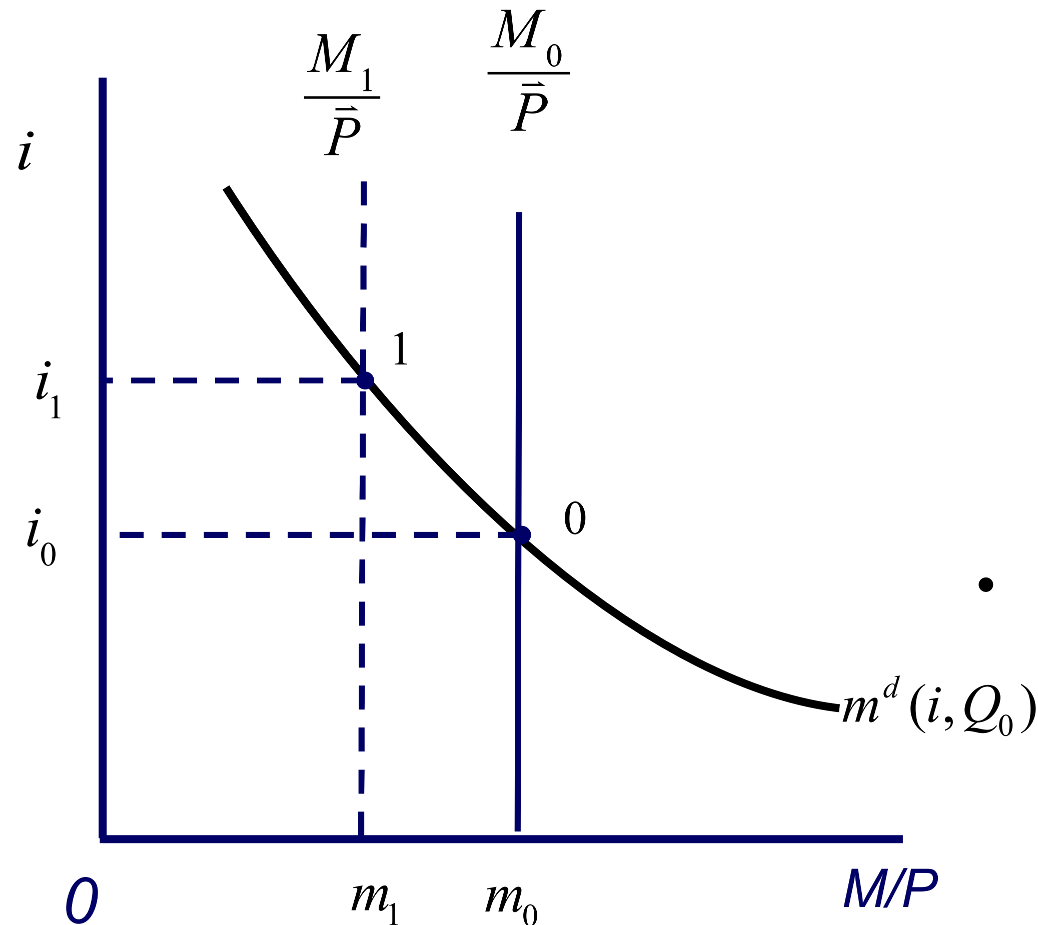
$$Q = zN$$

$$z = \frac{W}{P}$$

- Keynesian unemployment
- "Effective" labour demand (firms are rationed too)



Liquidity preference



- Money demand
  - Driven by transaction purposes
  - But money velocity can be destabilized by changes in the opportunity cost of holding money (bond yields).

$$m^d = m(i, Q)$$

- Sticky Prices
  - Interest rate adjusts to clear the money market
  - Interest rate is a “monetary variable”

Simultaneous determination

- Savings and Investment (IS)

$$S_P\left(\overset{+}{r}, \overset{+}{Q-\bar{T}}\right) + \left(\bar{T} - \bar{G}\right) = I\left(\overset{-}{r}, \overset{+}{z^E}\right)$$

