

National Income

When you finish college and start looking for a job, your experience will, to a large extent, be shaped by the prevailing economic conditions that exist at the time. If the economy is doing well, companies tend to be increasing the amount of goods and services that they produce and, in order to do that, they tend to be hiring more workers. If the economy is doing poorly, firms tend to be reducing the amount of goods and services that they produce and may be firing workers.

In each of these scenarios, it is not just one or two firms that we are talking about but the economy as a whole. Every firm and household, every producer and consumer makes up the economy. The study of the economy as a whole is known as Macroeconomics

Macroeconomics: Macroeconomics is the study of the economy as a whole.

When the economy is doing well, more goods and services are produced and on average people are richer. When the economy is doing poorly, less goods and services are produced and on average people are poorer. Economists have become especially interested in the Output of a nation. When we say output we mean the total value of all goods and services produced. Economists call the total amount of output produced in an economy in a year National Income.

National Income (Y): The income accruing to the permanent residents of a country from current economic activity during a specified period of time, usually a year

Notice that I said we call the total amount of Output, National Income. It is fundamentally important to realise that output, the quantity and quality of goods and services produced by society, defines the current wealth of a nation. The more output a society produces, the richer its residents are, but more about that later.

As we work through this note, there are a number of rules that you should really keep in mind when studying macroeconomics. These rules should be kept in mind at all times when thinking about the economy as a whole. Right now, the very first thing we are going to do is to learn how to measure National Income.

Measuring the Wealth of a Nation

We already have a definition of National Income from the previous page, but how do we measure how much national income is. Essentially, it is the total amount of money earned from everyone in the country over the past year added together. If this goes up from year to year the country is getting richer. Essentially, it is the same for a person who is getting an increase in pay every year. The question that should be asked is, "How does anyone earn money". The simple answer to this question is always, "By producing goods and services that people want to buy". The more goods an individual produces, the more goods he can sell and as such, the more money he can make. The exact same is true for an economy. The more everyone in an economy produces, the richer that country, and on average everyone in it, is. This brings us to our first and maybe the most important rule in economics

Macroeconomics Rule 1

The wealth of a nation depends only on the quantity and quality of goods and services it produces. The more goods and services that a country produces, the richer that country is.

Like Robinson Crusoe, the sailor stranded on the island, a country can only consume, or use, or enjoy, what it produces. The more goods and services that a country produces, the more goods and services that can be shared among the people of that country.

Once we accept this fact, we might ask ourself a question, how do we measure National Income? Should we just count the number of things that are produced? So if we produce 5 sandwiches and 3 houses we have a National income of $(5 + 3) = 8$? That does not sound very good. If we used this way of measuring national income that would mean that we would consider a country that produced 5 sandwiches and 3 houses (National Income of 8) richer than a country that produced 5 houses and 2 sandwiches (National Income of $5 + 2 = 7$)? That can't be right!! Surely houses are worth way more than sandwiches?

We need a way to measure the value of each good. Luckily enough the market has solved this problem for us in the form of price. The price that

a good is bought and sold for (they are the same by the way), is how much the market values the good. The value of something is the price you would pay to have it. In order to have something you must pay the price of the good. Therefore, the way economists measure the value of something is using the price that it sells for.

Now we are getting closer to a way of measuring the value of what is produced in an economy. we could multiply the quantity of a good that is produced by its price.

Example

In a very simple economy there is only one good produced, Ireland Rugby Jersey's. In 2013, there were 10 Ireland jerseys produced and they each sold for €80. Calculate the VALUE of National Income.

National Income	
Quantity Produced	Price (Value)
10	80

Answer

The value of the Total Output is Price X Quantity

$$\text{National Income} = 80 \times 10 = \text{€}800$$

This number is the total value of all goods and service produced in 2013 measured at their market price. This number means 3 things

- 1) The value of output produced in 2013 was €800.
- 2) The amount of money that was spent in 2013 was €800.
- 3) The amount of income earned in 2013 was €800.

That's true for a overly simplistic economy where there is only one good produced. But what do we do if we have an economy that produces more than one good. We need a way to calculate the euro value of all final goods produced in an economy in one year. Essentially, that's what National Income is, a single figure, expressed in euros, that measures the value of what is produced in an economy in one year.

We will now look at another example. An economy that produces two goods. Rugby Jerseys and Rugby Shorts.

Example

In a very simple economy there are only two goods produced, Ireland Rugby Jersey's and Ireland Rugby Shorts. In 2013, there were 15 Ireland jerseys produced and they each sold for €100. Also in 2013, there were 20 shorts produced and each of them sold for €50. Calculate the **VALUE** of National Income.

