**ECON1102 – Semester 2**

# Chapter 1: Aggregate Production and Prices

**Gross Domestic Product** (GDP)
- Measure of a country's aggregate output or level of production
- Monetary value of final goods and services produced in a country during a given period

Non-market production activities are excluded, the **focus of GDP is on newly produced goods**, so the value of transactions involving second-hand or used goods is not included

- **Included in GDP**
    - Police services, public hospitals
        - The cost of providing goods and services is used as a measure of their contribution to GDP (Costs of labour and capital inputs)
    - Rental value of owner-occupied dwellings
        - Imputed by ABS using data from census on rents and type or location of dwelling

- Household Production is **excluded from GDP**

The Australian Dollar is used to measure aggregate quantities of different types of goods

In calculating GDP, it is important to ensure that intermediate goods and services are not (double) counted

**Intermediate inputs** are goods and services used-up in the production process, In the production of bread, flour is an intermediate input

Concept of **Value Added:**

- The market value of a firm's production less the cost of inputs purchased from other firms (VA = Value of Sales - Cost of Intermediate inputs)

GDP measures production domestically, **excludes g&s produced in other countries**, but consumed in Australia.
- Imports of goods and services

GDP is a flow variable – measured over a period of time (monthly, quarterly, annual)
**Excludes goods and services produced in an earlier period**, but re-sold in the current period
- Second hand goods are only measured when they were newly made and sold

Measuring GDP approaches:

- **Production Method** (based on the summation of VA)
- **Expenditure Method** (Accounting identity: expenditure on goods and services by final users = value of their production)

    - **Components:**
        - Consumption (C) – purchases by households
        - Investment (I) – purchases by firms/businesses (includes construction and changes in inventory E-B: can be p/n)
        - Government (G) – government purchases
            - Classified into current or consumption spending, capital or investment spending
        - Net Exports (NX = X - M) – net purchases by foreign sector

**Y = C + I + G + X – M** (Cost of production of final goods and services = expenditure)

- **Income Method** (sum of payments to labour and capital + net indirect taxes)

For simplicity, we assume net indirect taxes equal zero (Indirect taxes - Subsidies)

``GDP = (W x L) + (R x K)

L = labour, K = Capital stock, W = Wage, R = Return to capital

Therefore, **GDP = labour income + capital income *+ Net Indirect taxes***

The ABS obtains a single headline figure for quarterly GDP by taking an average of the three measures. Ideally the size of the statistical discrepancy should be as close to zero as possible

NB: GDP includes economic activity undertaken by citizens of other countries

**Gross National Income** (GNI) – based on the country of origin of the factors of production

- GNI equals the income measure of GDP plus any net factor income receivable from non-residents. I.e. GDP with income paid to foreign workers subtracted, income received from foreigners added

**Nominal GDP** could vary due to a change in prices, or in the absence of any change in the volume of production. **Real GDP** abstracts from the effects of aggregate price changes

Real GDP uses final goods and services **prices from a base year** to value the quantities produced in other years

$$\text{GDP Price Index} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \qquad \text{Nominal GDP} = \text{Real GDP} \times \text{GDP Price Index}$$

**Chain weighting** is when a better average growth rate of real GDP between two consecutive years is achieved by averaging the individual growth rates

- Find the average % change of real GDP growth from 2015 and 2016
- Then use this instead of 2015 / 2016 rates

| | 2015 | | | 2016 | | |
|---|---|---|---|---|---|---|
| **Good** | **Quantity** | **Price ($)** | **Value ($)** | **Quantity** | **Price ($)** | **Value ($)** |
| Bikes | 1,000 | 250 | 250,000 | 1,100 | 260 | 286,000 |
| Burgers | 5,000 | 5 | 25,000 | 4,600 | 7 | 32,200 |
| Nominal GDP | | | 275,000 | | | 318,200 |
| Real GDP (at 2015 prices) | | | 275,000 | | | 298,000 |
| Real GDP (at 2016 prices) | | | 295,000 | | | 318,200 |

$$(\frac{318200 - 295000}{295000} \times 100 = 7.86) \quad (\frac{298000 - 275000}{275000}) \times 100 = 8.36 \quad 8.11 = \frac{8.36 + 7.8}{2}$$

Treating 2015 as the base year:

| | 2015 | 2016 |
|---|---|---|
| Nominal GDP | 275,000 | 318,200 |
| Real GDP | 275,000 | **297,302.5 (=275,000×(1.0811))** |

**Table 1.10:** Nominal and Real GDP in 2015 and 2016, in 2015 terms

Treating 2016 as the base year:

| | 2015 | 2016 |
|---|---|---|
| Nominal GDP | 275,000 | 318,200 |
| Real GDP | **294,329.8 (=318,000/(1.0811))** | 318,200 |