

Week 1: Introduction and GDP

Gross domestic product: Measuring the nation's output

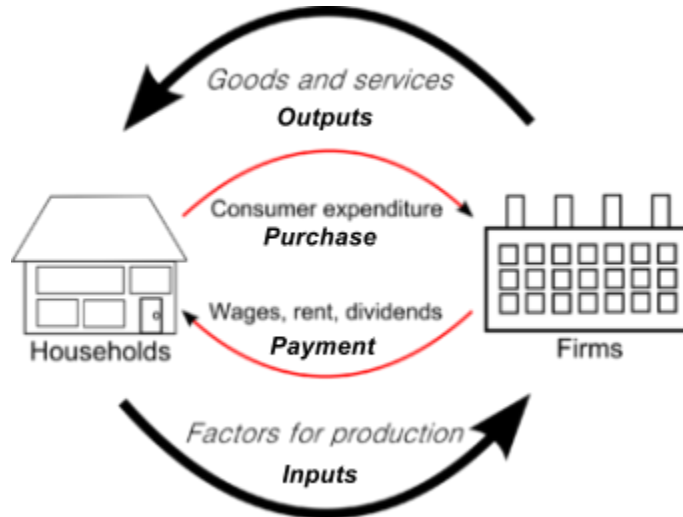
- ❖ **Gross domestic product(GDP):** Total market value of the **final** goods & services produced within a **country** during a given time period
 - Measures a nation's economic welfare
 - Countries with high GDP → High living standards

- ❖ **Market value:** Enables to aggregate all outputs(goods & services) produced in an economy under equivalent term
 - Drawback 1: Exclude non-market & underground economic value
 - Eg. Unpaid homemaker(housewife), activities of underground economy(criminal transactions)
 - Drawback 2: May cause overestimation of GDP growth
 - When there is a shift of economic activities from unpaid sector to the paid sector
 - For G&S consumed by government → GDP is measured by the market value of production cost
 - Eg. Public education → teacher's salaries

- ❖ **Intermediate G&S:** Inputs involved in further production
- ❖ **Final goods or services:** G&S consumed by final users and counted towards GDP
 - Problem: Some intermediates are produced in 1 year, but finalised in the 2nd year
 - *****Value added = Market value of product - cost of products**
 - ** Resold goods and financial assets(eg.shares) are not final G&S
- ❖ **Produced within a country:** Only production within the country borders is counted
 - Ex. Goods produced by foreign firms in Australia is included in AUS's GDP

❖ ***Circular flow of income:** Shows how cash and G&S flow between households and firms

- Shows how income, expenditure and production are equivalent to indicate GDP
 - Households receives labor and capital income for supplying factors of production (provide inputs)
 - Firms receive revenue by selling G&S to households (sell outputs)



****Income method to calc GDP(output):**

$$Y = wL + rK$$

- ❖ **National income = Labor income(workers) + Capital income(owners)**
 - w = wage rate, r = interest rate, L = employment, K = capital stock
- ❖ $1 = wL/y + rK/y$
 - wL/y = **Labor income share**(% of labor income in total income)
 - rK/y = **Capital income share**
- ❖ Raising capital income share & reducing labor income share → Income inequality
 - Rich people selling capitals(Goods) earns higher income, poor people providing labor earn low income

6 Costs of inflation

1. **Menu costs:** Cost of changing price (eg. print new menus for restaurants)
2. **Shoe-leather costs:** Cost of more frequent travelling to bank + Bank need to hire more staff
 - As inflation reduces the purchasing power of money, people tend to put most money in bank to earn interest and lower the impact of reduced purchasing power
3. **Noise in the price system** 混淆视听: Inflation makes it hard for suppliers to judge whether the price change is resulted by increased demand or inflation, and slows down the supplier's responsiveness to price change & reduce economic efficiency
 - Slower the market goes back into equilibrium
4. **Higher payment of tax** → People's nominal wages increases as an adjustment when inflation occurs. But some people's increased wages may enter the next tax payment category and required to pay more tax, losing real purchasing power
5. **Difficulty to plan for future:** Unsure how much money needed for future plan
6. **Unexpected redistribution of wealth:**
 - If expected inflation rate set in contracts < actual inflation rate, real purchasing power of workers is transferred to owners (workers -losers, owners - gainers)
 - Encourages people to use up resources (not sure how wealth is distributed)

