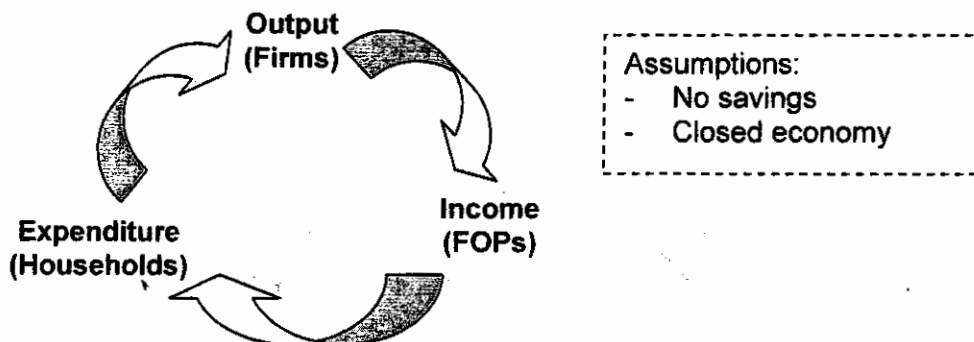


**TICKET TO LEAVE 1 (AUDI)
YEAR 2 H2 ECONOMICS
NATIONAL INCOME ACCOUNTING**

CIRCULAR FLOW OF INCOME

1. How is the circular flow of income related to the calculation of NI?



The above figure illustrates the circular flow of income in a simplified (2 sector) model of the economy.

As can be seen, the value of the output is equal to the incomes which it generates (that is, wages, rent, profit and interest). Given the assumption of no leakage in the form of savings, expenditure will, by definition, equal income.

Hence given that output = income = expenditure, GDP can be measured by the output, income and expenditure methods.

CONCEPTS OF NATIONAL INCOME

2. Relationship between GDP, GNP and other concepts of NI

In order to assess the performance of the country, governments measure the total output produced. An economy is usually considered to be doing well if its output is growing at a high and sustainable rate.

Governments use a variety of measures; these are collectively known as **National Income (NI)** statistics. This is because the total output of the country is equal to total income (and total expenditure), based on the circular flow of income.

The most widely used measure of NI is known as GDP. From GDP, a number of other measures of NI can be found:

GROSS DOMESTIC PRODUCT at market price
- Property income to abroad
+ Property income from abroad
= GROSS NATIONAL PRODUCT at market price
Gross National Product at market price
- Indirect taxes
+ Subsidies
= GROSS NATIONAL PRODUCT at factor cost
Gross National Product at factor cost
- Depreciation
= NET NATIONAL PRODUCT at Factor Cost (NNP_{FC})

In theory, NNP_{FC} is the true measure of a country's NI. However, in practice, GDP is used.

3. **GDP vs GNP – can it be used interchangeably?**

No! As the two concepts measure output differently.

GDP focuses on the value of output produced within the physical boundary of the country itself, regardless of who owns the productive assets.

GNP on the other hand, focuses on the value of output produced by the residents of the country, regardless of where the productive assets are located. That is, GNP gives a measure of the income of the country's residents.

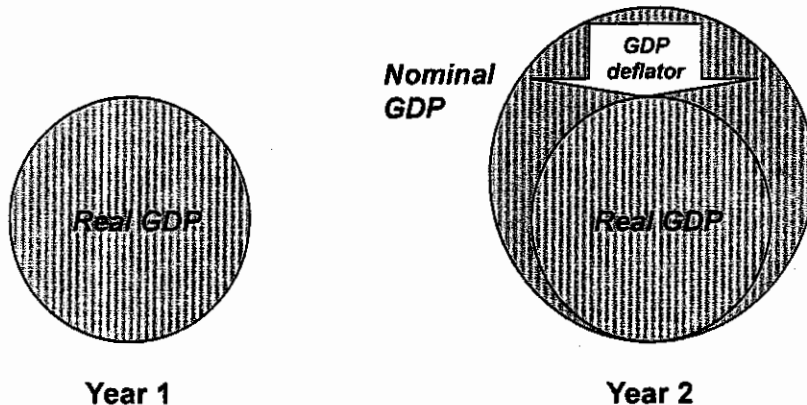
4. **Real vs Nominal GDP? GDP deflator?**

Nominal GDP may give a misleading impression of how well a country is performing. This is because the value of nominal GDP may rise not because of more goods and services are being produced, but merely because prices have risen (see figure below).

Hence in order to get a truer picture of what is happening to amount of output, we need real GDP.

In order to do that, we need to remove any change in prices. The price index used to convert nominal into real GDP is the GDP deflator.