National Income			
Quantity of Jerseys Produced	Price (Value) of Jerseys	Quantity of Shorts Produced	Price (Value) of Shorts
15	€100	20	€50

Answer

We need a way to calculate (a single figure) value of all the output produced in this economy in 2013. The formula that we will use, and that all economists use to calculate National Income, is as follows.

$$P_1 \times Q_1 + P_2 \times Q_2 + \dots + P_n \times Q_n = \text{National Income}$$

In order to calculate National Income (the value of the final goods and services produced in an economy in one year) we multiply the value of each good (its price) by the quantity of that good produced. We do this for every good produced in the economy and then add them together. This single figure that we get at the end is called National Income.

So in this question we will use the formula

$$P_{\text{JERSEYS}} \times Q_{\text{JERSEYS}} + P_{\text{SHORTS}} \times Q_{\text{SHORTS}} = \text{National Income}$$

$$(15 \times €100) + (20 \times €50) = \text{National Income}$$

$$€1,500 + €1,000 = \text{National Income}$$

$$€2,500 = \text{National Income}$$

This number (2,500) is the total value of all final goods and service produced in 2013 measured at their market price.

Again this number means 3 things

- 1) The value of output produced in 2013 was €2,500.
- 2) The amount of money that was spent in 2013 was €2,500.
- 3) The amount of income earned in 2013 was €2,500.

Going back to Macroeconomics Rule 1. The wealth of a nation depends only on the quantity and quality of goods and services it produces. The more goods and services that a country produces, the richer that country is. Therefore if the total quantity of goods and services produced increases, National Income would increase, we would get a larger answer to our calculations and we would have a higher standard of living as the quantity of goods and services produced has increased.

However, there is another reason that National Income could rise that would not represent an increase in our standard of living (that would not be caused by an increase in the quality or quantity of goods and services produced). What if prices rise?

If prices rise this would cause the answer to our calculations of National Income to increase, even if the quantity produced did not increase. If the prices of everything doubled but the quantity produced in an economy remained the same, we would not be better off, we would just be paying twice as much for the same amount of stuff.

A rise in prices does cause National Income to increase and, as was already stated, does not represent an increase in our standard of living.

In order to come up with a way of trying to accurately measure the real change in standard of living caused only by an increase in National Output, economists use what is called Real GDP or Real National Income.

This is what we turn our attention to in a second, but before we do we will look at our second rule of Macroeconomics.

Macroeconomics Rule 2

Prices Rise when the government prints too much money

When there is a general rise in prices in an economy we call this inflation. Inflation only ever occurs when too much money is printed. We will return to this concept later in the course but, for now, just keep it in mind

Real V's Nominal National Income (Current and Constant Prices)

We are now going to have a look at Real and Nominal GDP (National Income). This section, like the previous one, is only here to help explain the importance of production of goods and services as the real indicator of wealth in the economy. You do not need to know this off by heart and do not waste your time trying to learn this off by heart. Once you **UNDERSTAND** the message of what is contained in this passage, I would advise not to read it again but go straight to the very short summary of this that follows on page 9.

As we have seen, GDP (National Income) measures the total amount of goods and services produced in all markets in the economy. If National Income rises from one year to the next, at least one of two things must be true.

- 1) The economy is producing a larger output of goods and services, or
- 2) Goods and services are being sold at higher prices.

When studying changes in National Income over time, economists want to separate these two effects. In particular, economists want a measure of the total quantity of goods and services the economy is producing that is not effected by changes in the prices of those goods and services.

In order to do this, economists use a measure called **Real GDP**. Real GDP tells you the value of goods and services produced this year, if prices were stuck at what they were in some year in the past. E.g. Calculating GDP for 2014 at prices from 2013. By evaluating current production using prices that are fixed at past levels, **Real GDP shows how the economy's overall production of goods and services change over time.** We will now look at a numerical example.

Prices and Quantities				
Year	Price of Hot Dogs	Quantity of Hot Dogs	Price of Hamburgers	Quantity of Hamburgers
2008	€1	100	€2	50
2009	€2	150	€3	100
2010	€3	200	€4	150

The table above shows made up data for an imaginary economy that produces two goods only, hot dogs and hamburgers.

To compute the value of total output in this economy (National Income), we

- 1) Multiply the quantity of hot dogs by the price of hot dogs
- 2) Multiply the quantity of hamburgers by the price of hamburgers
- 3) Add them together

See table below

Calculating Nominal GDP (Current Prices)		
Year	Calculations	GDP
2008	(€1 per hot dog X 100 hot dogs)+(€2 per Hamburger X 50 Hamburgers)	€200
2009	(€2 per hot dog X 150 hot dogs)+(€3 per Hamburger X 100 Hamburgers)	€600
2010	(€3 per hot dog X 200 hot dogs)+(€4 per Hamburger X 150 Hamburgers)	€1,200

In 2008, 100 hot dogs are sold (produced) at a price of €1 per hot dog, so the value of hot dogs produced was €100. In the same year, 50 hamburgers were sold for €2 per hamburger, so the value of hamburgers produced also equals €100. The value of total Production in the economy (National Income), is €200. This is the sum of the value of production of hot dogs and hamburgers during the year. This €200, the production of all goods and services valued at current market prices, is called Nominal GDP.

