ECF2331 Final Revision

Table of Contents

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Week 1 Introduction to Macroeconomics

<table>
<tr><th colspan="3">What Macroeconomics is about</th></tr>
<tr><td>Macroeconomics</td><td colspan="2">Is the study of structure and performance of national economies and government policies that affect economic performance</td></tr>
<tr><td rowspan="6">Issues addressed by macroeconomists</td><td>Long run economic growth (two key sources)</td><td>• Population growth
  ○ Overtime, more people are producing more good
• ↑ in average labour productivity
  ○ population grows, people are more productive, or
• population remains the same, everyone more productive</td></tr>
<tr><td>Business cycles</td><td>• Short-run contractions & expansions in economic activity
• Downward phase is called a recession</td></tr>
<tr><td>Unemployment</td><td>• The number of people who are available for work and actively seeking work but cannot find jobs
• Recessions cause ↑ in unemployment rate</td></tr>
<tr><td>Inflation</td><td>• The percentage ↑ in the level of prices
• Hyperinflation: an extremely high rate of inflation
• Deflation: when prices of most goods & services ↓</td></tr>
<tr><td rowspan="2">International economies</td><td>• Open economy is an economy that has extensive trading & financial relationships with other national economies
• Closed economy is an economy that does not interact economically with the rest of the world</td></tr>
<tr><td>Trade imbalances:
• Trade surplus: exports > imports
• Trade deficit: imports > exports</td></tr>
<tr><td>Macroeconomic policy</td><td>• Fiscal policy: concerns government spending & taxation
• Monetary policy: growth of money supply; determined by central bank: The Fed in US, RBA in Aus.</td></tr>
<tr><th colspan="3">What Macroeconomists Do</th></tr>
<tr><td>Macro Research</td><td colspan="2">To make general statements about how the economy works</td></tr>
<tr><td>Develop & Test and Economic Theory (steps)</td><td colspan="2">1. State the research question
2. Make provisional assumptions
3. Work out the implications of the theory
4. Compare with the data
5. Evaluate the results of your comparisons</td></tr>
<tr><th colspan="3">Why Macroeconomists Disagree</th></tr>
<tr><td rowspan="2">Positive vs. Normative Analysis</td><td colspan="2">Positive analysis examines the economic consequences of a policy
• Look at the particular policy, see what effects that policy can potentially have on the economy, on different dimensions, for output, inflation, unemployment, international economies, etc.</td></tr>
<tr><td colspan="2">Normative analysis determines whether a policy should be used
• Judgement based, used when you are making decisions
• Use positive analysis to understand the positive & negative effects, try to maximize positive and minimise negative effects</td></tr>
<tr><td>Classicals vs. Keynesians</td><td colspan="2">The classical approach
• The economy works well on its own
• The ‘invisible hand’: if there are free markets and individuals conduct their economic affairs in their own best interests, the overall economy will work well
• Wages & prices adjust rapidly to get to equilibrium</td></tr>
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	• Results: Government should have only a limited role in the economy
	The Keynesians approach • The Great Depression: Classical theory failed because high unemployment was persistent • Keynes: persistent unemployment occurs because wages and prices adjust slowly, so markets remain out of equilibrium for long periods • Conclusion: Government should intervene to restore full employment
	The evolution of the classical-Keynesian debate • Keynesians dominated from WWII to 1970 • Stagflation (The US suffered from both high unemployment and high inflation in 1970s) weaken economists' and policymakers' confidence in Keynesian, and led to a classical comeback in 1970s • Last 30yrs: excellent research with both approaches
A Unified Approach to Macroeconomics	• Textbook uses a single model to present both classical & Keynesian ideas
	Characteristics of the single economic model: 1. Individuals, firms and the government interact in goods markets, asset markets, and labour markets 2. The model's macroeconomic analysis is based on the analysis of individual behaviour a. The guiding principle is the assumption that they try to maximize their own economic satisfaction, given their needs, desires, opportunities & resources 3. Keynesians and classicals both agree that, in the long run, prices and wages full adjust to achieve equilibrium in the market for goods, assets, and labour 4. The basic model that we present may be used with either the classical assumption that wages and prices are flexible or the Keynesian assumption that wages and prices are slow to adjust
National Income Accounting	
Definition	**National Income Account** is an accounting framework used in measuring current economic activity.
Three Alternative Approaches	1. **Product approach**: the amount of output produced, excluding output used up in intermediate stages of production 2. **Income approach**: the incomes generated by production 3. **Expenditure approach**: the amount of spending by ultimate purchasers
	Are the three approaches equivalent? • They must be, by definition • Any output produced (product approach) is purchased by someone (expenditure approach) and results in income to someone (income approach) • The fundamental identity of national income accounting: $$total\ production = total\ income = total\ expenditure$$
Gross Domestic Product	
The Product Approach to measure GDP	Defines GDP as the market value of final goods & services newly produced within a nation during a fixed period of time • **Value added** = value of output – value of inputs purchased from other producers
	Market value: allows adding together different items by valuing them at their market prices • Problem: misses nonmarket items such as homemaking, the value of environmental quality, and natural resource depletion • There is some adjustment to reflect the underground economy

