

National income statistics

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What you need to know

By the end of this topic you should be able to:

1. **Explain what national income means:** the total value of the income earned (equal to the output produced) in an economy over a period of time, usually a year.
2. **Explain and calculate three measures of national income:**
 - **Gross Domestic Product (GDP):** the value of output produced inside the country's borders;
 - **Gross National Income (GNI):** the income earned by the country's residents, wherever they earn it;
 - **Net National Income (NNI):** GNI after allowing for the capital used up in producing it.
3. **Adjust a measure from market prices to basic prices**, by taking away indirect taxes and adding subsidies.
4. **Adjust a measure from gross to net**, by taking away capital consumption (depreciation).

Using these figures to compare living standards, and the circular flow model in detail, come in later topics.

Understand it

What national income is

Every year the people and firms in a country produce goods and services. Whatever is produced is sold to someone, so the value of **output** is also the value of **spending** on it; and the money firms receive is paid out to the people who supplied the factors of production, as wages, rent, interest and profit, so it is also **income**. That gives three ways to measure the same total:

$$\text{national output} = \text{national income} = \text{national expenditure}$$

National income is this total over a period, usually a year. It is a **flow** (so much per year), not a stock of wealth such as a country's buildings or its national debt.

The three methods of measuring it

- **Output method:** add up the **value added** by every firm, that is, the value of its output minus the value of the inputs it bought from other firms. Adding the full value of every sale would count the same wheat in the farmer's output, the miller's flour and the baker's bread: **double counting**. Adding value added counts each stage once.
- **Income method:** add up the **factor incomes** earned from producing output: wages and salaries (including overtime and bonuses), rent (including rent from houses owned by the government), interest, and profits (both dividends paid to shareholders and profits kept by companies).
- **Expenditure method:** add up spending on the country's output: consumption C , investment I , government spending on goods and services G , and exports minus imports:

$$\text{GDP} = C + I + G + (X - M).$$

Imports are taken away because they are output produced in **another** country.

What is left out

National income measures income earned by **producing** something. So these are **not** counted:

- **Transfer payments:** pensions, unemployment benefit, child benefit, student grants and other welfare payments. They move income from taxpayers to other people, but nothing is produced in return. (The wages of the nurse or teacher paid by the government **are** counted, because they are paid for a service.)
- **Buying and selling second-hand goods**, which were counted in the year they were made, and **financial transactions** such as selling shares, which only change who owns something.
- **Things done without a market transaction:** leisure time, cooking for your own family, painting your own house, voluntary work. They have value, but no money changes hands, so they are not recorded.

A useful test: **was something produced, and did someone earn income from producing it this year?** If not, leave it out.

This is also how to work out what an event does to **recorded** national income. If a strike stops a bus company for a week, the lost fares are lost output and lost income. If the police are paid overtime to manage the traffic, that is extra paid-for output, which is recorded. The value strikers put on their extra free time is not recorded, and neither is any tax lost separately, because indirect tax is already part of the fares.

GDP and GNI: where it is produced or who earns it

GDP counts output produced **inside the country**, whoever owns the firm. A car factory owned by a foreign company adds to this country's GDP.

But part of that income goes abroad: the foreign company sends its profits home, and foreign workers send some of their wages home. At the same time, this country's residents earn income abroad: profits from factories they own overseas, interest and dividends on foreign assets, and wages earned working abroad.

GNI counts income earned by the country's **residents**, wherever they earn it:

$$\text{GNI} = \text{GDP} + \text{net primary income from abroad},$$

where

net primary income from abroad = income earned abroad by residents – income earned in the country by non-residents.

Questions also call this **net property income from abroad** or **net factor income from abroad**; they all mean the same thing. It can be **negative**: a country with many foreign-owned firms often pays out more than it receives, so its GNI is **less** than its GDP. Exports and imports do **not** explain the gap between GDP and GNI; they are already inside GDP.

Gross and net: allowing for worn-out capital

Producing this year's output wears out machines, vehicles and buildings. The value of capital used up in a year is called **capital consumption** or **depreciation**. Part of each year's investment only replaces it, so it is not new income the country can spend.