The table above also shows the calculation of Nominal GDP (National Income measured at current market prices) for the three years. The value of Total Production rises from €200 in 2008 to €600 in 2009 and then to €1,200 in 2010. Part of this rise is attributable to the increase in hot dogs and hamburgers produced and part of it is attributable to the increase in the prices of hot dogs and hamburgers.

To get a measure of the amount of goods and services produced in an economy that is not affected by changes in price, we use **Real GDP**.

Real GDP measures the production of goods and services valued at constant prices.

We calculate Real GDP by first choosing one year as a base year. We then use the prices of hot dogs and hamburgers in the base year to compute the value of goods and services produced in all of the years. We say that the prices in the base year provide the basis for comparing quantities produced in different years.

Suppose we choose 2008 as the base year. We then use the prices of hot dogs and hamburgers in 2008 to compute the value of goods and services produced in 2009 and in 2010. See table below

Calculating Real GDP (Constant Prices)		
Year	Calculations (Base Year is 2008)	GDP
2008	(€1 per hot dog X 100 hot dogs)+(€2 per Hamburger X 50 Hamburgers)	€200
2009	(€1 per hot dog X 150 hot dogs)+(€2 per Hamburger X 100 Hamburgers)	€350
2010	(€1 per hot dog X 200 hot dogs)+(€2 per Hamburger X 150 Hamburgers)	€500

To compute Real GDP in 2008, we use the prices of hot dogs and hamburgers in 2008 (the base year) and the quantities of hot dogs and hamburgers produced in 2008. Thus, for the base year, Real GDP always equals Nominal GDP. To compute Real GDP in 2009, we use the prices of hot dogs and hamburgers in 2008 (the base year) and the quantities of hot dogs and hamburgers produced in 2009. Similarly, to compute Real GDP for 2010, we use the we use the prices of hot dogs and hamburgers in 2008 (the base year) and the quantities of hot dogs and hamburgers produced in 2010.

Looking at our example, we find that Real GDP has risen from €200 in 2008, to €350 in 2009, to €500 in 2010. As we are using Real GDP we know that this rise in National Income is solely attributable to an increase in the quantities of goods and services produced only. We know that none of this increase in National Income is attributable to an increase in Price in any way because we have held prices fixed at base year levels.

To sum up, Nominal GDP (National Income measured at current Prices) uses current prices to place a value on the economy's production of goods and services. Real GDP (National Income measured at some prices in the past) uses constant base year prices to place a value of the economy's production of goods and services.

As Real GDP (Real National Income) is not affected by changes in prices, changes in Real GDP reflect only changes in the amounts being produced. Therefore, Real GDP is a measure of the economy's production of goods and services and as such is a more accurate measure of wealth in the economy than Nominal GDP.

National Income (GDP) Current and Constant Prices

Economic Growth occurs when there is an increase in the quantity of goods produced. Inflation is the increase in general prices over time, usually measured over a year. When comparing national income statistics between years, if inflation is not taken into account, this will over value economic growth within a country.

Look at the example below

Year 1

Number of Goods Produced: 10,000
Average Price: €5
GDP: €50,000

Year 2

Number of Goods Produced: 12,000
Average Price: €5
GDP: €60,000

Economic growth has occurred as the quantity of goods produced has increased.

Year 1

Number of Goods Produced: 10,000
Average Price: €5
GDP: €50,000

Year 2

Number of Goods Produced: 10,000
Average Price: €6
GDP: €60,000

No economic growth has occurred. Inflation has caused GDP to increase.

We will look at the exact process that causes inflation in a later handout, but for the moment, just realise that the reason inflation occurred was due to an increase in the money supply. That means that there was an increase in the amount of money in the economy.

Uses of National Income Statistics (Learn This)

- 1) **Indication of Alterations in our Standard of Living:** Any change in our national income figures will indicate the level of economic growth, or otherwise, within the country from one year to the next, and give a general indication of changes to the standard of living, if any. Used by trade unions to justify wage demands.
- 2) **Means of Comparing the Standard of Living in Different Countries:**
We can use the national income statistics to compare the standard of living in our country with that of other countries.
- 3) **Assists the government in Formulating Economic Policy:**
Governments have a greater influence on the development and growth of the economy. To effectively plan for this governments' need information about our economy such as that provided by the National Income statistics.
- 4) **Evaluate Economic Policy:** To assess changes to the economy and economic changes in the various sectors, and to provide a benchmark against which progress can be monitored, it is useful to have national statistics.
- 5) **EU Budget Contributions or Benefits:** The wealth revealed in our national income statistics will determine the contribution, if any, which Ireland must make to the EU budget. The figure will also be used within the EU to determine those countries which require financial aid from the EU and the amount of that aid.