	• Government services (that aren't sold in markets) are valued at their cost of production
	Newly produced products & services: counts only things produced in the given period, exclude things produced earlier • The value of the services of the real estate agent involved in the sale of the used house is part of GDP, because those services are provided in the current period
	Final Goods & Services: the end products of a process, not intermediate • Don't count intermediate goods & services (those used up in the production of other goods & services in the same period they were produced • Capital goods (goods used to produce other goods) are final goods since they aren't used up in the same period that they are produced (e.g. machines) • Inventory investment (the amount that inventories of unsold finished goods, goods in process, and raw materials have changed during the period) is also treated as a final good • Adding up value added works well, since it automatically excludes intermediate goods
	GNP vs. GDP • **GNP (gross national product)** = the market value of final goods & services newly produced by domestic factors of production during the current period • **GDP** = output produced within a nation (could be produced by foreign owned factors of production, but produced within AUS, counted as GDP but no GNP) $$\boldsymbol{GDP = GNP - NFP}$$ • **NFP (net factor payments from abroad)** = payments to domestically owned factors located abroad – payments to foreign factors located domestically) • Difference between GNP and GDP is small for the US, about 2%, but higher for countries that have many citizens working abroad
The Expenditure Approach	Measures total spending on final goods and services produced within a nation during a specified period of time
	Four main categories of spending $$Y = C + I + G + NX (the\ income - expenditure\ identity)$$ • Y = GDP = total production/output = total income = total expenditure
	Consumption (C): spending by domestic households on final goods & services (including those produced abroad) • Consumer durables e.g. cars, TV sets, furniture, major appliances • Nondurable goods e.g. food, clothing, fuel • Services e.g. education, health care, financial services, transportation
	Investment (I): spending for new capital goods (fixed investment) + inventory • Business (or non-residential) fixed investment: spending by businesses on structures, equipment, and intellectual property products, such as software, research and development, or artistic originals • Residential fixed investment: spending on the construction of houses & apartment buildings • Inventory investment: increases in firms' inventory holdings
	Government purchases (G): spending by the government on goods and services • Not all government expenditures are purchases of goods & services, e.g.: • Payments that are not made in exchange for current goods & services • Transfers, including Social Security payments, welfare, and unemployment benefits • Interest payments on the government debt