Inflation and interest rates

- ❖ **Nominal interest rate:** The % change in the nominal value of a financial asset (market interest rate)
- ❖ **Real interest rate:** The % change of real purchasing power of a financial asset
 - **Fisher equation:** (MEMORISE this, just use the simplified one to think!)

$$1 + r = \frac{\frac{1+i}{P_1}}{\frac{1}{P_0}} = \frac{1+i}{1+\pi} \rightarrow r \approx i - \pi$$

(like next year's purchasing power/this year's purchasing power)

- *** i must be ≥ 0 → otherwise people lose money by investing
- r = real interest rate, i = nominal interest rate, π = inflation rate
- Real interest rate = Nominal rate - inflation rate
- **Realised real interest rate:** Actual return rate on investment

$$r = i - \pi$$

- **Expected real interest rate:** Predicted return rate based on predicted inflation rate
 - Helps making future economic decisions

$$r = i - \pi^e$$

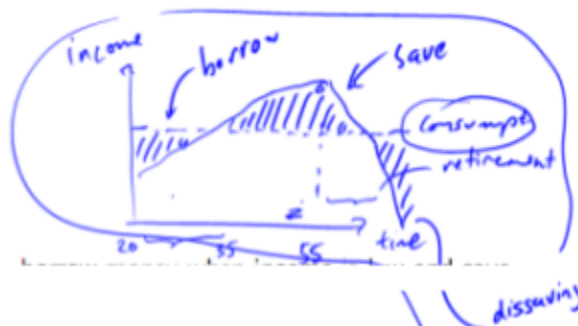
Saving and wealth

- ❖ **Saving:** Income - expenditure
- ❖ **Wealth** = Assets - Liabilities (like equity)
 - Savings is asset → adds to wealth
- ❖ **Flow:** A variable measured per unit of time (monitored over regular interval)
 - Eg. Saving, *GDP(measured quarterly), C, I, G, X, M
- ❖ **Stock:** A variable measured at a point of time
 - Eg. Wealth, capital stock

- ❖ After-tax income can either be used for:
 - Current consumption
 - Savings for future use

3 types of saving:

1. **Lifecycle saving:** Saving to meet long-term objectives



2. **Precautionary saving:** Saving for unexpected events
3. **Bequest^{遗产} saving:** Saving for next generation

4 Factors that affect a country's saving:

1. *Real interest rates 生利息
 - The higher the real interest rates, the higher opportunity cost of not saving, the more people will save
2. *Beliefs about future events 有备无患
 - eg. financial crisis increasing belief & awareness of future crisis
3. *Demographics → Age structure
 - Larger aging population & smaller working-population, the more people earning low income & dissaving, the lower national saving
4. Temptation & self-control
 - The more convenient to borrow & spend, the less you save

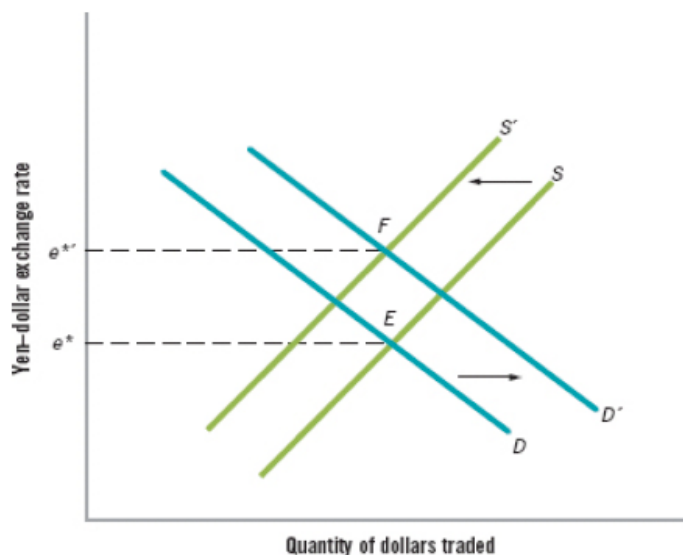
National saving and its components

- ❖ **National saving:** Total saving in the economy by households, firms, and government
 - Households → Income - consumption
 - Firms → Revenue - (wages, costs, dividends)
 - Government → Taxation revenue - expenditure

