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Today's Agenda

1. Macro economic issues
 1. Economic growth
 2. Business cycle
 3. Unemployment
 4. Inflation
 5. Foreign trade
 6. Financial well being
2. Macro economic policy objectives
3. The circular flow of income model
 1. Closed economy
 2. Open economy
 3. Leakages – withdrawals
 4. Injections
 5. Leakages & injections
4. Equilibrium in the circular flow
5. Measuring national income and output
 1. Some qualifications
6. Measuring GDP
 1. The product approach
 2. The expenditure approach
 3. The income approach
7. Gross National income
 1. Factor income received and sent
8. Net National income
9. Households' disposable income
10. Distinguishing between nominal and real values
11. Taking account of Inflation

Today's Agenda

- 12. Taking account of population
- 13. Taking account of exchange rates
- 14. Problems in the calculation of GDP
- 15. Concept of Social Capital
- 16. The AD-AS Model
 - 1. AD curve slope
 - 2. Shape of the AD Curve
 - 3. The Aggregate supply curve
 - 4. Shape of the SRAS Curve
 - 5. AD – AS model
- 17. Equilibrium
 - 1. Shifts in the AD or SRAS curves
- 18. Growth
 - 1. Actual growth different from Potential growth
 - Impacts
 - 2. Factors that lead to growth in potential output
- 19. The Business cycle
 - 1. Long term output trend
- 20. Business cycle
- 21. Irregular Business cycle
- 22. National and global components
- 23. AD and the business cycle
- 24. Influence of Consumer spending

Today's Agenda

- 25. Influence of investment spending
- 26. Influence of Financial sector
- 27. Aggregate supply and the business cycle

1 Macro economics issues

In macroeconomics we take a much broader view. We examine the economy as a whole. We still examine demand and supply, but now it is the total level of spending in the economy and the total level of production.

Macroeconomics examines various issues affecting whole economies. We will group the issues under the following headings: economic growth, unemployment, inflation, economic relationships with the rest of the world, the financial well-being of individuals, businesses and government and the relationship between the financial system and the economy.

1.1 Economic growth



Economic growth is the term economists use to describe the change in the level of an economy's output from period to period.

The rate of economic growth measures the percentage change in output. This is usually measured over short periods, such as 12 or 3 months. One of the most important observations to make about economic growth is its volatility.

Countries rarely experience stable economic growth; instead, growth rates tend to fluctuate. Understanding the volatility of economic growth and its effects is the focus of much analysis by macroeconomists

1.2 Business cycle

The significance of the volatility of short-term economic growth makes it our next threshold concept. It is the volatility of growth that gives rise to the well-known phenomenon of the business cycle.



The business cycle refers to the fluctuations we observe in the path traced out from period to period in an economy's output level.

Because rates of economic growth affect an economy's output path, the more growth rates vary the more marked are the fluctuations in this path.

1.3 Unemployment

The inherent instability of economies has implications for the number of people in work and so for the number unable to find work. After all, higher levels of economic activity will tend to decrease unemployment numbers, while reduced economic activity will tend to increase them.

Unemployment can be expressed either as a number (e.g. 1.5 million) or as a percentage (e.g. 5 per cent). The most usual definition that economists use for the number unemployed is: those of working age who are without work, but who are available for work at current wage rates.

If the figure is to be expressed as a percentage, then it is a percentage of the total labour force. The labour force is defined as those in employment plus those unemployed.

1.4 Inflation

By inflation we mean a general rise in prices throughout the economy. Government policy here is to keep inflation both low and stable. One of the most important reasons for this is that it will aid the process of economic decision making.

For example, businesses will be able to set prices and wage rates, and make investment decisions with far more confidence. The rate of inflation measures the annual percentage increase in prices.

1.5 Foreign trade

A country's macroeconomic environment is shaped not only by domestic conditions but also by its economic relationships with other countries. These relationships evolve as the global economy develops and the world order changes.



The balance of payments account records all transactions between the residents of that country and the rest of the world.

These transactions enter as either debit items or credit items. The debit items include all payments to other countries: these include the country's purchases of imports, the investments it makes abroad and the interest and dividends paid to people abroad who have invested in the country. The credit items include all receipts from other countries: these include the sales of exports, inflows of investment into the country and earnings of interest and dividends from abroad.

1.5 Foreign trade

If a country starts to spend more foreign currency than it earns, then its balance of payments will go into deficit. If the government does nothing to correct the balance of payments deficit, the exchange rate of the country's currency must fall. The exchange rate is the rate at which one currency exchanges for another.