- Money demand and Supply (LM)

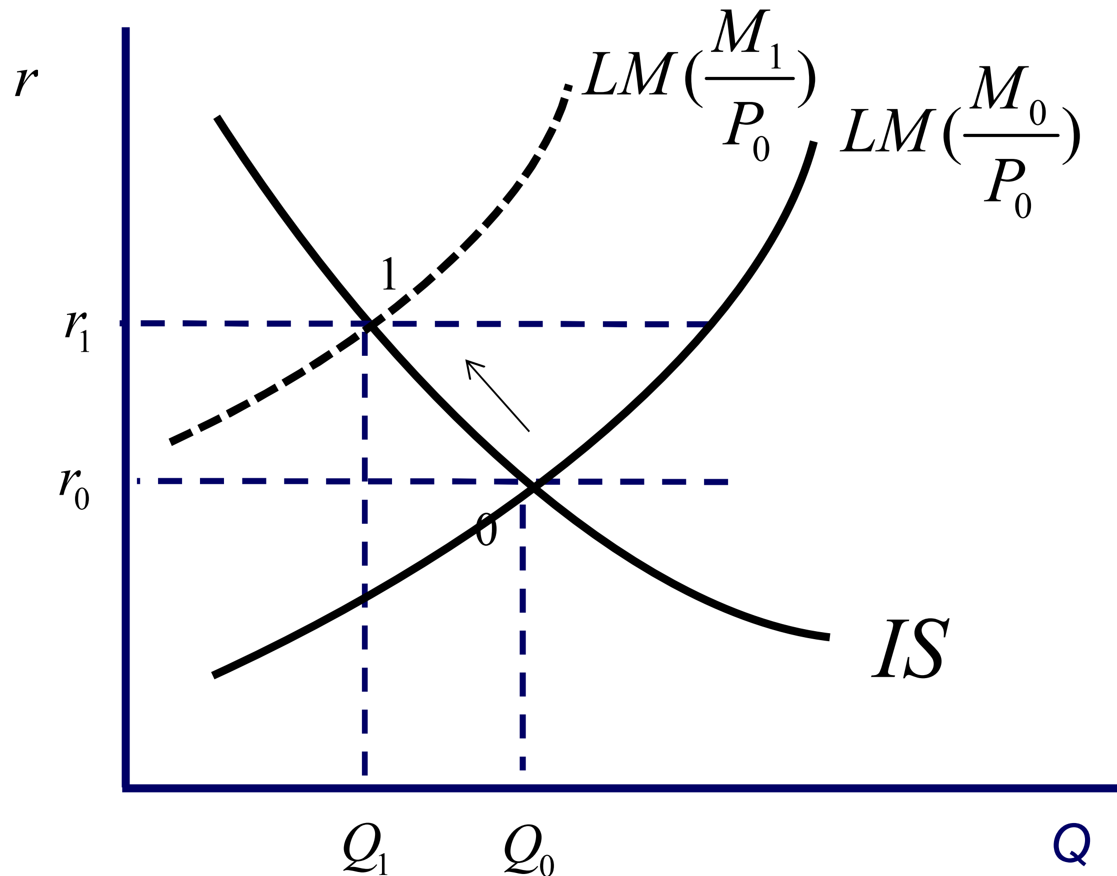
$$\frac{M^S}{P} = m(i, Q)$$

- Aggregate supply

$$Q = zF\left[N^d\left(\bar{W}/P\right)\right]$$

- Assume $i = r$

The IS-LM diagram



- Assume

$$i = r$$

- If the interest rate is determined in the money market, which variable will adjust to clear the market for goods and services?
- Q is endogenous

The Keynes Effect

- Or Transmission Mechanism.