So we have established that National Income statistics have some uses, so far the uses of National Income are the only things you have to learn off in this note. We have also seen that National Income Statistics have problems or inaccuracies in their ability to measure the value of how much goods and services have been produced in an economy in a year.

We will now look at some of the problems with National Income Statistics. You need to learn **FIVE** of these.

Limitations of National Income Statistics (Learn Five)

- 1) **Population Changes:** If national income grows at a slower rate than population, then national income per head decreases and the average standard of living will fall. Hence population changes must be considered with changes in national income when assessing a country's economic performance.
- 2) **Inflation/Deflation:** An increase in prices will increase national income but standard of living may fall. So, changes in national income must be compared with changes in prices to determine the impact on standard of living / economic performance.
- 3) **Employment / Unemployment:** If a person is unemployed rising national income will not necessarily mean that this person's average standard of living is rising.
- 4) **Levels of Taxation:** When considering a person's standard of living one should take into account rates of income tax and levels of indirect tax within the country. An increase in either of these may result in a drop in a person's standard of living.
- 5) **Levels of Social Welfare:** For a person who is unemployed the rates of social welfare payable is of more relevance than the average standard of living in the country.
- 6) **Measures Flow of Wealth not Welfare:** Rising GNP may be accompanied by changing working/living conditions which may cause a loss of welfare e.g. more traffic congestion and so a person's standard of living may fall.
- 7) **Hidden Social Costs attached to increases in National Income:** If a firm increases output national income increases. However, a hidden cost may be increased pollution etc.
- 8) **Distribution of National Income:** If increases in national income make their way into the pockets of a small minority, there may be no improvement in the standard of living of the whole community.
- 9) **Exclusion of Important Activities from Calculation of National Income:** The black economy is excluded from the calculation of national income. The work of housewives & voluntary activities is also excluded. Such activities are important to the welfare of its citizens.

- 10) **Nature of the Goods Produced:** A country which spends a small amount on military equipment and a large amount on health, education etc. will have a better standard of living than one where the reverse is the case.
- 11) **Government Services at Cost Price:** Government services are included at cost while private services are included at selling price. A country where the government provides many services will record a lower GDP / national income.

Something Unusual About National Income

Ok, at this stage we should realise that it is the value of goods and services produced by society that defines how rich a nation is. We use price to measure the value of each good and service produced by society and we use National Income to calculate the total value of all goods and services produced.

Suppose that there is an economy that consists of only two people, Jonny and Gav. Now suppose that Jonny produces a bike worth €100. He then sells that bike to Gav who pays Jonny €100 for the bike. That was the only transaction that took place in the economy. What is National Income?

Before we answer this question, let's just quickly recap on what has happened.

OUTPUT: The value of output produced in this economy was the bike worth €100.

EXPENDITURE: The amount of money spent in the economy was €100 by Gav when he bought the bike.

INCOME: The amount of income earned in this economy was €100 earned by Jonny when Gav paid him for the bike.

Do we notice anything about National Output, National Expenditure and National Income?

They are all the same and to answer the question, National Income for this economy is €100.

As we can see from the above example

NATIONAL INCOME = NATIONAL EXPENDITURE = NATIONAL OUTPUT

You would be forgiven for thinking that this is some sort of random coincidence but it is not. These three figures should always equal each other and if you think about it makes sense.

National Income = National Expenditure

If someone earned some money that means that someone else must have spent that money for the other person to have earned it.

National Expenditure = National Output

If someone spent money, then they must get something for their money, otherwise it is not an economic transaction but a charitable donation.

National Output = National Income

If somebody makes something that they don't plan to keep for themselves, they are not going to give it away for free (again, unless it is a charitable donation), they are going to want payment equal to the value or the worth of their produce.

This Brings us to Our Third Rule about Macroeconomics

Macroeconomics Rule 3

National Income = National Expenditure = National Output

What is and What is Not Included in National Income

The best way to think about National Income is that it is “the value of all goods and services produced”. When economists calculate the value of everything produced, sometimes they have to decide whether some spending should be included or not. We will have a look at two things below and see why they are included or excluded as National Income.

1) **Income in Kind:** Incomes in kind are included in National Income.

Income in Kind: is income received in a non - monetary form

or

Income in Kind: is any payment made in the form of goods and services

E.g. A salesperson who has the use of a company car.

The reason that this is included is because this is a payment that the factor of production receives for the production of goods and services and as such should be included in National Income.