1.6 Financial well-being

The financial system is an integral part of most economies. Financial markets, financial institutions and financial instruments have become increasingly important in determining the financial well-being of nations, organizations, government and people. The increasing importance of the financial system to economies is known as financialization.

- The importance of financial stability and the problem of financial distress. - It is important for policy makers to ensure the stability of the financial system and the general financial well-being of economic agents.
- Financial accounts - In thinking about financial well-being or distress, three key accounts can be considered.
 1. the income account
 2. the financial account
 3. the capital account
- The national balance sheet - This is a measure of the wealth of a country (i.e. the nation's financial and physical stock of net assets). It shows the composition of a country's wealth and the contribution of each of the main sectors of the economy.

2 Macro - economic policy objectives

From the above issues we can identify a series of macroeconomic policy objectives that governments might typically pursue:

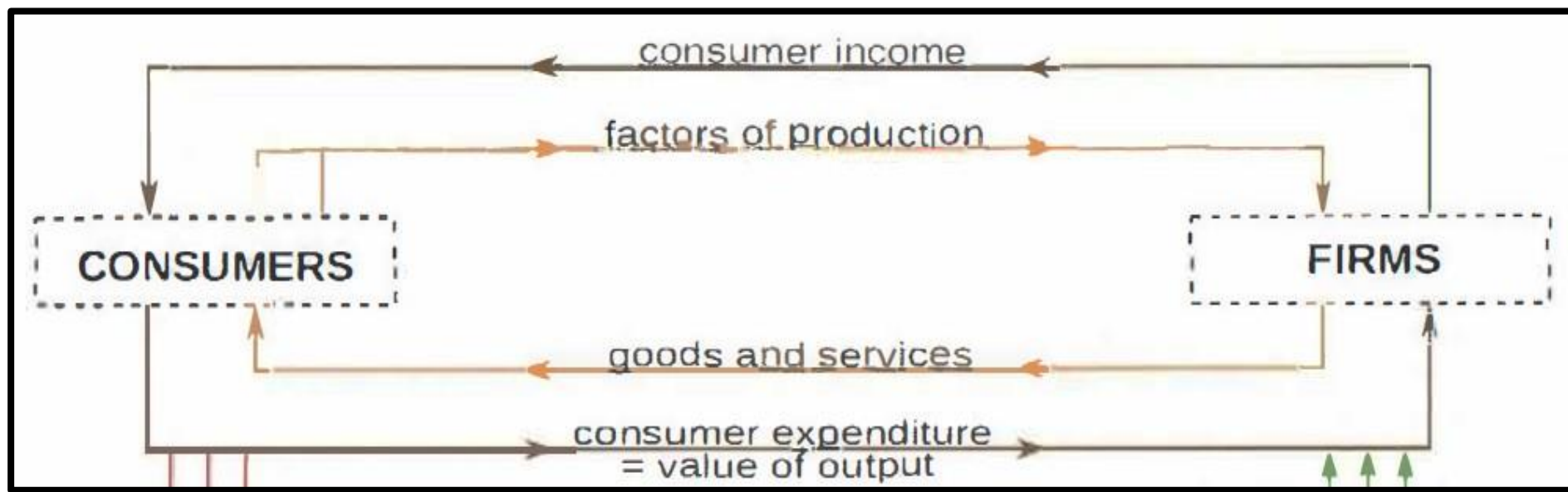
- High and stable economic growth.
- Low unemployment.
- Low inflation.
- The avoidance of balance of payments deficits and excessive exchange rate fluctuations.
- A stable financial system and the avoidance of excessively financially distressed sectors of the economy, including government itself.

3 The Circular flow of Income Model

- The economic choices of people, businesses and organisations can have profound effects for the macro economy.
- One model which allows us to develop an understanding of the impact of these choices for economic growth and which does so by focusing on aggregate demand is the circular flow of income model.
- The **circular flow of income model** provides an **overview of important relationships in the macro economy**.

