Chapter 6 – GDP, Unemployment and Inflation

- **Microeconomics:** study of how households and firms make choices & how they interact in markets.
- **Macroeconomics:** study of the economy as a whole, including topics such as inflation, unemployment, and economic growth.
- Macroeconomics is a study of the National Aggregates (see the Australian Bureau of Statistics (ABS) website, click on 'Key National Indicators')
- In the long run, the Australian economy has experienced 'economic growth' and rising living standards for most.
- But the economy over time is subject to periodic fluctuations, e.g. 7-11 year business cycles.
- Important macroeconomic measures, such as gross domestic product, unemployment and inflation enable economists to evaluate the performance of an economy.

GDP and Economic Growth

- **Economic growth:** expansion of society's productive market potential.
- 'Economic growth' is usually measured by the rate of growth in real GDP per capita.
- **Business cycle:** Alternating periods of economic expansion and contraction: recovery to upswing to boom to peak to downswing to recession
- **Expansion:** period of a business cycle during which total production and total employment are increasing.
- **Contraction:** period of a business cycle during which total production and total employment are decreasing. [Or growing at a very slow rate – rate of growth is contracting]
- **Gross Domestic Product (GDP):** The market value of all final goods and services produced in a country during a given period of time.
- GDP does not include the market value of intermediate goods and services (goods used as inputs, such as a tyre on a truck).
- GDP includes only current production. GDP does not include the value of second-hand goods.

Production and Price Statistics for Economy X			
Product	*Quantity*	*Price per unit ($)*	*Value ($)*
Sunglasses	1000	20	20000
Suntan lotion	500	10	5000
Swimmers	100	80	8000
		TOTAL (or GDP): $33000	

- Australian Bureau of Statistics (ABS) uses three (3) alternative methods to measure GDP:
  - **Production method:** The sum of the value of all goods and services produced by industries in the economy in a year minus the cost of goods and services used in production (i.e. intermediate goods)—leaving the 'value added'.
  - **Expenditure method:** The sum of the total expenditure on goods and services by households, firms, government and net exports (the value of exports minus the expenditure on imports).
  - **Income method:** The sum of the income generated in the production of goods and services, including profits, wages and other employee payments, income from rent and interest earned.

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- The ABS divides GDP into four major categories of expenditures:
- GDP = C + I + G + X – M
- **Consumption (C):** Spending by households
    - Non-durable goods – e.g. food
    - Durable goods – e.g. furniture
    - Services – health, education, leisure
- **Investment (I)** includes 3 categories:
    - Business fixed investment – spending by firms on new factories, office buildings, machinery, computers
    - Inventories – goods produced but not yet sold
    - Residential investment – spending by households on new housing
- **Government purchases (G):** Spending by federal, state, and local governments on goods and services.
    - Can be divided into government current spending (G1) & government I spending (G2)
    - Note: spending on transfer payments is not included in GDP
- **Net exports** ('NX', also known as X – M): value of exports (X) minus expenditure on imports (M).
    - Exports are included because it is domestic production
    - Imports are subtracted because it is foreign production
- It is important to separate a measured rise in GDP that may be due only to price changes from real quantity changes.
- **Nominal GDP:** The market value of final goods and services evaluated at current year prices.
    - can change over time due to changes in price and/or output.
- **Real GDP:** A measure of the volume of final goods and services, holding prices constant. i.e. the market value of final goods and services evaluated at base year prices.
    - shows changes in output only.
- The ABS selects a reference year and uses this over a specified period. Nominal GDP is 'deflated' to remove the effects of inflation. The result is real GDP.
- Calculating nominal GDP

	2014			**2015**		
Product	*Qty*	*Price per unit ($)*	Value	*Qty*	*Price per unit ($)*	Value
Sunglasses	**1000**	**20**	20000	**1500**	**25**	37500
Suntan Lotion	**500**	**10**	5000	**550**	**11**	6050
Swimmers	**100**	**80**	8000	**110**	**80**	8800
Total			33000			52350