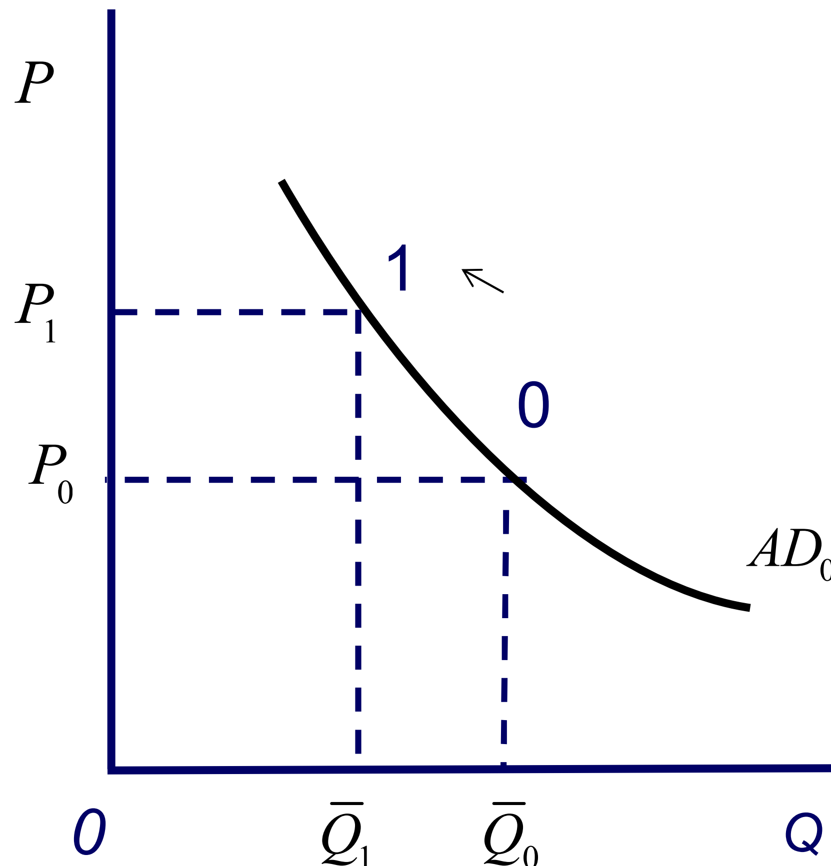
"In normal times the central bank has the power to influence aggregate demand"

- Key ingredients
  1. Wage/Price stickiness
  2. The theory of liquidity preference

- Hence,
  - When money expands, the interest rate declines, boosting consumption and investment (Keynes effect)
  - The aggregate demand is negatively sloped