2) **Transfer Payments:** Transfer Payments are not included in National Income.

Transfer Payments: Payments received for which no factor of production has been supplied

or

Transfer Payments: Income which people receive for which they did not supply goods or services.

E.g. The dole, children’s allowance, student grants, charitable donations

As no output is produced or no factor of production is supplied in return for these payments, they do not represent any increase in societal wealth (Which National Income is designed to measure) but they are a transfer of wealth from one portion of society to another. They are “received” but not “earned”.

Another way you can think of National Income is that it is the amount of money that the factors of production get to keep.

Different Names for National Income

When talking about National Income, the most important thing to remember is that all we are doing is adding up the value of the goods and services produced in an economy.

So, when talking about Ireland, to find National Income we should add up the total value of all goods and services produced in Ireland and this gives us our National Income. This makes economic sense.

But then we realise that there are many foreign owned companies that produce goods and services in Ireland and repatriate profits earned here back to their country of origin. We as Irish people don't get to keep that money, so should these repatriated profits be taken away from Irish National Income. Probably yes. But if we did this we would get a different answer to the method above and that also seemed a good way to measure National Income.

Also, during the year, many machines become broken and either have to be repaired or thrown away and new ones bought (depreciation). Should the money spent on replacing or repairing these machines be taken away from National Income as they have not produced anything new, they just replaced machines that broke during the production process. Well yes, but if we did that we would get a different answer again for National Income. So what do we do?

In order to get around these different issues, economists calculate different values for National Income and they call them different things.

In order to get from one measure of National Income to another, it is simply a matter of some addition or subtraction. The table below should make it clearer.

Gross	Domestic Product	@ Current Market Prices
- Depreciation	+/- Net Factor Income from the Rest of the World	+ Subsidies - Indirect Taxes
Net	National Product	@ Factor Cost

We will start off at the top of the table and work our way through

Gross Domestic Product @ Current Market Prices: It is the total value of expenditure within the country as a result of engaging in current economic activity in one year at current market prices.

or

Gross Domestic Product @ Current Market Prices: The output produced by the factors of production in the domestic economy irrespective of whether the factors are owned by Irish nationals or foreigners at current market prices.

Either definition is perfectly acceptable so just learn off the one that you find the easiest.

From Gross to Net and Back Again

In order to get from Gross Domestic Product @ Current Market Prices to Net Domestic Product @ Current Market Prices you take away depreciation.

Net Domestic Product @ Current Market Prices: It is the total value of expenditure within the country as a result of engaging in current economic activity in one year at current market prices, once depreciation has been taken into account

Depreciation: is the amount of capital that is used up or worn out in the production process.

Depreciation represents the amount of money that must be spent by an economy just keeping the factors of production at their current levels.

In order to get from Net Domestic Product @ Current Market Prices to Gross Domestic Product @ Current Market Prices you add depreciation.

See the next page for examples

Example

- 1) GDP @ Market Prices is €200m
Depreciation is €20m
Calculate NDP @ Market Prices
- 2) GDP @ Market Prices is €371m
Depreciation is €64m
Calculate NDP @ Market Prices
- 3) GDP @ Market Prices is €128m
Depreciation is €12m
Calculate NDP @ Market Prices
- 4) GDP @ Market Prices is €816m
Depreciation is €78m
Calculate NDP @ Market Prices
- 5) NDP @ Market Prices is €217m
Depreciation is €17m
Calculate GDP @ Market Prices
- 6) NDP @ Market Prices is €364m
Depreciation is €99m
Calculate GDP @ Market Prices
- 7) NDP @ Market Prices is €789m
Depreciation is €34m
Calculate GDP @ Market Prices
- 8) NDP @ Market Prices is €500m
Depreciation is €7m
Calculate GDP @ Market Prices

Solutions

1)	GDP = 200 Dep = <u>-20</u> NDP = 180	Ans = €180m
2)	GDP = 371 Dep = <u>-64</u> NDP = 307	Ans = €307m
3)	GDP = 128 Dep = <u>-12</u> NDP = 116	Ans = €116m
4)	GDP = 816 Dep = <u>-78</u> NDP = 738	Ans = €738m
5)	NDP = 217 Dep = <u>+17</u> GDP = 234	Ans = €234m
6)	NDP = 364 Dep = <u>+99</u> GDP = 463	Ans = €463m
7)	NDP = 789 Dep = <u>+34</u> GDP = 823	Ans = €823m
8)	NDP = 500 Dep = <u>+7</u> GDP = 507	Ans = €507m

From Domestic to National and Back Again

In order to get from Gross Domestic Product @ Current Market Prices to Gross National Product @ Current Market Prices, you either add or subtract Net Factor Income from the Rest of the World.