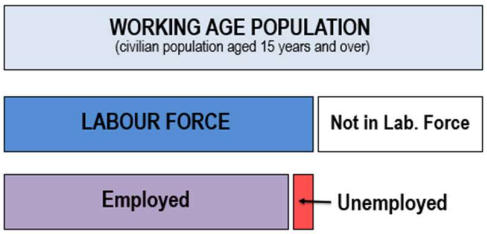
- Calculating real GDP

	2014 (reference year)	2015	
Product	*Price per unit $*	*Quantity*	*Value (PxQ)*
Sunglasses	**20**	**1500**	30000
Suntan Lotion	**10**	**550**	5500
Swimmers	**80**	**110**	8800
		REAL GDP: $44300	

- Calculate real GDP for 2015 by multiplying the prices of each item for 2014 times the quantity of all three goods for 2015, and then summing the three values.
- **Economic growth rate:** the rate of change in real GDP from one year to the next.
- $$\text{Economic Growth} = \frac{\text{Real GDP}_{\text{Current year}} - \text{Real GDP}_{\text{Previous year}}}{\text{Real GDP}_{\text{Previous year}}} \times 100$$
- $$\text{Real GDP growth rate} = (\text{Year}_2 - \text{Year}_1 \,/\, \text{Year}_1) \times 100$$
- An important goal for any economy is to improve living standards over time.
- Real GDP per capita is used to measure changing living standards over time.
- Real GDP per capita = real GDP/population
- An increase in real GDP per capita effectively means that each person on average can consume more goods & services.
- GDP does a good job at measuring total (market) production, although it is not flawless
- GDP is sometimes used as a measure of wellbeing, but it is not a comprehensive measure of wellbeing and it is not intended to be.
- What types of production are left out of GDP?
    - **Household production:** Goods and services people produce for themselves.
        - Examples: home cooking, cleaning, childcare, gardening, home maintenance.
    - **'Black market':** Buying and selling of goods and services that is concealed from the government to avoid taxes or regulations or because the goods and services are illegal.
- Thus GDP underestimates the level of production.
- More importantly, GDP disregards transfers of production between market and household sectors!
- GDP was designed to measure a country's production but it is often used, illegitimately, as a 'proxy' to measure well-being. Is GDP a 'good' measure of well-being?
- We need to be aware of the following shortcomings of GDP:
    - D The distribution of GDP is not captured in GDP measures. (some may be well off and others not)
    - V The value of Non-market production is not included in GDP.
    - L The level, quality of, and access to health care & education is not measured in GDP.
    - N GDP is not adjusted for pollution or other negative effects of production.
    - N GDP is not adjusted for changes in crime and other social problems
- Thus GDP may over estimate well-being

Unemployment

- **Labour force:** is the total number of people who are employed and unemployed.
- **Unemployment:** refers to those people who are willing to work and have made an effort to find work but don't have jobs.
- The participation rate is the proportion of people in the civilian (working) population aged 15 years that are in the labour force.



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- The Australian Bureau of Statistics (ABS) labour force survey:
    - Monthly sample of <0.5% of the population aged 15 and over.
    - To be classified as employed, a person must have worked only 1 hour or more in the week before the survey. (issue of underemployment)
    - To be classified as unemployed, a person must not have worked in the week before the survey, must have been actively looking for work in the past 4 weeks, and must be ready to start work.
- The unemployment rate measures the percentage of the labour force that is unemployed.
- Unemployment rate = unemployed/labour force x100
- The **labour force participation** rate measures the percentage of the working-age population that is in the labour force:
- LF participation rate = labour force/working age population x100
- Problems with measuring the unemployment rate
    - The number of discouraged workers rises during a recession, therefore the official unemployment rate appears lower than it would otherwise be.
    - Underemployed workers – people who work part-time but would like to work more hours. (These mean unemployment is under stated.)
    - People who claim to be unemployed but are not. (This means the unemployment rate is over stated.)

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- Recent trends in labour force participation
- The higher the participation rate, the more labour is available and the higher the level of potential GDP.
- Who has the higher participation rate – males or females? Why?
- 1978—2014: Male participation rate fell from 79% to 71% in Australia.
- 1978—2014: Female participation rate rose from 44% to 59% in Australia.
- Costs of unemployment to the economy as a whole
    - Loss of Gross Domestic Product.
    - Lower rate of economic growth.
    - Re-training costs.
    - Unemployment benefit payments are a net drain on the budget.
    - Loss of tax revenue – personal income tax, company tax, GST and excise taxes.
    - The opportunity cost of funds directed towards unemployment benefits.