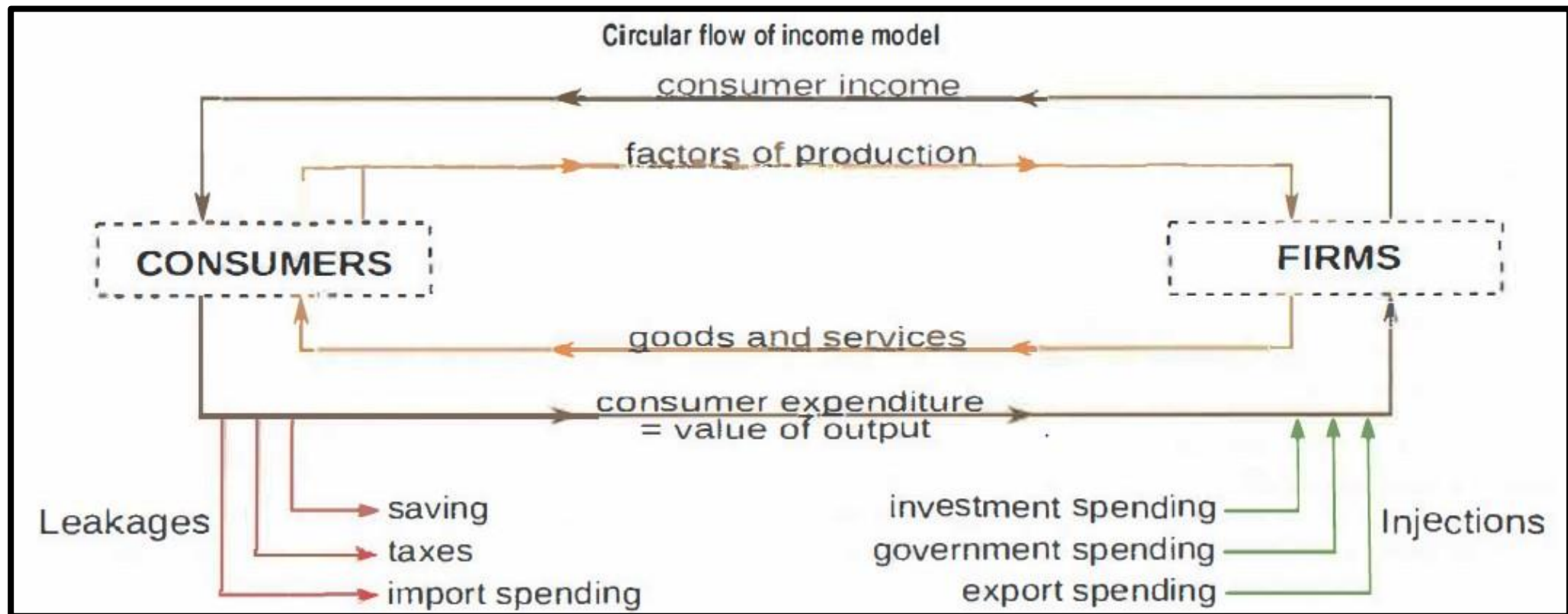
3.1 The Circular flow - Closed economy

The circular flow of income in a closed economy (= no foreign trade) with no government or financial markets is shown by the brown lines below. **Consumers**, who **sell factors of production** to firms, **receive income from firms** (upper brown line), and **spend** all this **income to buy goods and services**; this spending is consumer expenditure, and is equal to the quantity of each good and service bought times its respective price, known as the value of output (lower brown line). **Firms buy the factors of production** from consumers and **use them to produce goods and services**.



3.2 The Circular flow - Open economy

- The circular flow of income in an open economy (= with foreign trade) with government and financial markets includes **leakages (red)** and **injections (green)**.



3.3 Leakages - Withdrawals

Only a part of the incomes received by households will be spent on the goods and services of domestic firms. The remainder will be withdrawn from the flow.

There are three forms of **withdrawals (W)** (or **leakages**):

Net saving (S) –

- **Saving is income** that households **choose not to spend** but to put aside for the future. Savings are normally **deposited in financial institutions** such as banks and building societies. **Money flows from households to 'banks, etc.'**
- What we are seeking to measure here, however, is the **net flow** from households to the banking sector. We therefore have to **subtract from saving any borrowing or drawing on past savings** by households to arrive at the net saving flow.

3.3 Leakages - Withdrawals

Net taxes (T) -

- When people pay **taxes** this **represents a withdrawal of money** from the flow in much the same way as saving; only, in this case, **people have no choice**.
- Some taxes are **paid out of household incomes** (income tax and employees' national insurance contributions). Others, such as VAT and excise duties, are **paid out of consumer expenditure**. Others, such as corporation tax, are **paid out of firms' incomes** before being received by households as dividends on shares
- **Transfer payments** - people **receive benefits from the government**, such as unemployment benefits, child benefit and pensions, the money flows the other way. Benefits are thus equivalent to a '**negative tax**'. These benefits are known as **transfer payments**. They transfer money from one group of people (taxpayers) to others (the recipients).
- In the model, '**net taxes**' (T) represents the *net* flow to the government (central and local) from households and firms. **It consists of total taxes minus benefits**.

