Concepts	Description
	Aggregate output, prices and economic growth
Gross Domestic Product (GDP)	Definition: Total market value of goods and services produced in a country within a certain time period. Excluding: sale or resale of goods produced in previous period, transfer payments made by the government (unemployment, retirement, etc.) Expenditure approach: GDP = sum of the amounts spent on goods and services produced during the period GDP = C + I + G + (X-M) Income approach: GDP = sum of the amount earned by households and companies during the period (wage, interest income and business profits)
Nominal GDP / Real GDP / GDP Deflator / Per-capita real GDP	Nominal GDP: Total output value of an economy, valued at current market prices Real GDP: Total output value of an economy using prices from a base year GDP deflator: price index to convert nominal GDP to real GDP $GDP\ deflator = \frac{Nominal\ GDP}{Real\ GDP} \times 100$ Per-capita real GDP = real GDP / population
National income	= Employees wages and benefits + Enterprises PBT + Interest income + Unincorporate net income + rent + indirect business taxes - susidies (taxes and subsidies are included in final prices)
Personal income	Pretax income received by household Determine cunsumer purchasing power and consumption = National income + transfer payment to household (unemployment, retirement) - indirect business taxes - Coporate income taxes - Undistributed corporate profts
Personal disposable income	Personal income after tax Personal disposable income = personal income - personal taxes
Relationship among saving, investment, fiscal balance an trade balance	GDP = C + I + G + (X - M) Total income = C + S + T Since: GDP = Total income C + I + G + (X - M) = C + S + T or I + (G - T) = S + (X - M) In that: C: consumption spending I: Business Investment G: Government spending X: Export M: Import S: Household and business savings T: net taxes (taxes paid - transfer payments received) (G - T): fiscal balance. (G - T) > 0: fiscal deficit (X - M): Trade balance. (X - M) < 0: trade deficit
Factors that determine components of GDP	Consumption: taxes (↓ taxes → ↑ consumption and saving) Investment: Profitability (depend on overall level of economic output) and cost of financing (reflected in real interest rates) Government purchaes: fiscal balance Net export: domestic disposable income (affect import), foreign disposable income (affect export) an relative price of goods in foreign and domestic markets

Monetary transmission mechanism	Definition: how a change in monetary policy affects price level and inflation - ↑ in policy rate → ↑ ST lending rate → ↓ AD (↓ credit purchase of consumers and ↓ investment of firms) - ↑ in policy rate → ↑ discount rate applied to future CF → ↓ Bond prices, equity prices and assets prices → ↓ value of households' assets → ↓ consumption ; ↑ savings - ↑ in policy rate → ↑ ST lending rate → ↓ AD → ↓ expectation for future economic growth → ↓ expenditures of consumers and businesses - ↑ in policy rate → ↑ ST lending rate → ↑ value of domestic currency → ↓ export ; ↑ import→ ↓ AD
Quality of effective central banks	1. Independence: free from political interference. - Operational independence: allow to independently determine the policy rate - Target independence: also defined how inflation is computed, set the target inflation rate, and determines how long the target is to be achieved 2. Credibility: should follow through on their stated intention 3. Transparency: Periodically disclose the state of economic environment by issuing inflation reports
Determine expansionary / contractionary	Neutral interest rate = real trend rate of economic growth + inflation target Where: Real trend rate : An economy's LT sustainable real growth rate Policy rate < Neutral interest rate → expansionary Policy rate > Neutral interest rate → contractionary
Limitations of monetary policy	1. Bond market vigilantes: - ↓ in money supply → ↑ probability of recession → long-term bonds more attractive → ↓ long-term interest rate - ↑ in money supply → ↑ probability of inflation → long-term bonds less attractive → ↑ long-term interest rate 2. Liquidity trap: demand for money becomes very elastic ; individuals willingly hold more money, even without a decrease in ST interest rate → ↑ growth in money supply will not ↓ ST interest rate, since individuals hold in cash rather than interest-bearing securities 3. Banks might not willing to lend, even with increase in excess reserve Other problems in developing countries: - Without a liquid market, information might be distorted; open market operations difficult to implement - Difficult to determine neutral rate of interest - Rapid financial innovation → ↑ demand to hold money - Central banks lack crerdibility - Central banks are not given independence by political authority
Fiscal policy	Definition: Government change in spending and taxation to meet macroeconomic goals Budget is balanced : Tax revenue = government expenditure Budget surplus : Tax revenue > government expenditure Budget deficit : Tax revenue < government expenditure ↓ Taxation / ↑ Government expenditure → ↑ budget deficit (or ↓ budget surplus) → ↑ AD → ↑ economic growth ; ↑ employment (expansionary) ↑ Taxation / ↓ Government expenditure → ↓ budget deficit (or ↑ budget surplus) → ↓ AD ; ↓ economic growth ; ↓ employment (contractionary) Objectives: - Adjust the level of economic activity and AD - Redistribute wealth and income among segments of population - Allocate resources among economic agents and sectors in the economy
Fiscal policy tools	**Spending tools** 1. Transfer payments - e.g.: Social Security ; unemployment benefits 2. Current spending: Gov's purchase of goods and services on an ongoing an routine basis 3. Capital spending: Gov's spending on infrastructure → expect to boost future productivity of economy Justifications of spending tools: - Provide services that benefits all residents - Invest in infrastructure → enhance economic growth - Directly affect AD → support the economic growth and unemployment targets - Provide minimum standard of living - Subsidise investment in R&D for certain high-risk ventures consistent with future economic growth and other goals **Revenue tools** Direct taxes: levied on income or wealth (Income tax, Corporate tax, capital gains tax, etc.) Indirect taxes: levied on goods and services (VAT, etc.) Desirable attributes: - Simplicity to use and enforce - Efficiency: least interference wth market forces - Fairness: People at similar situations → pay similar taxes (horizontal equality) ; Richer people pay more taxes (vertical equality) - Sufficiency: taxes revenue = Gov's spending
Advantages / Disadvantages of fiscal policy	Advantages - Quickly implement social policies via indirect taxes (discourage tobacco use) - Quickly implementation of indirect taxes → ↑ Gov's revenue without significant additional costs Disadvantages - Direct taxes and transfer paymens take time to implement → Delay the impact of fiscal policy - Capital spending takes long time to implement
Fiscal multiplier	$Fiscal\ multiplier\ (spending) = \frac{1}{1 - MPC \times (1 - t)}$ $Fiscal\ multiplier\ (taxation) = MPC\ \times Fiscal\ multiplier\ (spending) = \frac{MPC}{1 - MPC \times (1 - t)}$
Ricardian equivalence	↑ current budget deficit → ↑ taxes in the future Ricardian equivalence: Taxpayers ↓ consumption and ↑ savings to offset the expected cost of higher future taxes → no effect on AD