The GDP deflator measures the prices of prices of products produced, rather than consumed in a country. So it includes not only the prices of consumer goods but also that of (i) capital / producer goods; (ii) goods and services produced by the govt (healthcare, education, public goods and etc.) as well as (iii) exports.



5. **Property income vs Factor income**

Factor income [wages, rent, interest & profits] is the total income paid to FOPs in return for their contribution towards output. Factor income can also be seen as costs involved in production.

Property income is a form of returns on the ownership of physical assets as well as financial assets.

6. **How to calculate GDP at market price? factor cost? Difference between the two?**

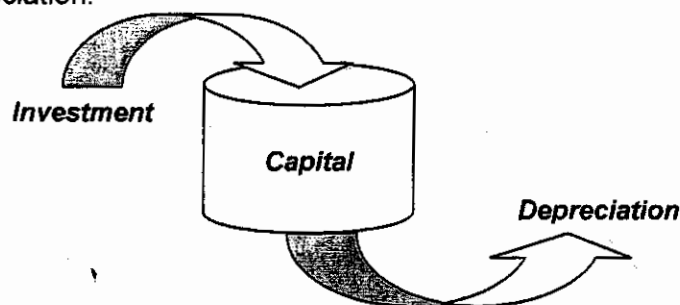
The expenditure method measures GDP as the sum of consumer expenditure (C), Investment (I), government purchases of goods and services (G) and net exports of goods and services (X – M). The total is valued at market price as it is through the retail markets that these goods and services were bought.

The income method measures GDP as the sum of the incomes paid to all FOPs for their contribution to national output. The total is valued at factor cost as the factor income = cost of employing FOPs for production.

Market prices and factor cost would be the same except for indirect taxes and subsidies.

7. Depreciation

Two flows change the stock of capital (that are used to produce other goods and services) – investment and depreciation.



- Investment is the purchase of new capital, which in turn increases the stock of capital.
- Depreciation is the decrease in capital stock due to wear & tear and obsolescence.

When there is net investment (gross investment > depreciation) → capital stock increases. The converse is true.

Gross Product vs Net Product?

GDP includes (gross) investment expenditure, but part of that expenditure made is used to replace whatever capital stock that has worn out. Hence in order to gain a more accurate picture of a country's output, we focus on Net Product (which has already made provisions for depreciation).

NOTE TO STUDENTS!!!

- ✘ Don't be unduly worried about the technicalities of how to calculate, say GDP_{fc} from GDP_{mp} ; NDP from GDP and etc. These are more for MCQ, which is out of the A-level H2 syllabus. A general idea of the distinction will suffice.
- ✘ But what you must know is the difference between real and nominal NI.

COMPARISON OF NI OVER TIME / SPACE

8. Problems / limitations of comparing NI statistics over time & space very confusing

As you read through section 2.7, you will notice that the limitations of GDP per capita figures as an indicator of SOL are generally the same, be it across time or countries:

- Distribution of NI*
- Intangibles – Disamenities & external costs*
- Composition of NI*
- Reliability of data*
- Size of non-monetised sector*

But of course, when discussing these limitations, you must apply appropriately to the context in question.

9. Purchasing Power Parity

This is relevant when comparing NI statistics across countries.

Take US and China as an example: In 2003, real GDP per capita in the US was \$39,000. China's real GDP per capita was 9,500 yuan. If we use market exchange rates to convert China's GDP into US\$, we get a value of \$1,216. This comparison makes China look extremely poor as the GDP per capita in the US was 34 times that in China.

But we must take into consideration that the GDP in the US is measured using the prices that prevail in the US, whereas China's GDP is measured by using prices that prevail in China; and that the relative prices in the 2 countries are very different. Hence to gain a more accurate picture of SOL, we need to use PPP-adjusted exchange rates when converting the GDP of various countries into a common currency.

Extra Info:

The Economist's Big Mac index is based on the theory of purchasing-power parity, under which exchange rates should adjust to equalise the cost of a basket of goods and services (Big Mac), wherever it is bought around the world.

Country	Big Mac Price		Actual Exchange Rate 1 USD =	Purchasing Power Price
	in Local Currency	in US dollars		
United States	\$3.10	3.10	1.00	-
China	Yuan 10.50	1.3449	7.8073	3.39

Market exchange rate: US\$1 = Yuan 7.8073

PPP-adjusted exchange rate: US\$3.10 = 1 Big Mac = Yuan 10.50

US\$1 = Yuan 3.39

2003			
Country	Real GDP per capita	Market exchange rate	PPP-adjusted exchange rate
United States	\$39,000	US\$39,000	US\$39,000
China	Yuan 9,500	US\$1,216	US\$2,802.36

OTHER INDICATORS – NEW & PQLI

10. Is NEW the same as PQLI?

Net Economic Welfare (NEW) seeks to give a fuller picture about SOL by adjusting GDP figures to take into account other factors that have an impact on the quality of people's lives. Factors which improve SOL (such as leisure & housewives' services) are added to GDP; and factors which reduce SOL (such as pollution and rising crime) are subtracted from GDP.