Gross National Product @ Current Market Prices: It is the total expenditure valued at today's market prices, produced by Irish owned factors of production, before any adjustments are made for taxation, subsidies or depreciation.

Or

Gross National Product @ Current Market Prices: It is the value of the total goods and services produced in an economy in a year valued at current/today's market prices, produced by Irish owned factors of production.

Net Factor Income from the Rest of the World: This is the difference between incomes earned by foreign factors of production in Ireland and sent abroad and income earned by Irish factors of production abroad and returned to Ireland.

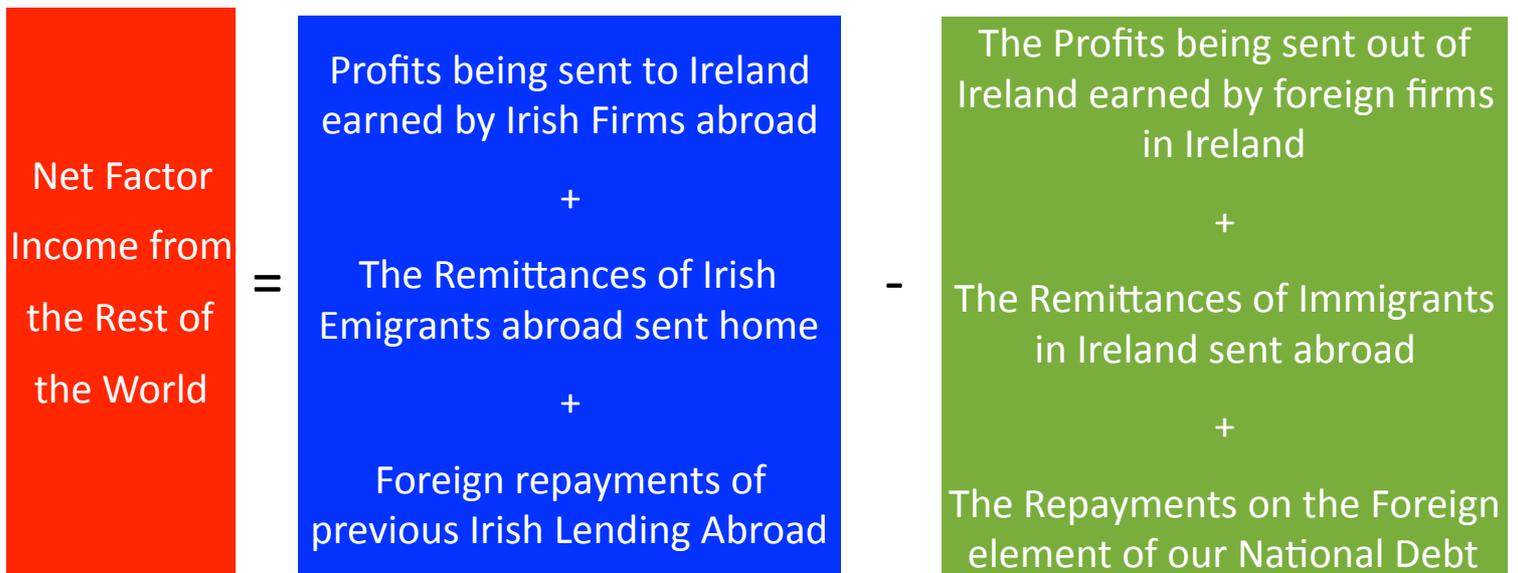
As we have already said, there are many foreign firms that operate in Ireland. Foreigners have set up firms here and they employ Irish people. When these firms make a profit, not all of this profit stays in Ireland. These foreign firms repatriate (or send home) some of this profit back to their country of origin.

This money does not stay in Ireland so Irish people do not get to keep it and as such should be removed from Irish National Income.

However, there are Irish owned firms that operate in other countries. If these Irish firms earn a profit from their operations abroad, they send some of this profit back to Ireland.

This money comes into and stays in Ireland and Irish people get to keep it. As such this money should be added to National Income.

Also, Ireland has a huge National Debt owed to foreign countries and banks. When Ireland makes repayments on the interest or the principle of this National Debt, that's money (and wealth) leaving Ireland. This wealth is not kept by Irish people and is removed from Irish National Income.



Examples

From the following figures, calculate Net Factor Income from the Rest of the World.

