

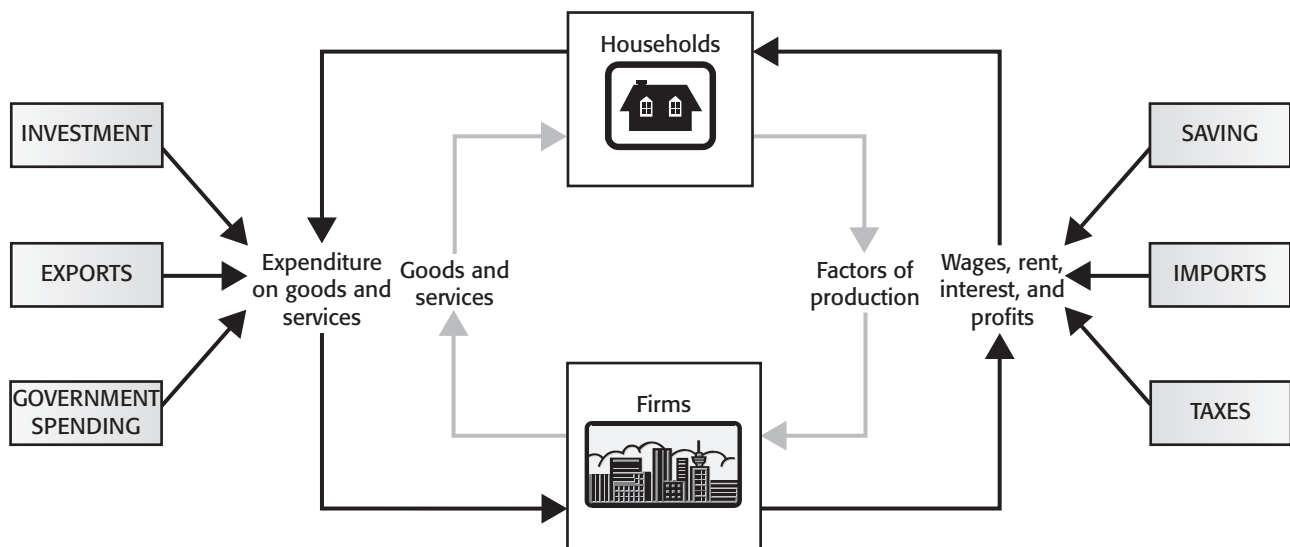
Revision – National income, circular flow, multiplier

The main economic goals

There are usually five economic main aims for government.

1. A steady rate of increase of national output (economic growth)
2. A low level of unemployment
3. A low and stable rate of inflation
4. A favourable balance of payments position
5. An equitable distribution of income.

The circular flow of income model



Households provide the factors of production and receive income. They buy the goods and services produced by the firms which use the income received, and in this way the income circulates throughout the economy.

The **leakages** from the system are savings, taxes and imports. The **injections** are investment, government spending and exports. The economy is in **equilibrium when leakages are equal to injections**.

Measurement of national income

The most commonly used measure of a country's national income is gross domestic product (GDP). There are three different methods that are all used to calculate this figure.

1. **The output method** measures the actual value of the goods and services produced. This is calculated by summing all of the value added by all the firms in an economy. When we say value added, it means that at each stage of a production process, we deduct the costs of inputs, so as not to 'double count' the inputs.

2. **The income method** measures the value of all the incomes earned in the economy.
3. **The expenditure method** measures the value of all spending on goods and services in the economy. This is calculated by summing up the spending by all the different sectors in the economy.

In practice, however, the data that is collected to calculate each of the three values comes from many different and varied sources, and inevitably there will be inaccuracies in the data, leading to imbalances among the final values. Some of these inaccuracies are the result of the timing of the data gathering; often figures have to be revised at later dates when full information is collected.

$$\begin{aligned} \text{National output} &= \text{national income} \\ &= \text{national expenditure} \end{aligned}$$

Gross domestic product (GDP) is the total of all economic activity in a country, regardless of who owns the productive assets.

Gross national product (GNP) is the total income that is earned by a country's factors of production, *regardless of where the assets are located*.

$$\text{GNP} = \text{GDP} + \text{net property income from abroad}$$

Net national product (NNP) is simply gross national product minus depreciation (capital consumption):

$$\text{NNP} = \text{GNP} - \text{depreciation}$$

If we were to compare the GDP of a country from one year to another, we would have to take into account the fact that prices in the economy are likely to have risen. If prices of goods and services rise (inflation), then this will overstate the value of GDP.

$$\text{Real GDP} = \text{nominal GDP adjusted for inflation}$$

GDP per capita is simply the total GDP divided by the size of the population.