3.3 Leakages - Withdrawals

Import expenditure or Import Spending (M) –

- Not all consumption is of totally home-produced goods. **Households spend** some of their incomes **on imported goods and services**, or on goods and services using imported components. This expenditure on imports constitutes the third withdrawal from the inner flow. This **money flows abroad**.

Total Withdrawals -

Total withdrawals are simply the sum of net saving, net taxes and the expenditure on imports:

$$W = S + T + M$$

3.4 Injections (J)

Only a part of the demand for firms' output arises from consumers' expenditure. The remainder comes from other sources outside the inner flow. These additional components of aggregate demand are known as ***injections (J)***.

There are three types of injection.

Investment (I) -

- This is the money that firms spend after obtaining it from various financial institutions – either past savings or loans, or through a new issue of shares.
- They may **invest in plant and equipment** or may simply spend the money on **building up stocks of inputs, semi-finished or finished goods**.

3.4 Injections (J)

Government purchases or Government spending (G) –

- When the government spends money on goods and services produced by firms, this counts as an injection. Examples of such government expenditure include spending on roads, hospitals and schools.

Export expenditure (X) –

- Money flows into the circular flow from abroad when residents abroad buy our exports of goods and services.

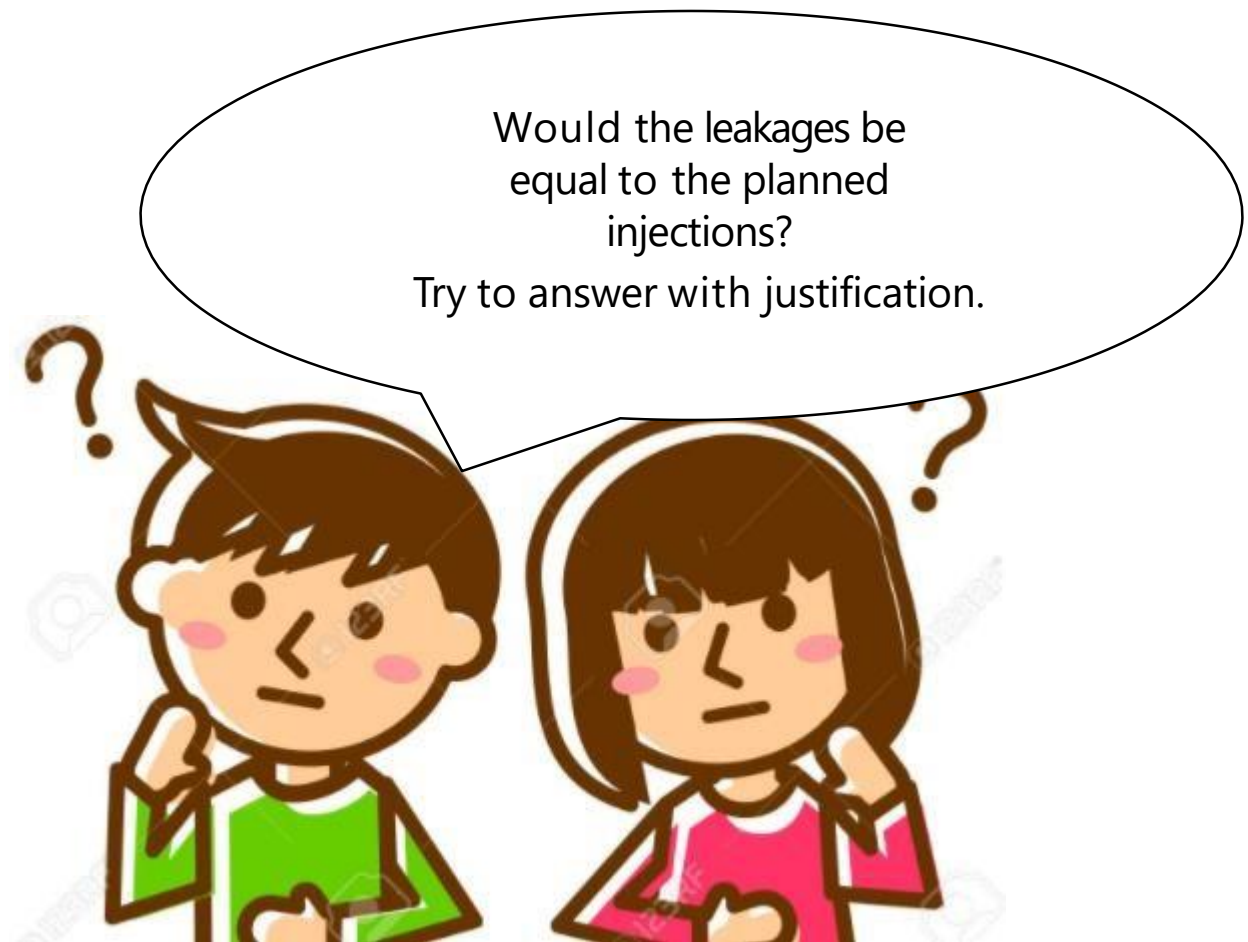
Total injections

Total injections are thus the sum of investment, government expenditure and exports:

$$J = I + G + X$$

3.5 Leakages and Injections - Relationship

There are indirect links between saving and investment, taxation and government expenditure, and imports and exports.



3.5 Leakages and Injections - Relationship

A major point here is that the **decisions to save and invest are made by different people**, and thus they plan to **save and invest different amounts**. Likewise the **demand for imports may not equal the demand for exports**. As far as the government is concerned, it may **choose not to make $T = G$** . It may choose not to spend all its tax revenues: to run a '**budget surplus**' ($T > G$).

Or it may choose to spend more than it receives in taxes – to run a **budget deficit ($G < T$)** – by borrowing or printing money to make up the difference.

Thus planned injections (J) may not equal planned withdrawals (W).

- If the sum of injections $>$ the sum of leakages then circular flow grows bigger, production of goods and services $\uparrow$, income $\uparrow$, the economy grows, unemployment $\downarrow$.
- If the sum of injections $<$ the sum of leakages then circular flow shrinks, production of goods and services $\downarrow$, income $\downarrow$, the economy is in recession, unemployment $\uparrow$.