"**Gross**" means before this is taken away; "**net**" means after:

$$\text{NNI} = \text{GNI} - \text{capital consumption}, \quad \text{NDP} = \text{GDP} - \text{capital consumption}.$$

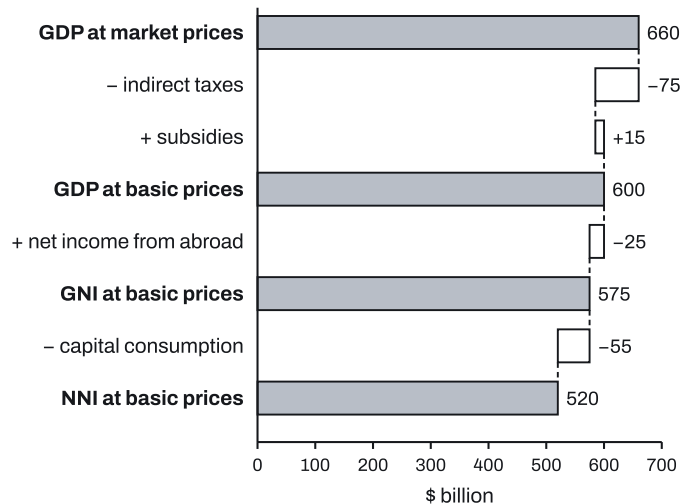
So NNI is always less than GNI in a country with any capital: the gap is the capital worn out that year. It has nothing to do with inflation or with trade.

Market prices and basic prices

Prices in the shops include **indirect taxes** (such as VAT or a tax on fuel) and are lowered by **subsidies**. A measure using these prices is "at **market prices**". But taxes are not income for the firm that made the product, and a subsidy is extra income for it. So to value output by what producers actually receive, the measure is put "at **basic prices**":

$$\text{basic prices} = \text{market prices} - \text{indirect taxes} + \text{subsidies}.$$

Going the other way, $\text{market prices} = \text{basic prices} + \text{indirect taxes} - \text{subsidies}$. The value of output at basic prices is also called **gross value added** at basic prices.



The chart puts all three adjustments in a row, using the numbers from Example 3. Each one is a separate step, and you can do them in any order: the tax adjustment changes "market" to "basic", the income from abroad changes "domestic" to "national", and capital consumption changes "gross" to "net".

Key facts and formulas

There is no formula list in the 9708 exam, so every formula here is "Learn it".

Formula	Status
National output = national income = national expenditure	Learn it
$GDP = C + I + G + (X - M)$	Learn it
$GNI = GDP + \text{net primary (property, factor) income from abroad}$	Learn it
Net income from abroad = income earned abroad by residents – income earned here by non-residents	Learn it
$NNI = GNI - \text{capital consumption (depreciation)}$; $NDP = GDP - \text{capital consumption}$	Learn it
Basic prices = market prices – indirect taxes + subsidies	Learn it
Market prices = basic prices + indirect taxes – subsidies	Learn it
Counted: wages, salaries, overtime, rent, interest, dividends, retained profits	Learn it
Not counted: transfer payments, second-hand sales, share sales, unpaid and non-market activity	Learn it

How to do it

In the questions we have tagged for this topic (15 questions, 2023–2025, all multiple choice on Paper 1), the types came up this often.

Question type	Questions
Multiple choice: calculate a measure from national income figures	7

Question type	Questions
Multiple choice: what is included in or left out of national income	4
Multiple choice: what an adjustment or a measure means	4

1. Multiple choice: calculate a measure from national income figures (7 questions)

1. **Read what is asked for** and write its full name: domestic or national? gross or net? market or basic prices?
2. **Write the formula** that links what you are given to what you want, one adjustment at a time.
3. **Cross out anything that doesn't belong**: national debt, the value of assets, transfer payments and similar figures are distractors.
4. **Watch the signs**. A negative net income from abroad is **added** as a negative number, so GNI falls. Capital consumption is always **taken away**.
5. Work it out and match it to an option. The wrong options are usually what you get by missing one step or using one sign the wrong way round.

For example: GDP \$50bn, net property income from abroad -\$4bn, capital consumption \$7bn, national debt \$30bn. $NNI = 50 - 4 - 7 = \$39bn$; the debt is a stock and plays no part.

Variations you will meet:

- **Expenditure first**. Given C , I , G and net exports: add them to get GDP, then add net income from abroad for GNI, then take away depreciation for NNI.
- **Two incomes from abroad given separately**. $GNI = GDP + \text{income residents earn abroad} - \text{income non-residents earn here}$. For example, GDP \$200bn, residents earn \$12bn abroad, non-residents earn \$20bn here: $GNI = 200 + 12 - 20 = \$192bn$.
- **Market to basic prices, or back**. From market to basic: minus taxes, plus subsidies. From basic to market: plus taxes, minus subsidies. For example, GDP at market prices \$900bn, indirect taxes \$120bn, subsidies \$30bn: $GDP \text{ at basic prices} = 900 - 120 + 30 = \$810bn$.
- **Working backwards for a missing item**. If you know both GDP at market prices and at basic prices plus the subsidies, rearrange: $\text{indirect taxes} = \text{market} - \text{basic} + \text{subsidies}$. Check two answers at once when the options are pairs.
- **What an event does to recorded national income**. Add up only the changes in **paid-for output**: lost sales count as a fall, extra paid work (overtime, repairs) as a rise. Leave out leisure and other unpriced effects, and don't add lost tax on top of lost sales, because the tax is already inside the sales figure.