Aggregate Demand

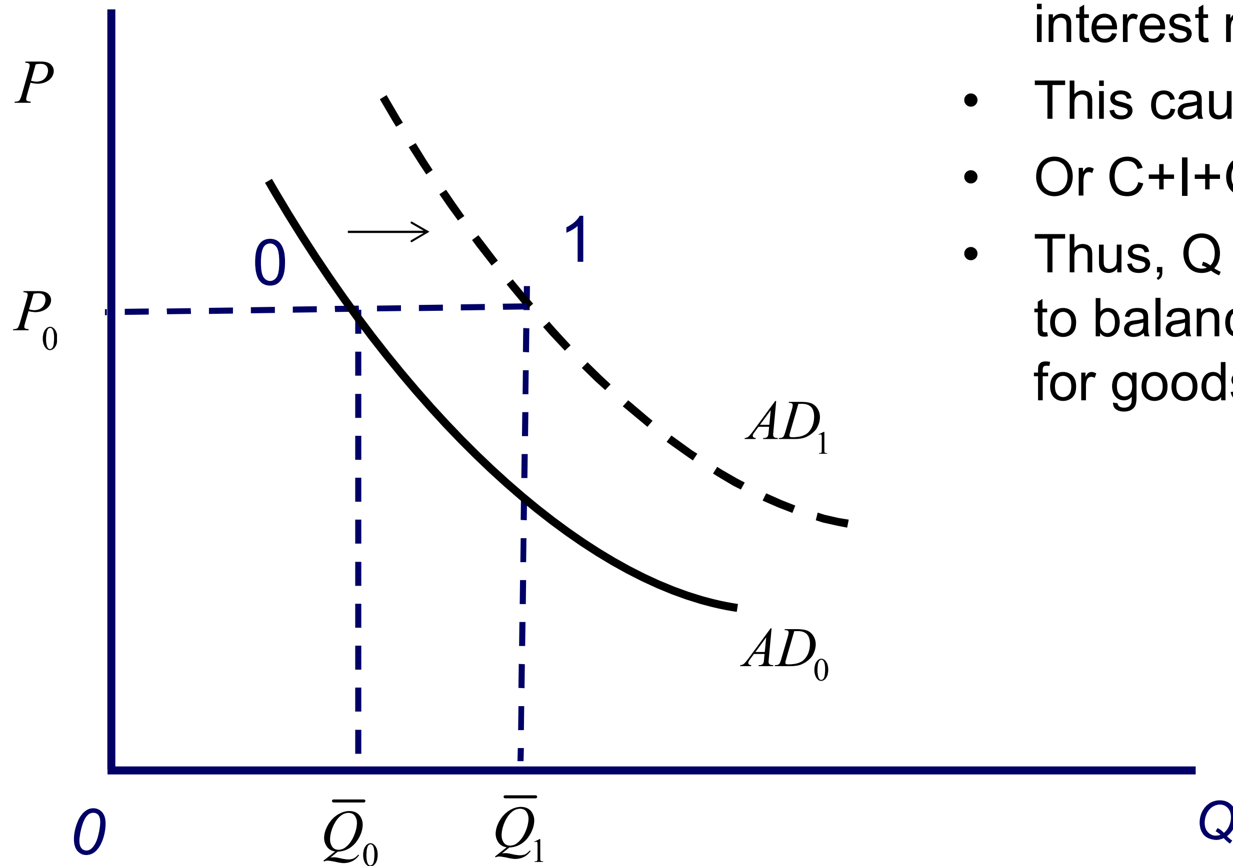
- Slope



- When the P increases, M/P declines
- This causes the interest rate to increase
- This causes S(Q)>I
- Or C+I+G>Q
- Thus, Q must fall to balance the market for goods and services

Aggregate Demand

- Monetary policy Shift



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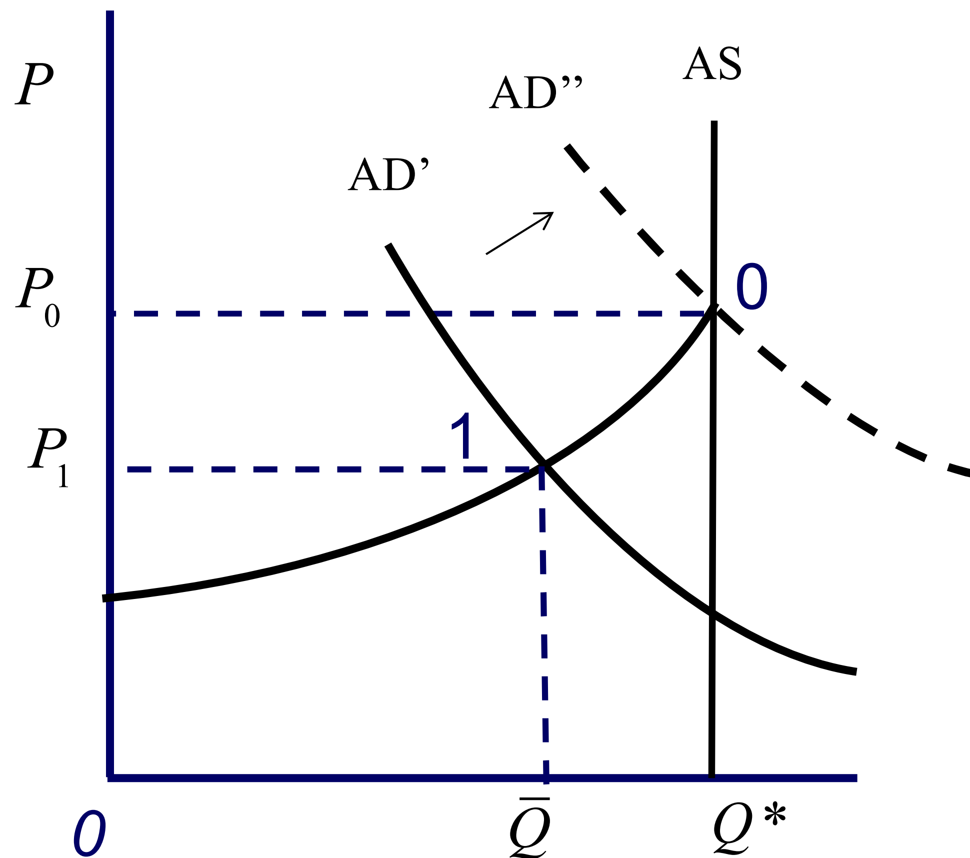
Fiscal policy

