Topics Covered:
National Income

About Ray:
Ray has been teaching Accounting and Economics at the Institute for 9 years, having taught previously for over 25 years in a convent secondary school. Ray was a regular contributor to the Irish Independent Exam Brief series for 6 years and has also written a number of articles for various business publications. He is the author of Graded Accounting Questions for Leaving Cert published by Gill and Macmillan in 2011. Ray is one of the authors of the 2015 Exam Times Business, Accounting and Economics supplement, published by the Irish Times.
National Income is the total income accruing to the permanent residents of a country as a result of engaging in economic activity.

It is the total amount of money in circulation in a country at any one time.
It is often referred to as Gross National Product.
National Income is the total wealth gained as a result of supplying the factors of production.
Simon Kuznets is generally regarded as the father of national income and fuelled the Keynesian revolution of expansionary fiscal policy.

The 4 factors of production are Land, Labour, Capital and Enterprise

There are 3 ways of measuring National Income, all of which yield the same figure but are used as a check on the accuracy of the method used.

1. Income Method
Add all incomes in whatever form they are earned, wages, salaries, rent, profit, interest etc.

- Stock appreciation (Increased valuation due to inflation)
- Financial services profit (bank lending - deposit rates)
= Net Domestic Product at factor cost
- Net Factor income (Factor incomes earned abroad less factor income earned in Ireland and sent abroad)
= Net National Product at factor cost (National Income)
Exclude Transfer Payments * Include Payments/
Benefit in kind

*Transfer Payments* are payments for which no factor of production is supplied e.g. welfare payments, gifts and inheritances, pocket money from parents etc.

**Benefit in kind** is non–monetary payment for supplying a factor e.g. company car, expense a/c
2. **Output Method**

Add all production of goods and services for the year.

Adjustments are the same as for the income method.

Remember only count the **added value** at each stage of production ........ Avoid double counting

e.g farmer grows wheat € 100 from € 5 seed  
Add: Value  €  95
miller sells to baker for € 500
who sells to confectioner for € 800
who sells to customer for € 1000

3. **Expenditure Method**

Simply total up all the different types of expenditure for the year

\[
Y \quad \text{Income} \quad = \quad \text{Total National Income}
\]

\[
+ C \quad \text{Consumption} \quad = \quad \text{personal /public spending}
\]

\[
+ I \quad \text{Investment} \quad = \quad \text{spending by business}
\]

\[
+ G \quad \text{Government} \quad = \quad \text{spending by the different government departments}
\]

\[
+ X \quad \text{Exports} \quad = \quad \text{spending by foreigners on Irish goods and services}
\]

\[
I + G + X \quad \text{are called Injections}
\]

\[
- M \quad \text{Imports} \quad = \quad \text{spending on foreign goods and services}
\]

\[
- T \quad \text{Taxes} \quad = \quad \text{money spent on indirect taxation e.g VAT}
\]

\[
- S \quad \text{Savings} \quad = \quad \text{money withdrawn from circulation}
\]

\[
M + T + S \quad \text{are called Withdrawals / Leakages}
\]
\[ Y = C + I + G + X - M - T - S \]

\[ = GDP \text{ at market prices} \]
\[ - \text{ factor income} \]

\[ = GNP \text{ at market prices} \]
\[ - \text{ indirect taxes} \]
\[ + \text{ subsidies} \]

\[ = GNP \text{ at factor cost} \]
\[ - \text{ depreciation} \]

\[ = \text{NNP at factor cost} \]

The final and most accurate, realistic fig for National Income

1. **Domestic** v **National**

   ( Ireland / Place ) ( Irish / People )
   ( all factors ) ( Irish factors only )

   Domestic - Factor income = National

**Domestic**

This measures the total income generated from economic activity within the state regardless of by whom.
Output produced in Ireland by all factors irrespective of whether the factors are owned by Irish nationals or not.
Domestic means generated at home.

**National**
This measures the total income earned by Irish people regardless of where they are living or working i.e. Irish national income
National is a more realistic indication of economic growth for a country and is therefore a better reflection of the standard of living for the inhabitants of a country

**Factor income**
This is the difference between factor incomes earned abroad by Irish nationals and foreign nationals resident in Ireland
Factor incomes are rent, wages, interest and profit.
Factor income flows into and out of Ireland for many reasons

1. Repatriation of company profits back to mother country (over 1000 foreign co’s in Ireland)
2. Emigrants / Immigrants remittances.
3. Interest payments on the National Debt.