2. Multiple choice: what is included in or left out of national income (4 questions)

1. **Ask the test question**: was something produced this year, and did someone earn this income by producing it?
2. **Transfer payments fail the test**: pensions, unemployment and welfare benefits. In "Which is **not** included?" questions they are nearly always the answer.
3. **Factor incomes pass it**: wages, salaries and overtime; rent (from private or government-owned property); dividends and retained profits; income from abroad (in GNI).

Variations you will meet:

- **Named in terms of the income method** ("when calculating national income by the income method, what would not be included?"): the same test; transfer payments are left out.
- **"Not included in real GDP"**: real only means adjusted for inflation, so the same items are counted; the answer is still the transfer payment.
- **Watch the word "not"**, and read all four options: three will be factor incomes.

3. Multiple choice: what an adjustment or a measure means (4 questions)

1. **Match each word in the measure to its adjustment:** domestic to national uses net income from abroad; gross to net uses capital consumption; market to basic prices uses indirect taxes and subsidies.
2. **Pick the option that names exactly that adjustment,** and cross out options that name trade, inflation or investment.

Variations you will meet:

- **"Why is NNI less than GNI?"** Because capital (machines, buildings) has worn out: depreciation. Not inflation, not exports, not income sent abroad.
- **"What explains the difference between GDP and GNI?"** Income flowing across borders from owning or working: profits of foreign-owned firms sent home, interest and dividends, and wages earned by residents working abroad and sent home. Money from exports or foreign investment spending is already in GDP.
- **"Which items change GDP at market prices to basic prices?"** Indirect (expenditure) taxes and subsidies.
- **Naming a statistic from a description.** Start from its parts: "income from work, pensions and benefits, after income tax and contributions" is **disposable income** (what households have left to spend); "adjusted for inflation" makes it **real**. Put the words together: a change in **real disposable income**.

Worked examples

Example 1

Which of the following would be included when national income is measured by the income method?

- **A** a state pension paid to a retired farmer
- **B** money received from selling a second-hand car
- **C** profits kept by a company to buy new machinery
- **D** unemployment benefit paid to a factory worker

[1]

Retained profits are part of the profit a firm earned by producing output this year, so they are factor income. The answer is **C**. (1)

A and D are transfer payments: nothing is produced in return. B is a second-hand sale; the car was counted in the year it was made.

Example 2

The table shows figures for an economy.

	billion dollars
GDP at market prices	480
net primary income from abroad	-12
indirect taxes	64
subsidies	10
capital consumption	38

What is net national income at basic prices?

- **A** \$376bn

- **B** \$400bn
- **C** \$414bn
- **D** \$430bn

[1]

Take the three adjustments one at a time:

- market to basic prices: $480 - 64 + 10 = 426$;
- domestic to national: $426 + (-12) = 414$;
- gross to net: $414 - 38 = 376$.

The answer is **A**. (1)

C is GNI at basic prices (capital consumption forgotten); B comes from adding the 12 instead of taking it away; D ignores the taxes and subsidies.

Example 3

An economy has these figures for a year, in billions of dollars: consumption 420, investment 110, government spending 150, exports 180, imports 200, indirect taxes 75, subsidies 15, net primary income from abroad -25, capital consumption 55.

(a) Calculate GDP at market prices. [1]

(b) Calculate GDP at basic prices. [1]

(c) Calculate GNI and NNI at basic prices. [2]

(d) Explain why GNI is smaller than GDP in this economy. [2]

(a) $GDP = C + I + G + (X - M) = 420 + 110 + 150 + (180 - 200) = \660bn . (1)

(b) $660 - 75 + 15 = \$600\text{bn}$. (1)

(c) $GNI = 600 + (-25) = \$575\text{bn}$ (1); $NNI = 575 - 55 = \$520\text{bn}$ (1).

(d) GNI is GDP plus net primary income from abroad, and here that is negative (1): non-residents, such as foreign firms that own factories in the country, earn \$25bn more here than residents earn abroad, and that income leaves the country (1).

The chart in "Understand it" shows these steps.

Example 4

A flood closes a food factory for a month. The table shows estimates of its effects, in thousands of dollars.

	thousand dollars
sales lost by the factory	900
value of time volunteers spent clearing the mud	30
extra overtime paid to council emergency workers	50
payments to builders to repair the factory	120
indirect tax lost on the factory's sales	90

By how much does the flood change recorded national income?