4 Equilibrium in the circular flow

- If planned **injections do not equal planned withdrawals**, **aggregate demand will change** and so **too will national income**.
- Take the case where **injections exceed withdrawals**. As we have seen, the excess of injections over withdrawals will lead to a **rise in national income**. But as national income rises, so **households will not only spend more on domestic goods**, but also **save more, pay more taxes** and **buy more imports**. In other words, **withdrawals will rise too**. This will **continue until** they have **risen to equal injections**. At that point, **national income will stop rising**, and so will withdrawals. **Equilibrium has been reached**.
- Thus equilibrium is where: **$W = J$**
- Similarly, if withdrawals exceed injections, the resulting fall in national income will lead to a fall in withdrawals.
- Again, this will continue until **$W = J$** .

5 Measuring national income and output



How do we measure national income or output?

The measure we use is called gross domestic product (GDP).

- **Gross domestic product (GDP)** = The value of output produced within the country over a 12-month period.
- **Gross value added at basic prices (GVA)** The sum of all the values added by all industries in the economy over a year. The figures exclude taxes on products (such as VAT) and include subsidies on products

5.1 Some qualifications

Stock (or inventory) appreciation - A problem concerned with stocks is that they may increase in value simply due to increased prices. This is known as ***stock appreciation***. Since there has been no real increase in output, stock appreciation must be deducted from value added.

Government services (e.g. health and education) should be valued in terms of what they cost to provide .

Taxes and subsidies on products - Taxes paid on goods and services (such as VAT) and any subsidies on products are excluded from gross value added (GVA), since they are not part of the value added in production. Nevertheless GDP is measured mostly at market prices: i.e. at the prices actually paid at each stage of production.

GDP (at market prices) The value of output (or income or expenditure) in terms of the prices actually paid.

GDP = GVA + taxes on products - subsidies on products

6 Measuring GDP

Economic activity is measured by use of GDP figures. These measures are important for:

- understanding how an economy's output and income change (grow or shrink) over time
- making comparisons with other economies/countries, and
- formulating policies to achieve important economic objectives (ex low unemployment, low and stable rate of inflation)

We can understand the ways to measure GDP if you remember **that income flow = expenditure flow = value of output flow** .

All three approaches lead to the same results after adjustments for statistical errors.