- 1) Profits repatriated out of Ireland €500m
 Profits repatriated into Ireland €200m
 Interest on the National Debt payed this year €50m
 Remittances of Immigrants in Ireland sent abroad €5m
- 2) Profits repatriated out of Ireland €1,000m
 Profits repatriated into Ireland €300m
 Interest on the National Debt payed this year €70m
 Remittances of Immigrants in Ireland sent abroad €12m
- 3) Profits repatriated out of Ireland €1,500m
 Profits repatriated into Ireland €2,000m
 Interest on the National Debt payed this year €23m
 Remittances of Immigrants in Ireland sent abroad €15m
- 4) Profits repatriated out of Ireland €2,500m
 Profits repatriated into Ireland €1,750m

Solutions

- 1) $€200 - (€500 + €50 + €5) = - €355$ Ans = - €355m
- 2) $€300 - (€1,000 + €70 + €12) = - €782$ Ans = - €782m
- 3) $€2,000 - (€1,500 + €23 + €15) = €462$ Ans = €462m
- 4) $€1,750 - €2.500 = - €750$ Ans = - €750m

To get from GDP to GNP

- 1) Add Net Factor Income from the Rest of the world to GDP if NFIA is Positive. Your answer is GNP.
- 2) Subtract Net Factor Income from the Rest of the world to GDP if NFIA is Negative. Your answer is GNP.

Example: From the following table, calculate GNP

	2007	2008	2009	2010	2011
GDP	500	600	700	800	900
NFI	-50	60	-40	-10	-110
GNP	?	?	?	?	?

Solution

	2007	2008	2009	2010	2011
GDP	500	600	700	800	900
NFI	-50	60	-40	-10	-110
GNP	450	660	660	790	790

To get from Domestic to National you either add or subtract NFIA from GDP and this gives you GNP.

To get from GNP to GDP

- 1) Add Net Factor Income from the Rest of the world to GNP if NFIA is Negative. Your answer is GDP.
- 2) Subtract Net Factor Income from the Rest of the world to GNP if NFIA is Positive. Your answer is GDP

Example

From the following table, calculate GDP

	2007	2008	2009	2010	2011
GNP	600	700	800	900	1000
NFI	-50	60	-40	-10	-110
GDP	?	?	?	?	?

Solution

	2007	2008	2009	2010	2011
GNP	600	700	800	900	1000
NFI	-50	60	-40	-10	-110
GDP	650	640	840	910	1110

You can think of GDP as the total value of goods and services produced in Ireland.

You can think of GNP as the total value of goods and services produced by Irish people.

There are a large number of foreign firms operating in Ireland which repatriate huge sums of money out of the country. This repatriation of money out of Ireland far exceeds the money repatriated into Ireland from Irish owned firms operating abroad. Also, there are a large number of foreign workers living and working in Ireland that send wages home, which exceeds the amount of money Irish people working abroad send home. Finally, the Irish government has borrowed unprecedented amounts of money which has to be paid back in instalments. The amount of money that the government has borrowed and as such has to pay back, is greater than the money that is paid back to the Irish government. As such, Net Factor Income from the Rest of the World is a large negative figure for Ireland.

This large negative figure makes GDP much greater than GNP and as such, GNP is considered a more accurate measure of Irish wealth. We will look more closely at this later.

In Ireland at present, would you expect GNP to be greater than, equal to, or less than, GDP? Explain your answer (Learn This)

In Ireland GNP is currently less than GDP because Net Factor Income from the Rest of the World is negative. This is due to the following reasons

- 1) **The Repayments on the Foreign element of our National Debt:**
Ireland currently has the greatest National Debt in the history of the state and the repayment of this debt is included in Net Factor Income from the Rest of the world as a large negative figure.
- 2) **The Repatriation of Profits by Foreign Companies resident in Ireland:**
At present, foreign companies operating in Ireland repatriate more profits out of the country than Irish companies operating abroad repatriate back into Ireland. This is included in Net Factor Income from the Rest of the world as a large negative figure.
- 3) **The Remittances of Immigrants in Ireland sent abroad:** In Ireland we have had a huge influx of non nationals coming to the country in order to find work. As these non nationals find work and earn wages in Ireland, A large proportion of them send a portion of their wages back to their country's of origin. This is included in Net Factor Income from the Rest of the world as a negative figure.

From Market Prices to Factor Cost and Back Again

In order to get from GDP @ Current Market Prices to GDP @ Factor Cost you add Subsidies and take away Indirect Taxes.

Gross Domestic Product at Factor Cost: It is the total value of expenditure within the country as a result of engaging in current economic activity in one year, valued at payments to factors of production.

Subsidies: are payments made from the government to a firm in order to reduce the cost of production faced by the firm

Subsidies are the payments that the factor of production receives but is not charged to the consumer. That is, subsidies are not included in the market price.

Indirect Taxes: are taxes on goods and services. Indirect taxes are paid indirectly to the government by final consumers.

Indirect Taxes are a part of the market price that the consumer pays but the factor of production does not receive. Indirect taxes are paid indirectly to the government by final consumers.

Probably the best way to look at National Income is, the end payment received by Irish factors of producing for producing goods and services in society.

Therefore, in order to find out how much of the market price the factor of production gets to keep, you add subsidies and take away indirect taxes.

