Lecture 1: Measuring Macroeconomic Performance

Evaluating Macroeconomic Performance

1. **Rising Living Standards:** Tendency for the level of output (quantity and quality of goods and services) to increase over time.
    a. Output divided by population = output per capita
2. **Stable Business Cycle:** low volatility in fluctuations of actual output around its trend or potential output
3. **Relatively Stable Price Level:** low (positive)rate of inflation
    a. Inflation has been concern for most developed countries over the last half century
    b. Japan is an exception and has experienced deflation over the last decade
4. **Sustainable Levels of Public and National Debt**
    a. Public debt-borrowing by public sector from private sector
        i. Influenced by government budget deficits/surpluses
    b. Foreign debt-borrowing by domestic residents from foreign countries
        i. Influenced by an economy's current account deficits/surpluses
5. **Balance Between Current and Future Consumption**
    a. Choice for an individual
        i. How much should I consume today vs tomorrow?
    b. Similar issue for aggregate economy
        i. How much should an economy save/invest?

    Save/invest high => current consumption low, future consumption high and vice versa
6. **Full Employment:** does the economy produce employment for all individuals seeking work?

Standard Desired Outcomes for Macro Variables

- Relatively high and stable growth rate of real per-capita output
- Stable and low (but positive) rate of inflation
- Low unemployment rate
- Sustainable level of public/external debt
- Balance between current and future consumption

GDP: The market value of final goods and services produced in a country during a given period.
->flow variable (measured over a period of time).

Excludes:

- Imports
    - Goods and services that are produced in other countries (but might be consumed in Australia)
- Second-Hand Goods
    - Goods and services that were produced in some earlier period, but are re-sold in the current period
- Intermediate goods and services
    - Goods that are used-up in the production process

3 Ways to Measure GDP

Circular Flow of Income: The economy's national income that can be equivalently measured using the production (value-added), expenditure or income methods.

1. Production (Value Added) Method

Value Added = Sales-Input Costs

- The market value of firm's production less the cost of inputs purchased from other firms

2. Expenditure Method

GDP=Expenditure
Y=C+I+G+NX

Y=C+I+G+X-M

Accounting Identity: Expenditure on goods and services by final users must equal the value of their production.

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Components of Expenditure

- Consumption (C) – purchases by Households
- Investment (I) – purchases by Firms
- Government (G) – Government purchases
- Net Exports (NX) – net purchases by foreign sector

NX = Exports (X) – Imports (M)

National Income Accounting Identity

GDP=Expenditure

$Y = C + I + G + NX$

$Y = C + I + G + X - M$

$Y + M = C + I + G + X$

Supply of G & S = Demand for G & S

3. Income Method

GDP also equals the aggregate incomes paid to

- Labour (L)
  - Wages, salaries and incomes of the self-employed
  - About 75% of GDP
- Capital (K)
  - Payments to owners of *physical capital* (factories, machines, office buildings) and *intangible capital* (copyrights and patents)
  - Profits earned by business owners, rents paid to owners of land or buildings, interest received by bond holders, royalties received by copyright/patent holders

in the production of goods and services

GDP=Labour Income + Capital Income
=L+K

Nominal vs Real GDP

Nominal GDP: values of quantities of goods and services produced at current year prices i.e. prices are subject to change
-> Weights by current prices

Real GDP: values of quantities of goods and services produced at base year prices-measure of the actual physical volume of production
-> Weights by constant set of prices

- Using initial prices = Laspeyres index
- Using final prices = Paasche index

Real Interest Rate: The percentage increase in the real purchasing power of a financial asset.

Nominal Interest Rate: The percentage increase in the dollar value of a financial asset.

Chain Weighting: average of the two growth rates implied by both the Laspeyres and Paasche indexes.

Omissions from GDP that might matter for economic welfare:

GDP is not a perfect measure of economic wellbeing. Real GDP is not the same as economic wellbeing.

- Leisure time (extra week of holidays)
  - Working later in life, less hours vs grandparents i.e. after tertiary education, 40hr vs 80hr weeks
  - Perks of being an industrialised country
- Household production (cook at home)
  - Also volunteer services e.g. firefighters etc.
- Environmental degradation
  - China has experienced extreme growth in GDP, however at the cost of water and air quality
  - Downside of their economic growth
- Quality of life (happiness)
  - Low crime rate
  - Minimal traffic congestion
  - Open space
- Economic inequality (distribution of income)
  - Extreme poverty and extreme wealth vs relatively middle class consistency

Measures of the Price Level

- Want to measure the **average** level of prices in the economy

Consumer Price Index (CPI)

CPI: for a given period, measures the cost in that period of a given basket of goods and services relative to their cost in a fixed year-called a *base year*

CPI=Cost of base-year basket of goods and services in current year/Cost of base-year basket of goods and services in base year

Inflation/Deflation: the percentage change in the CPI over a given period.

$$\text{Inflation rate} = [\frac{CPI - CPI(-1)}{CPI(-1)}] * 100$$

- Inflation rate = 0
  - Prices are constant
- Inflation rate > 0
  - Prices are rising
- Inflation rate < 0
  - Prices are falling i.e. deflation

Limitations with CPI

Quality Adjustment and New Goods Bias

- The bias that causes measured inflation to overstate changes in the cost of living caused by the failure to adjust adequately for improvement in the quality of goods and services
  - Quality improvements may show up as higher prices for goods and services
  - New goods are often not included until CPI is re-based

Substitution Bias

- The bias that causes measured inflation to overstate changes in the cost of living caused by the failure to consider people's substitution towards relatively less expensive goods and services
  - Use of a fixed basket means that no allowance is made for consumers substitution toward relatively less expensive goods

Hence, CPI tends to overstate the rate of inflation

Costs of Inflation

Important to distinguish between *relative* price change and a change in the *general* price level.

- Shoe-leather costs
  - Inflating reduces the real purchasing power of given amount of money
  - Since inflation erodes the real purchasing power of cash to a greater extent the longer it's held
  - Thus people leave as much money in bank accounts where interest is paid on deposits to insulate money's purchasing power from effects of inflation
- Menu costs
  - Real costs of changing prices
  - High inflation rates would mean restaurants would have to reprint their menus according their new prices often, or any firm that lists their prices, hence 'menu' costs
- Introduces noise into the price mechanism
  - Rise in prices causes suppliers to consider whether:
    - Inflation has occurred, meaning there isn't actually a greater demand for their product and thus they don't need to supply more
    - Relative prices have increased meaning demand has indeed increased
  - They must consider the price changes more closely
- Distorts tax systems (if not indexed to inflation)
  - Workers who start earning more and move into a higher tax bracket may start paying more tax despite having no real increase in their real incomes, resulting in less purchasing power
- Interference with long-run planning
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- Unexpected re-distributions of wealth
  - E.g. union workers vs employer, borrowers vs lenders

Inflation and Interest Rates

Nominal Interest Rate: percentage increase in the nominal (or dollar value) of a financial asset.

Real Interest Rate: percentage increase in the real purchasing power of financial asset.

$$r = i - \pi$$

r = real interest rate
I = nominal interest rate
π = inflation rate

Fisher Effect: Nominal interest rate = real rate + (expected) inflation rate

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