

## GDP: Measuring the Nation's Output

**Gross Domestic Product** – market value of final goods and services **produced** in a country during a **given period**

- Measure of a country's aggregate output or production
- Want a sustainable growth rate of GDP, no large fluctuations around the trend
- $\text{GDP} / \text{Population} = \text{GDP per-capita}$

### **GDP Characteristics:**

- Given Period
  - Flow Variable – measure from two given dates
- Produced
  - Excludes goods and services produced in other countries, but consumed in Australia (imports)
  - Excludes goods and services produced in an earlier period but resold in the current period (2<sup>nd</sup> hand goods)
- Market Value
  - Helps measure and aggregate goods and services that are different
  - Goods with no market price are measured using the **cost** of providing these goods and services as their contribution to GDP (national defense, roads)
  - Some are excluded from GDP (household production, unpaid housework)
- Final Goods and Services (consumed by the ultimate user)
  - GDP excludes intermediate goods and services, as they are used up in the production process

### **Measuring GDP:**

#### 1. Production Method

**Value Added (each Firm) = Value of Sales (market value of production) – Cost of Intermediate Inputs (cost of inputs purchased)**

$\Sigma \text{ Value Added (GDP)} = \text{Final Sales}$

#### 2. Expenditure Method

**National Income Accounting Identity** – mathematical relation that shows how GDP is equal to the expenditure on consumption, investment, government purchases and net exports

**Expenditure of Goods and Services by Final Users = Value of their Production**

**GDP = Expenditure**

**Y = C + I + G + NX**

[GDP] = [Purchases by Households] + [Purchases by Firms] + [Government Purchases] + [Exports – Imports]

**Y = C + I + G + X – M**

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

→ Supply of Goods and Services = Demand of Goods and Services

All final goods and services that are produced in a country in a given year will be purchased by one or more of these four groups:

1. **Consumption** – spending by households on goods and services (*ie. food, clothing and equipment*)
2. **Investment** – spending by firms on final goods and services (*ie. capital goods and construction of **NEW** houses*)
  - **DOES** include **inventories** (*goods that are produced but not sold by firms are recognised by economists as being purchased*)
  - *Beginning Inventory – Ending Inventory*
3. **Government Purchases** – purchases by governments of final goods (*ie. teaching in public schools, public demand*)
  - **Does NOT** include **transfer payments** (*payments made by governments in which no current goods or services are received*)
  - **Does NOT** include **Interest Paid** on Government Debt
  - Includes Public Demand
4. **Net Exports** – exports minus imports to find the net amount of spending on domestically produced goods and services
  - Represents the net demand for domestic goods by foreigners

### 3. Income Method

**GDP = Labour Income (L) + Capital Income (K)** (*aggregate incomes in the production of goods and services*)

Labour Income – wages, salaries and the incomes of the self-employed

Capital Income

- Payments to owners of physical capital and intangible capital
- Profits earned by business owners
- Rent paid to owners of buildings or land
- Interest received by bond holders non-financial private firms,
- Royalties received by holders of copyrights or patents

### Nominal GDP vs Real GDP

**Real GDP** – a measure of GDP in which the quantities produced are valued at the prices in a base year rather than current year prices

- Measures of real physical production

- Physical quantities of G&S produced in any year is what determines people's economic well-being, not the dollar values
- Excludes the effect of prices, in other words, adjusts for inflation

**Nominal GDP** – a measure of GDP in which the quantities produced are valued at current-year prices (year of production)

- Measures the current dollar-value of production
- Using initial prices is known as a *Laspeyres* Index
- Using final prices is known as a *Paasche* Index

**Chain-weighted Measure of Real GDP (2 Consecutive Years):**

1. Compute the growth rates of real GDP implied by both the Laspeyres and the Paasche index
2. Average the two growth rates to calculate the chain-weighted growth rate, used to compute a real chain-weighted GDP
3. Above process is repeated on a year-by-year basis to calculate a change index over a long period of time