	• Some government spending is for capital goods that add to the nation's capital stock, such as highways, airports, bridges, and water & sewer systems
	Net Exports (NX): exports – imports • Exports: goods produced in the country that are purchased by foreigners • Imports: goods produced abroad that are purchased by residents in the country • Imports are subtracted from GD, as they represent goods produced abroad and were included in consumption, investment, and government purchases
The Income Approach	**National income**: the sum of eight types of income • Compensation of employees (income of workers, excluding the self-employed) • Proprietor's income (the income of the non-incorporated self-employed) • Rental income of persons (income earned by individuals who own land/structures that they rent to others) • Corporate profits (profits earned by corporations & represent the remainder of corporate revenue after wages, interest, rents and other costs have been paid) • Net interest (interest earned by individuals from businesses and foreign sources – interest paid by individuals) • Taxes on production & imports (including indirect business taxes, such as sales & excise taxes, that are paid by businesses to Fed, state & local governments) • Business current transfer payments (net): payments made by businesses to individuals or governments or foreigners but not for wages/taxes/as payment for services, including charitable donations, insurance payments etc. • Current surplus of government enterprises (profit of businesses that are owned by Gov., such as water, electric, and sewer companies etc.)
	NNP (net national product) = National income + statistical discrepancy • Statistical discrepancy = the production measure – the income measure
	GNP (gross national product) = net national product + depreciation (the value of capital that wears out in the period)
	GNP = Y + NFP = Private disposable income + Government's net income • **Private disposable income** = private sector income earned at home (Y or GDP) and abroad (NFP) + payments from the government sector (transfers, TR, and interest on government debt, INT) – taxes paid to government (T) $$\text{private disposable income} = GDP + NFP + TR + INT - T$$ • **Government's net income** = taxes (T) – transfers (TR) – interest payments (INT) $$\text{net government income} = \text{T} - \text{TR} - \text{INT}$$
Saving & Wealth	
Measures of aggregate saving	**Private saving** = private disposable income – consumption $$\boldsymbol{S_{pvt} = (Y + NFF - T + TR + INT) - C}$$
	Government saving = net government income – government purchases $$\boldsymbol{S_{govt} = (T - TR - INT) - G}$$
	National saving = private saving + government saving $$\boldsymbol{S = S_{pvt} + S_{govt} = Y + NFP - C - G}$$

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Real GDP, Price Indexes, and Inflation

Real vs. Nominal Variables

- Nominal variables are those in dollar terms
- Problem: Do changes in nominal values reflect changes in prices or quantities?
- If Apple increases its prices, but the production is constant, in nominal terms there is an increase, but in the actual production terms, there is no change
- Real variables: reflect only quantity changes; keep prices fixed at base-year prices

Real vs. Nominal GDP

- **Nominal GDP** is the dollar value of an economy's final output measured at current market prices
- **Real GDP** is an estimate of the real value of an economy's final output, adjusting for changes in the overall price level

Price Indexes

Price index: a measure of the average level of prices for some specified set of goods and services, relative to the prices in a specified base year

GDP deflator is a price index that measures the overall level of prices of goods & services included in GDP

- GDP deflator/100 is the amount by which nominal GDP must be divided, or "deflated", to get real GDP

$$GDP\ Deflator = 100 * \frac{nominal\ GDP}{real\ GDP}$$

Consumer Price Index (CPI): measure the price of consumer goods

- Monthly index of consumer prices; index averages 100 in reference base period (1982 to 1984)
- Based on basket of goods in expenditure base period (updated periodically)

Inflation rate: by how much the price has changed from the previous year

$$\pi_{t-1} = \frac{P_{t-1} - P_t}{P_t} = \frac{\Delta P_{t+1}}{P_t}$$

- Does CPI inflation overstate increases in the cost of living?
  - Price indexes with **fixed sets** of goods do not reflect substitution by consumers when one good becomes relatively cheaper than another
    - This problem is known as substitution bias
    - e.g. choice of expenditure base period matters for GDP when prices and quantities of a good are changing rapidly
  - Very difficult to adjust the price measures for changes in the **quality**
- Consequences of overstating cost of living:
  - If overstated, then real incomes are higher than we thought and we have over indexed payments like Social Security
  - Latest research suggests bias is still 1% per year or higher

Interest Rates

Real vs. Nominal Interest Rates

Interest rate: a rate of return promised by a borrower to a lender

- Real interest rate: rate at which the real value/purchasing power of an asset increases over time
- Nominal interest rate: rate at which the nominal value of an asset increases over time

$$\textbf{\textit{Real interest rate}} = nominal\ interest\ rate - inflation\ rate = i - \pi$$

Expected real interest rate *= nominal interest rate – expected inflation rate or* $\boldsymbol{r = i - \pi^e}$