To get from Current Market Prices to Factor Cost you

- 1) Add Subsidies
- 2) Take away Indirect Taxes.

To get from Factor Cost to Current Market Prices you

- 1) Take away Subsidies
- 2) Add Indirect Taxes.

EXAMPLE

From the following figures calculate GDP @ Factor Cost

	2007	2008	2009	2010	2011
GDP @ Current Market Prices	600	700	800	900	1000
Subsidies	20	24	28	17	12
Indirect Taxes	80	78	89	68	54
GDP @ Factor Cost	?	?	?	?	?

SOLUTION

Don't forget, in order to get from Current Market Prices to Factor Cost you

- 1) Add Subsidies
- 2) Take away Indirect Taxes.

	2007	2008	2009	2010	2011
GDP @ Current Market Prices	600	700	800	900	1000
Subsidies	20	24	28	17	12
Indirect Taxes	80	78	89	68	54
GDP @ Factor Cost	540	646	739	849	958

EXAMPLE

From the following figures calculate GDP @ Market Prices

	2007	2008	2009	2010	2011
GDP @ Factor Cost	600	700	800	900	1000
Subsidies	30	35	39	43	47
Indirect Taxes	50	68	74	78	80
GDP @ Current Market Prices	?	?	?	?	?

SOLUTION

Don't forget, in order to get from Factor Cost to Current Market Prices you

- 1) Take away Subsidies
- 2) Add Indirect Taxes.

	2007	2008	2009	2010	2011
GDP @ Factor Cost	600	700	800	900	1000
Subsidies	30	35	39	43	47
Indirect Taxes	50	68	74	78	80
GDP @ Current Market Prices	620	733	835	935	1033

Summary of Definitions

Gross Domestic Product @ Current Market Prices: It is the total value of expenditure within the country as a result of engaging in current economic activity in one year, valued at current market prices.

or

Gross Domestic Product @ Current Market Prices: The output produced by the factors of production in the domestic economy irrespective of whether the factors are owned by Irish nationals or foreigners at current market prices.

Net Domestic Product @ Current Market Prices: It is the total value of expenditure within the country as a result of engaging in current economic activity in one year at current market prices, once depreciation has been taken into account

Gross National Product @ Current Market Prices: It is the total expenditure valued at today's market prices, produced by Irish owned factors of production, before any adjustments are made for taxation, subsidies or depreciation.

Or

Gross National Product @ Current Market Prices: It is the value of the total goods and services produced in an economy in a year valued at current/today's market prices, produced by Irish owned factors of production.

Net National Product @ Current Market Prices: It is the total expenditure valued at today's market prices, produced by Irish owned factors of production, before any adjustments are made for taxation or subsidies., having taken depreciation into account.

Or

Gross National Product @ Current Market Prices: It is the value of the total goods and services produced in an economy in a year valued at current/today's market prices, produced by Irish owned factors of production, having taken depreciation into account.

Gross Domestic Product at Factor Cost: It is the total value of expenditure within the country as a result of engaging in current economic activity in one year, valued at payments to factors of production.

Gross National Product at Factor Cost: The total output produced (value of goods & services) by Irish owned factors of production in Ireland and elsewhere valued at payments to the factors of production.

Net Domestic Product at Factor Cost: It is the total value of expenditure within the country as a result of engaging in current economic activity in one year, valued at payments to factors of production, once depreciation has been taken into account

Net National Product at Factor Cost (National Income): The income accruing to the permanent residents of a country from current economic activity during a specified period of time, usually a year

Summary

Having read through this note, you have learned a lot.

- 1) It is the quantity and quality of goods and services produced by the factors of production that define the wealth of a Nation. The more goods and services produced, or an increase in the value of goods and services produced, the richer a country is.
- 2) National Income measures the value of all final goods and services produced and as such is a good measure of the standard of living in an economy or society.
- 3) An obvious way of showing a rise in national income is by an increase in the quantity of goods and services produced. Measuring national income by just showing changes in the quantities produced and keeping prices constant is called Real GDP.
- 4) Prices measure the value of a good or service from a societal point of view. A rise in price can be caused by an increase in society's demand for that good. In this case the prices of other goods would fall or remain unchanged. If prices of all goods rise, this is called inflation and is caused by the government (or more accurately a central bank) printing too much money.
- 5) As people earn their income from production and in order for someone to earn income it requires someone else to have spent the money i.e. give them this income; we know that National Income = National Output = National Expenditure.
- 6) National Income has many uses and many drawbacks and as such is a good but by no means perfect way of measuring the standard of living of a country. You have to know 5 of each.
- 7) In order to try to fix some of the measurement issues associated with National Income, economists have come up with different measures of National Income. These are just different ways of counting or deciding on different things to include in the National Income Calculations. You need to know how to calculate each of them.