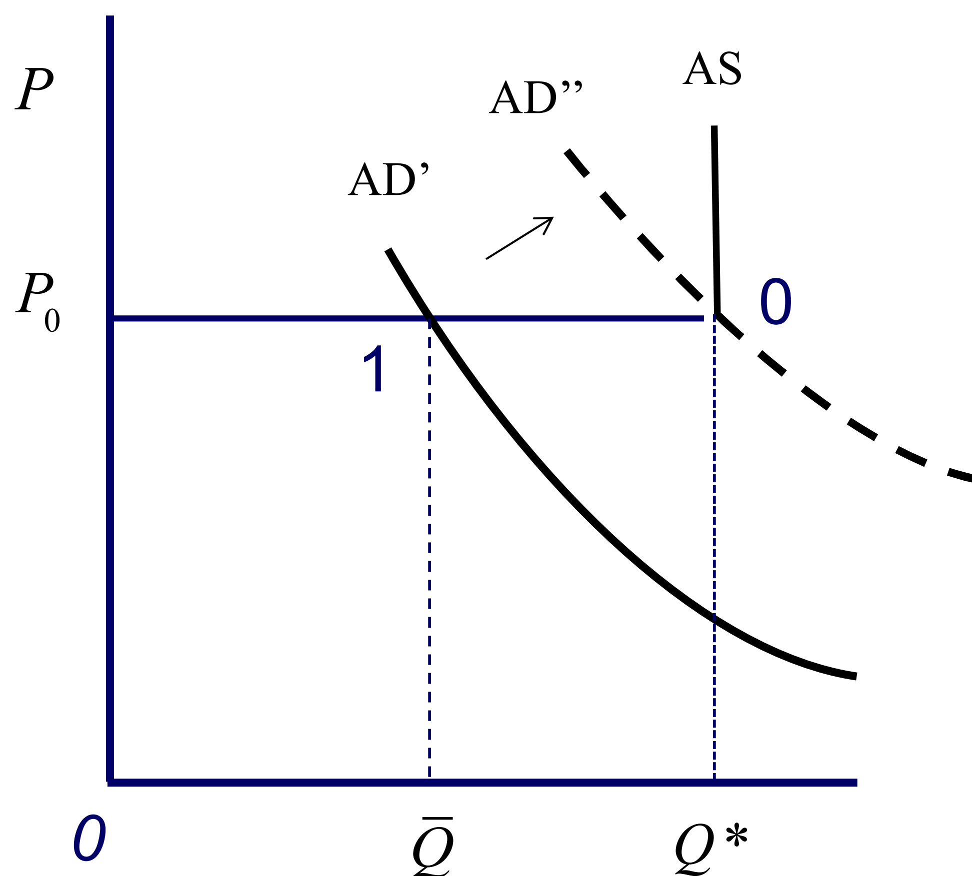


- Changes in expectations ("animal spirits") may tilt the economy do a depression
- The price mechanism will not be fast enough to ensure self correction

If the private sector is not prepared to spend, then the government should do it instead.

Fiscal policy

- Keynesian unemployment



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