- **A** a fall of \$730 000

- **B** a fall of \$760 000
- **C** a fall of \$820 000
- **D** a fall of \$850 000

[1]

Count only changes in paid-for output: the lost sales (-900), the overtime ($+50$) and the repairs ($+120$). The volunteers' time is not paid, so it is not recorded, and the lost tax is already part of the lost sales. The change is $-900 + 50 + 120 = -730$ thousand. The answer is **A**. (1)

B comes from also counting the volunteers' time as a loss, C from counting the lost tax a second time, and D from ignoring the repairs.

Common mistakes

- **Forgetting capital consumption.** In one recent NNI question, fewer than a quarter of candidates were right; the most popular wrong answer was GNI, found by leaving out depreciation. "Net" always means depreciation has been taken away.
- **Getting the sign of net income from abroad wrong.** A negative figure makes GNI smaller than GDP. Write " $+(-3)$ " rather than doing it in your head.
- **Adjusting for taxes the wrong way round.** Going from market to basic prices, taxes come **off** and subsidies go **on**; going from basic to market, the other way. Ask: do shop prices include the tax? Yes, so market prices are the higher ones when taxes are larger than subsidies.
- **Counting transfer payments.** Pensions and benefits are income for the person who gets them, but nothing is produced in return, so they are left out of national income.
- **Using every number in the table.** National debt, the value of assets or a population figure are there to catch you. National debt is a stock, not a yearly flow of income.
- **Mixing up GDP and GNI.** GDP is about **where** output is produced; GNI is about **who** earns the income. Trade in goods (exports, imports) is inside GDP and does not explain the gap.
- **Linking NNI to inflation.** Gross and net are about worn-out capital; real and nominal are about prices. They are separate adjustments.
- **Counting things with no market price.** Leisure, housework and voluntary work have value but are not recorded.

How to get the marks

- **Multiple choice is one mark and no working is marked**, so write the working in the margin anyway: the wrong options are built from the common slips, and a written chain lets you catch them.
- **Name each measure in full** before calculating: "GNI at basic prices" tells you which three adjustments to make.
- **Read "not", "net", "basic" and "market"** in the stem twice. One word changes which option is right.
- **Use the options to check your answer.** If yours is missing, go back through signs and adjustments; if two options differ by one item in the table, the question is testing whether that item belongs.
- **In a written part** ("explain the difference between GDP and GNI", "explain why NNI is lower than GNI"), give the definition of each measure (one mark each), then the reason for the gap in context, such as profits sent home by foreign-owned firms or machines wearing out.
- **Calculate** means show the figures you used and give units (such as billion dollars) in written answers.

Quick check

1. GDP at market prices is \$850bn, indirect taxes are \$90bn and subsidies are \$20bn. Calculate GDP at basic prices.

2. A country's GDP is \$400bn. Its residents earn \$30bn abroad and non-residents earn \$45bn in the country. Capital consumption is \$35bn. Calculate its GNI and its NNI.
3. A country's GNI is greater than its GDP. What does this mean?
 - **A** its capital stock has grown during the year
 - **B** its exports are greater than its imports
 - **C** its residents earn more abroad than non-residents earn in the country
 - **D** its subsidies are greater than its indirect taxes
4. Say whether each is included in national income, with a reason: (a) the salary of a teacher in a state school; (b) child benefit paid to parents; (c) rent paid to a landlord; (d) the sale of shares on the stock exchange; (e) painting your own house.
5. GDP at basic prices is \$1200bn and net domestic product at basic prices is \$1080bn. What is capital consumption, and what percentage of GDP is it?

Answers

1. Basic prices = market prices – taxes + subsidies = $850 - 90 + 20 = \$780\text{bn}$.
2. Net primary income from abroad = $30 - 45 = -\$15\text{bn}$, so GNI = $400 - 15 = \$385\text{bn}$, and NNI = $385 - 35 = \$350\text{bn}$.
3. **C.** GNI is GDP plus net income from abroad, so GNI is larger only when that net income is positive. A describes investment, B trade and D the market-to-basic adjustment, none of which separates GDP from GNI.
4. (a) Included: a salary paid for a service produced. (b) Not included: a transfer payment, with nothing produced in return. (c) Included: rent is a factor income. (d) Not included: a financial transaction that only changes who owns the shares. (e) Not included: no market transaction, so nothing is recorded.
5. Capital consumption = $1200 - 1080 = \$120\text{bn}$, which is $\frac{120}{1200} \times 100 = 10\%$ of GDP.

Past questions to try

- **9708/13/M/J/24 Q19**: naming a statistic from how it was built.
- **9708/13/M/J/23 Q21**: from expenditure to net national income.
- **9708/12/F/M/23 Q16**: net national income with a distractor in the table.
- **9708/12/M/J/24 Q19**: what explains the gap between GDP and GNI.