In Ireland factor income is negative as multi-national profits sent out of Ireland and the interest on the National Debt outweigh any foreign earnings from abroad

**Economic Growth 26% ?**

( Central Statistics Office July 2016 )

Economic growth for 2015 has been identified by CSO as 26% for Ireland which is statistical fact but in terms of reflecting what is actually going on it is clearly fiction.
Exports rose by € 75 billion last year.
Irelands capital stock rose by € 300 billion also last year
Domestic figure ( NDP ) is being distorted for Ireland as a result of the following

(i)  **Contract Manufacturing**

This term refers to a form of outsourcing work by an Irish company (multinational usually) to a foreign firm to manufacture component parts or products on their behalf. Irish exports have been artificially inflated by this contract manufacturing which is not a true reflection of economic growth in Ireland

(ii) **Tax Inversions**

This refers to a smaller firm based in Ireland taking over a larger foreign based firm and relocating their head office to the more tax friendly country such as Ireland. The deal is dressed up to look like the smaller one is acquiring the larger when the reverse is the case e.g medical device firms Coviden and Medtronic.

(iii) **Aircraft Leasing**

Investment in aircraft for leasing can add to Irelands capital stock while generating very little income here at home. Ireland is a global hub for aircraft leasing with 4,000 commercial aircraft leased through companies registered in Ireland.

(iv) **Relocating Patents**

To avoid tax many pharmaceutical and technology firms such as Apple, transfer international patents or intellectual property assets to a tax haven such as Ireland. A common way to shift profits offshore is through "transfer pricing" which involves multinational subsidiaries in different countries charging each other for goods and services sold within the group. Royalty payments between subsidiaries are priced in such a way to minimise profits in high countries and maximise them in low tax ones.
2. **Gross v Net**

\[
\text{Gross} - \text{Depreciation} = \text{Net}
\]

Gross includes depreciation, Net is after depreciation

Gross includes money spent on replacing the asset that has worn out during the year. This spending does not improve a country's standard of living therefore depreciation is deducted.

3. **Factor Cost v Market Prices**

\[
\text{Factor Cost} + \text{Taxes} - \text{Subsidies} = \text{Market Price}
\]

Factor cost means that production is valued at what the factors of production receive as payment for their use.

Market price is the price that the product is sold to the public for i.e. the retail price, inclusive of taxes

**Examples**

- **Subsidy**
  - Market price of carton of milk: 1.30
  - Subsidy paid to farmer: 0.20
  - Factor cost of production: 1.50

- **Tax**
  - Petrol per litre costs: 0.60
  - Excise, VAT, Carbon taxes: 0.70
  - Market price at pumps: 1.30
GNP and GDP

**GDP** is the total market value of goods and services produced in Ireland by all factors.

**GNP** is the total value of goods and services produced in an economy which accrues to the permanent residents of a country.

**Net Factor Income** is the difference between domestic and national made up of

- Multinational profits
- Interest on the national debt
- Immigrants remittances

**GNP rather than GDP is a better indicator of the standard of living in a country.**

In Ireland's case GDP is larger than GNP and as factor income is negative and subtracted correspondingly GNP is more reflective of standard of living as it is income that ends up or stays in Ireland.

**However GDP is a better indicator of economic activity** as it shows volatility in the economy. Internationally GDP is the most common measure of growth in a country, public spending and debt ratios.

**Difference:**

The difference is very pronounced in Ireland more so than other country's such as the US and the OECD members. The ratio of GDP to GNP was measured as 125% which is exceptionally high by international standards. In virtually all other EU member states the two measurers and their rates of growth are almost coincident. Since the lower GNP figure is closer to a measure that is domestically available it is the more useful of the two in discussions of resource allocation and of tax burdens.
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Questions:

(a) What is the difference between GDP at factor cost and GNP at market prices

(Solution requires you to explain all the components of the terms i.e. Gross, Domestic, National, Factor cost, Market prices and Product)

**GDP at market prices** is the total value of input / expenditure within a country as a result of engaging in current economic activity in one year, valued at price sold in market i.e inclusive of taxes and subsidies.

It is the output produced by the factors of production in the domestic country irrespective of whether the factors are owned by Irish nationals or foreigners.

**NNP at Factor Cost** is the value of the total output / expenditure valued at price paid for the factors of production, produced by Irish factors of production after depreciation.
and excluding taxes and net of subsidies
It is the net value of the total goods and services produced in an economy in a year by Irish factors only i.e what ends up in Ireland

(b). Show the relationship between both terms

**GDP at factor cost**
- Depreciation
- Factor income
- Indirect taxation
+ Subsidies
= **NNP at Factor Cost**

(c) What is the formula for determining National Income using the Expenditure method and identify the factors that determine each element of the formula

\[ Y = C + I + G + X - M - S - T \]

- Consumption: Income, lifestyle, domestic circumstances
- Investment: Rate of interest, economic climate
- Government Expenditure: Tax collected, infrastructure requirements
- Exports: Inflation rate, quality of products, value of €
- Imports: Disposable income, prices, availability of goods
- Savings: Income, rate of interest, Dirt tax
- Taxation: Budgetary requirements, state of economy

Calculate the following:

(d) If Exports constitute 30 % of GNP and Imports constitute 50 % of GNP will GNP rise
or fall if the price of Exports rise by 5% and the price of Imports rise by 10%.