Of course, in practice, it is difficult and administratively expensive to quantify the value of these factors, good and bad.

Physical Quality of Life Index (PQLI) however is an average of 3 statistics – (i) life expectancy at age one; (ii) infant mortality rate and (iii) literacy rate. Developed by Morris David Morris, these 3 statistics are central to the basic well-being of any country.

Extra Info: (www.brown.edu)

Morris has PQLI data spanning three decades. One major finding in his initial study is the lack of congruence between GDP per capita and the PQLI. Industrialised countries tended to rank high in the index, but other countries with high incomes, especially the very richest Mideast oil producers, had PQLIs in the low 30s. Some very poor countries like Sri Lanka (PQLI of 82) and the Indian state of Kerala (PQLI of 68) performed well despite very low monetary incomes.

FACTORS INFLUENCING THE SIZE AND GROWTH OF NATIONAL INCOME

11. External factors influencing NI (To be dealt later in the topic "International Trade")

- **Trade**

The case for free trade is based on each nation specialising according to its area of comparative advantage and trades with other nations, each nation is able to consume beyond its own PPC.

Specialisation and trade among nations provide opportunities for technology transfer, which in turn can bring about more rapid economic growth.

Furthermore, in a growing world economy, the demand for a country's exports is likely to grow, especially when these exports have a high income elasticity of demand. This provides a stimulus to growth in the exporting country.

- **Investment income**

Investment income comes from the earnings of assets owned overseas. For example a British company might have a production plant in another country. The profits made from that plant might be brought back into the UK and this is treated as an inflow on the investment income account (and given a plus sign on the balance of payments).

Overseas firms located here in the United Kingdom, or investors who have put money into UK bank accounts, stocks and bonds - may repatriate their money back overseas. The interest, profits and dividends from foreign assets held in the UK are an outflow of money in the balance of payments accounts.

The **net investment balance** is the balance of inflows of interest, profits and dividends set against outflows. With a net inflow of income, these could be used to purchase more goods and services (imports); thus allowing the nation to consume beyond its own PPC.

- **Terms of Trade (TOT)**

TOT measures the rate of exchange of one good or service for another when two countries trade with each other. It depends on the relative export and import prices, as shown in the formula below:

$$\text{TOT index} = \frac{\text{Export Price Index}}{\text{Import Price Index}} \times 100$$

Simply put, an improvement in a nation's TOT means that it can obtain more imports per unit of export. An improvement in TOT could be due to an increase in export prices (*ceteris paribus*). If foreign demand for our exports is **price-inelastic**, then aggregate expenditure [= C + I + G + (X - M)] for domestic goods will increase. As a result, national output will increase.

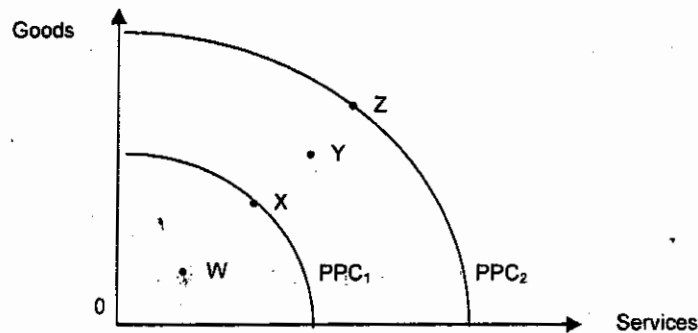
12. Potential growth vs Actual growth

Actual growth is the percentage annual increase in national output. When statistics on growth rates are published, it is actual growth that they are referring to.

Potential growth on the other hand is the percentage annual increase in the economy's capacity to produce. Two major factors contributing to potential economic growth is:

- Any increase in resources
- An increase in the efficiency with which these resources are used.

The production possibility curve (PPC) can be used to explain the distinction between actual and potential growth. Recall that the PPC shows all the possible combinations of two goods that can be produced at any one time. The PPC boundary itself shows potential output; hence potential growth is illustrated by a shift outwards of the curve. Actual growth is represented by a movement outwards of the production point (eg. from point W to point X to Y and Z).



In the short run, actual growth can arise from a fuller use of resources (eg. a movement from point W to X). This would involve taking up slack in the economy: reducing unemployment and using machineries more fully. For actual growth to be sustained over a number of years, there would also have to be an increase in potential output (that is, from point X to point Z). In order to do that, we need to shift the PPC outwards.