Week 11: Fixed exchange rate & balance of payments

Monetary policy & flexible exchange rate:

- ❖ If RBA becomes more aggressive & increase \bar{r} & r :
 - ****Increases BOTH foreign AND domestic demand for AUS assets**
 - **Demand for A\$** increases
 - ****Supply of A\$** decreases
 - Increases equilibrium exchange rate → A\$ appreciates



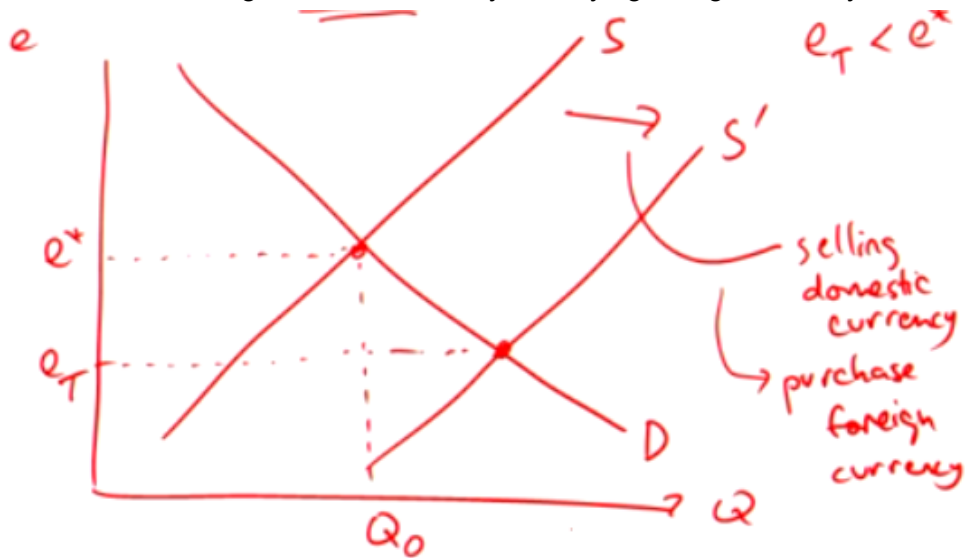
- ❖ As r increases, AD shifts leftwards because:
 1. C & I^P decrease, PAE & y decrease
 2. As e increases:
 - a. Domestic G&S become more expensive for foreigners → Demand of exports decreases
 - b. Foreign G&S become cheaper for domestic residents → Demand of imports increases
 - c. As X decreases & M increases → PAE shift downwards, output y decreases, **AD curve shifts leftwards**. In Short run:
 - Creates contractionary output gap & high unemployment
 - Firms are producing below natural rate, thus decrease prices → Inflation rate decrease
- In open economy, flexible exchange rate makes monetary policy more effective

Fixed exchange rate

- ❖ **Fixed exchange rate:** Exchange rate is fixed by government
 - By fixing value of domestic currency to the value of gold or other major currencies
- ❖ 3 ways to maintain fixed exchange rate:
 1. Intervene in foreign exchange market by buying/selling foreign reserves (fill in excess gap)
 2. Use Monetary policy to change real interest rate & equilibrium exchange rate (shift equilibrium)
 3. Restrict capital flows in trade (control both supply & demand of A\$)

Government maintain fixed interest rate by intervening in Foreign Exchange market

- ❖ **Undervalued exchange rate:** When a currency's fixed exchange rate equilibrium $e_T < e^*$
 - **Foreign currency reserves:** Foreign assets held by government
 - Excess demand:
 - Lower e , cheaper AUS G&S, Demand of A\$ increases
 - If Government wants to maintain fixed exchange rate → Increase supply of A\$ by:
 - Selling domestic currency via buying foreign currency reserves



- ❖ **Overvalued exchange rate:** When a currency's fixed exchange rate $e_T > e^*$
 - Excess supply:
 - At higher exchange rate, foreign G&S becomes cheaper, demand for imports increases → Higher supply of A\$
 - If government wants to maintain fixed exchange rate → Increase demand of A\$ by:
 - Buying domestic currency via selling foreign reserves 没人要提供, 只好政府卖