(e) GNP at market price in year 1 = 2000 and year 2 = 2400
If prices rose by 10% while population remained unchanged how has the average standard of living changed?
If population increased by 25% has the standard of living now changed.

(f) If GNP at current market prices is € 280 m, Subsidies €9, Depreciation € 17m and Taxes € 35 m complete the following

- GNP at Factor cost
- NNP at Factor cost

(g) If G = 700, C = 2,000, I = 1,000, X = 1,200, M = 1,000
Factor income = 600, Depreciation = 100, Tax = 250, Subsidies = 200

Calculate
1. GDP at M.P.
2. GNP at M.P
3. National Income
4. NDP at FC
Limitations as to the use of National Income Statistics

1. Population changes
   If GNP grows at a slower rate than population, then GNP per head decreases and the average standard of living will fall.

2. Inflation
   An increase in prices will automatically increase GNP at current market prices. So it is better to consider GNP at constant market prices.

3. Employment/ Unemployment
   If a person is unemployed rising GNP per head 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. 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.

7. Hidden social costs attached to increases in GNP
   If a firm increases output GNP increases. However a hidden cost may be increased pollution.

8. Distribution of GNP
   General living standards depend on its distribution. If increases in GNP make their way into 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 GNP
   The black economy is excluded from the calculation of national income. The work of housewives and much of the work of voluntary activities is also excluded. Such activities are most 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 that one where the reverse is the case i.e. much of its wealth on armaments.

11. **Government services at cost price.**
   Government services are included at cost while private services are provided at selling price. A country where the government provides many services will record a lower GDP.

12. **International comparisons**
   When comparing the GNP of different country’s take into account conversion of currencies to a common denominator the extent to which a country is self-sufficient/hot climate inhabitants spend less on heat

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**Reasons for measuring National Income (Uses)**

1. **Indication of alterations in our standard of living (Economic growth)**
   - Any change in our GNP figures will indicate the level of economic growth within the country from one year to the next
   - It gives a general indication of changes to our standard of living-if any.

2. **Means of comparing the standard of living in different countries.**
   - We can use the GNP statistics to compare the standard of living in our country with that of other countries.
   - Comparisons to Britain, U.S. and similar European counties are always informative.

3. **Assist the government in formulating economic policy.**
   - Governments now play a greater influence in 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
   - To provide a benchmark for against which progress can be monitored - it is useful to have these statistics
5. EU Budget Contributions / 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 aid from the EU and the amount of that aid.

6. To show the distribution of income throughout the country

- National income statistics indicate changes in consumer spending habits over the years.
- Evidence of this can be found in the census of population 2016.

7. Government borrowing is expressed as a percentage of National Income

- Current budget deficit target less than 3% of GNP
- General government borrowing now less than 90% GDP

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**Economic Growth**

**Positive Features**

1. **Increased employment**
   A rise in GDP indicates increased production and demand for goods and services. This increased demand will require more labour to meet production requirements. As our growth rate is 5% - 6% 100,000 extra jobs have been created.

2. **Improved government finances**
   Greater employment will increase income on which workers pay more income tax. More is collected through indirect taxation such as VAT, stamp duty on houses, car tax, carbon and excise taxes. Following from this, government spending on social welfare will decrease. Our budgetary position has improved as our deficit has fallen to the required 3%.

3. **Improved standard of living**
   Higher GNP will result in greater wealth allowing us to engage in discretionary expenditure on cars, holidays etc. Consumer sentiment index which is a reflection of consumer demand has risen by
over 10% in 2015. We are spending more and have a better standard of living.

4 **Investment will increase.**
Rising GDP is an indicator of a growing economy which will attract foreign investment to locate here i.e. more FDI’s as they see investment opportunities. Domestic entrepreneurs will also be attracted to invest.

5. **Less emigration**
As jobs become more available at home those who may have considered emigration may remain, also tempting offers for our brightest and best graduates in the medical and financial fields in particular to return.
Also immigrants form eastern Europe will be attracted to Ireland as happened in the boom years 1997-2017.

**Negative consequences of economic growth**

1. **Inflationary pressures**
Prices rises due to increased demand and economic activity.
Ireland is committed to keeping inflation below 2% as part of Euro zone condition.
This rise in inflation will also damage our export market as our products and services become less competitive.

2. **Higher wages and industrial unrest**
Expectations by workers for higher wages will follow as the economy is buoyant.
Evidence of this already exists with Luas drivers, public service workers demanding restoration of pay scales prior to Haddington Road agreement.

3. **Imports increase**
Further balance of payments problems will ensue as incomes rise and consumers use this extra spending power primarily on imported goods.

4. **Labour shortages in particular industries**
The increased demand for goods and services will increase the demand for labour in retailing, construction etc which we may not be able to fill.
5. **Infrastructure problems**

Greater demand for scarce resources will put pressure on the government to supply more services such as increase police force, nurses and also capital expenditure on roads hospitals schools etc.