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- Costs to the unemployed people
  - Loss of income
  - Lower standard of living
  - Loss of self esteem
  - Unemployment may contribute to family break-ups, health problems, mental illness (e.g. depression), crime and political unrest (e.g. Spain and Greece in 2012-2013).
- Unemployment follows the business cycle:
  - Rises during downswings.
  - Falls during short-cycle upswings.
- When the economy begins to recover, the unemployment rate usually continues to rise for several months or even more than a year because:
  - Discouraged workers re-enter the workforce.
  - Some firms wait until conditions improve before hiring new workers.
- Types of unemployment:
  - **Cyclical unemployment:** Unemployment caused by a business cycle recession.
    - Also known as 'demand deficient' unemployment.
    - Slowing growth rate means some firms have less demand for their products (eg building and construction).
    - contractionary phase of the business cycle: increasing unemployment leads to further contractions of demand for other firms leads to more unemployment.
  - **Frictional unemployment:** Short-term unemployment arising from the process of matching workers with jobs.
    - School leavers, college and university graduates looking for their first job.
    - People re-entering the workforce after an absence.
    - People who have lost or quit their job and are looking for their new job.
    - Seasonal unemployment: due to factors such as weather, tourism
  - **Structural unemployment:** Unemployment arising from a persistent mismatch between the skills and characteristics of workers and the requirements of jobs.
    - New technology and changes in consumer tastes may make some workers redundant.
    - Re-training needed to reduce this type of unemployment.
    - 'Job creation and job destruction'
- **Full-employment:** the absence of involuntary unemployment, a situation where all those wishing to work at the ruling set of real wage rates can find employment.
- **Natural rate of unemployment:** The normal rate of unemployment consisting of structural unemployment plus frictional unemployment. In Australia the unemployment rate would be just below 5% (e.g. say 4.7%).

Inflation

- **Inflation:** is an increase in the general (average) price level of goods and services in the economy.
- It is not an increase in the price of any specific product.
- Inflation is measured by the Consumer Price Index (CPI) which measures changes in the average prices of consumer goods and services.
- **Consumer Price Index (CPI):** A measure of changes in retail prices of a basket of goods and services representative of consumption expenditure by typical Australian households in capital cities.

- The ABS surveys households on their spending habits.
    - The goods and services typically purchased by households is the 'market basket'. There are about 25,000 items in the basket.
    - The prices of goods and services in the market basket are given a weight according to their fraction of a 'typical' family budget.
- The CPI measures the rate of change in the prices of the goods and services in the market basket.
- Annual rate of inflation = year 2 – year 1/ year 1 x 100
- **Causes of inflation:**
    - **Demand-pull inflation** is a rise in the general price level resulting from an excess of total spending (demand) over supply.
        - Prices are 'pulled up' by the pressure from buyers' total expenditures.
        - Demand-pull inflation tends to occur when the economy is operating close to full employment – boom conditions.
    - **Cost-push inflation** is a rise in the general price level resulting from an increase in the cost of production, irrespective of demand conditions.
        - This could be caused by cost increases for labour, raw materials e.g. oil, construction, equipment, borrowing (interest rates) etc.
- Does Inflation Impose Costs on the Economy?
    - M It redistributes income in arbitrary ways
    - D It diverts resources from productive activities to inflation forecasting.
    - R It may increase uncertainty & reduce investment
    - E It decreases international competitiveness
    - D Eliminating inflation can be costly because it brings a period of greater than average unemployment.
- Unanticipated inflation:
    - There are winners and losers, depending on whether inflation is higher or lower than anticipated.
        - Those on fixed incomes, such as aged pensions, will lose if inflation is higher than anticipated.
        - Borrowers on fixed-term contracts may gain and lenders may lose when inflation is higher than anticipated.
- Anticipated Inflation:
    - In general, wages rise with inflation – so if your real wage does not change, are there any costs?
        - So-called 'menu costs' – the costs to firms of changing prices.
        - Tax distortions – 'bracket creep'.
- Does Inflation Impose Costs on the Economy?
    - **Hyperinflation**
        - Extremely rapid increases in the general price level – over 1,000% per year.
            - Hyperinflation is often associated with political instability and usually accompanied by recession.
    - **Deflation**
        - A decline in the general price level in the economy—the inflation rate is negative.
            - Usually associated with a depression.