Why gather national income statistics?

- People use the statistics to judge whether or not a government has been successful in achieving its macroeconomic objective of increased growth
- Governments use the statistics to develop policies
- Economists use the statistics to develop models of the economy and make forecasts about the future
- Businesses use statistics to make forecasts about future demand
- The performance of an economy over time can be analysed (as long as *real* data is used)
- People often use national income accounts as a basis for evaluating the standard of living or quality of life of a country's population.

National income statistics are often used as a basis for comparing different countries

Limitations of national income data

There are a number of limitations of national income data, both in terms of the accuracy of the data for making comparisons and in terms of their appropriateness in making conclusions about living standards.

- **Inaccuracies** – data that is used to calculate the various measures of national income come from a vastly wide range of sources,

including tax claims by households and firms, output data and sales data. Figures tend to become more accurate after a lag time as they are revised when additional data is included.

- **Unrecorded or under-recorded economic activity – informal markets** – national income accounts can only record economic activity that has been officially recorded. They don't include any do-it-yourself work or other work done at home. This is perhaps most significant for developing countries, where much of the output does not make it to any recorded market.

There is another category of economic activity that goes unrecorded or under-recorded. This may be referred to as the hidden economy. This includes activity that is unrecorded because the work is illegal, such as drug trafficking. It also includes unrecorded activity that is legal, but that people are doing illegally. For example, if foreign workers who do not have the appropriate work permits do work such as cleaning, building or working in restaurants, then their work will go unrecorded. It also includes work that is not recorded because people want to evade paying taxes.

- **External costs** – GDP figures do not take into account the costs of resource depletion.
- **Other quality of life concerns** – GDP may grow because people are working longer hours or taking fewer holidays. While people may earn higher incomes as a result, they might not actually enjoy higher standards of living. GDP accounting does not include free activities such as volunteer work or people caring for the elderly and children at home.
- **Composition of output** – it is possible that a large part of a country's output is in goods that do not benefit consumers, such as defence goods or capital goods.

The multiplier [HL]

If a government decides to fill a deflationary gap by increasing its own spending, the final increase in aggregate demand (AD) will actually be greater than the amount of spending. In fact, any increase in AD will result in a proportionately larger increase in national income. This is explained by the **multiplier effect**. Government spending and business investment are injections into the circular flow of income and any injections are multiplied through the economy as

people receive a share of the income and then spend a part of what they receive.

For example, a government spends \$100 million on a school building project, so \$100m ends up as income in the pockets of people who provide the factors of production for the building project. What do the people do with this income? Some of it goes back to the government as taxes (marginal rate of taxation or $mrt = 20\%$, for example), some of it is saved (marginal propensity to save or $mps = 10\%$, for example), some of it is spent on foreign goods and services (marginal propensity to import or $mpm = 10\%$, for example) and the rest is spent on domestically produced goods and services (marginal propensity to consume or $mpc = 60\%$, for example). This last expenditure goes to another group of people, who pay taxes, save and buy imports and then spend the rest on domestic goods and services.

The value of the multiplier can be calculated by using either the marginal propensity to consume (mpc) or the value of the marginal propensity to withdraw (mpw). The mpw is the value of the

marginal propensity to save (mps) plus the marginal rate of taxation (mrt) plus the marginal propensity to import (mpm).

$$\text{The multiplier} = \frac{1}{1 - mpc}$$

or

$$\frac{1}{mps + mpm - mrt} = \frac{1}{mpw}$$

From the example above, where the $mpc = 0.6$:
the multiplier is: $1/1-0.6 = 1/0.4 = 2.5$

or

**The $mps = 0.1$, $mrt = 0.2$ and the $mpm = 0.1$,
the multiplier is: $1/(0.1 + 0.1 + 0.2) = 1/0.4 = 2.5$**

Any change in any of the withdrawals from the circular flow will obviously result in a change in the economy's multiplier. If the taxation rate increases, for example, then the value of the multiplier will fall. If the marginal propensity to import falls, then there will be an increase in the multiplier.