6.1 Measuring GDP by the product approach

This method **adds up the value of each good and service ($P \times Q$) produced in the economy** within a year, thus obtaining the value of all final goods and services, which is equal to GDP.

The value of goods and services is calculated for each sector in the economy, such as:

- goods in the agricultural sector
- goods in the manufacturing sector
- services in the health, education and finance sector.

This approach allows comparisons of the relative contribution of each sector to GDP.

6.2 Measuring GDP by the expenditure approach

This method adds up total spending to buy all final goods and services within a year. There are four components of spending:

- **Consumption spending (C)** = All spending by consumers to buy goods and services.
- **Investment spending (I)** = All spending by firms to buy capital goods plus all private construction
- **Government spending (G)** = All spending by the government, including labour costs and infrastructure (road, airports, ports, etc.)
- **Net exports (X-M) = exports (X) - imports (M)** = All spending by foreigners to buy exports minus all spending by domestic consumers to buy imports



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

This approach allows comparisons of the relative contribution of C, I, G, and X -M to GDP

6.3 Measuring GDP by the income approach

This method adds up all income earned by the four factors of production in the course of producing total output within a year. Since GDP is the sum of all expenditures, it must also be the sum of all incomes generated.

1) **Rent** earned by land, 2) **Wages** earned by labour, 3) **Interest** earned by capital, 4) **Profit** earned by entrepreneurship

Thus : **Rent + wages + interest + profit = GDP at basic prices**

GDP at market prices is: = GDP at basic prices + taxes on products - subsidies on products

This approach allows comparisons of the relative income shares of factors of production (ex labour's share) and contributions of these to national income (and hence to GDP).

7 Gross national income

We move from GDP to national income

Some of the incomes earned in this country will go abroad. On the other hand, some of the incomes earned by domestic residents will come from abroad.

Gross domestic product, is concerned only with incomes generated within the country, irrespective of ownership. If, then, we are to take 'net income from abroad' into account (i.e. these inflows minus outflows), we need a new measure. This is **gross national income (GNY)**.

It is defined as follows:

GNY at market prices = GDP at market prices + Net income from abroad

7.1 Factor income received and sent

Factor income received from abroad is likely to Include	Factor Income sent abroad is likely to include
- income received by domestic residents sent to them by relatives working abroad (known as remittances) - profits of multinational corporations (also a form of income) earned abroad and sent home (known as profit repatriation)	- wages of foreign workers working domestically sent to their relatives back home (remittances) - profits of foreign multinational corporations operating domestically sent back to their home country (profit repatriation)

- Gross national income (GNI)** = the total income received by the residents of a country in a year, regardless where the factors of production owned by the residents are located

8 Net national income

The measures we have used so far ignore the fact that each year some of the country's capital equipment wears out or becomes obsolete: in other words, they ignore capital depreciation.

Depreciation = The decline in value of capital equipment due to age, or wear and tear.

If we subtract from gross national income an allowance for **depreciation** (or 'capital consumption' as it is called in the official statistics), we get **net national income (NNY)**.

NNY at market prices = GNY at market prices - Depreciation



Question

The following information is extracted from a country's National Statistical Bureau:

	<i>€ billions</i>
Wages and salaries	350
Mixed incomes	38
Net income from abroad	15
Gross profit/rent and interest of firms, government and other institutions	150
Taxes on products	71
Subsidies on products	3
Depreciation	65

- Calculate Gross National Income at market prices.
- Calculate the Net National Income at market prices.

Solution

(ii) *GNY at market prices*

GNY at market prices is:

= GDP at market prices + net income from abroad

= 606 + 15 = 621

Therefore, GNY at market prices is €621 billion.

(iii) *NNY at market prices*

NNY at market prices is:

= GNY at market prices – depreciation

= 621 – 65 = 556

Therefore, NNY at market prices is €556 billion.

9 Households' disposable income

Finally, we come to a measure that is useful for analysing consumer behaviour. This is called **households' disposable income**. It is the income **available for households to spend**: i.e. personal incomes after deducting taxes on incomes and adding benefits.

How do we get from GNY at market prices to households' disposable income?

From GNY we must deduct that part of their **income that is not distributed to households**.

This means that we must **deduct taxes** that firms pay and **add in any subsidies** they receive. We must then **subtract allowances for depreciation and any undistributed profits**. This gives us the gross income that households receive from firms. We must **subtract the money that households pay in income taxes** and national insurance contributions, but **add all benefits to households**, such as pensions and child benefit: in other words, **we must include transfer payments**.

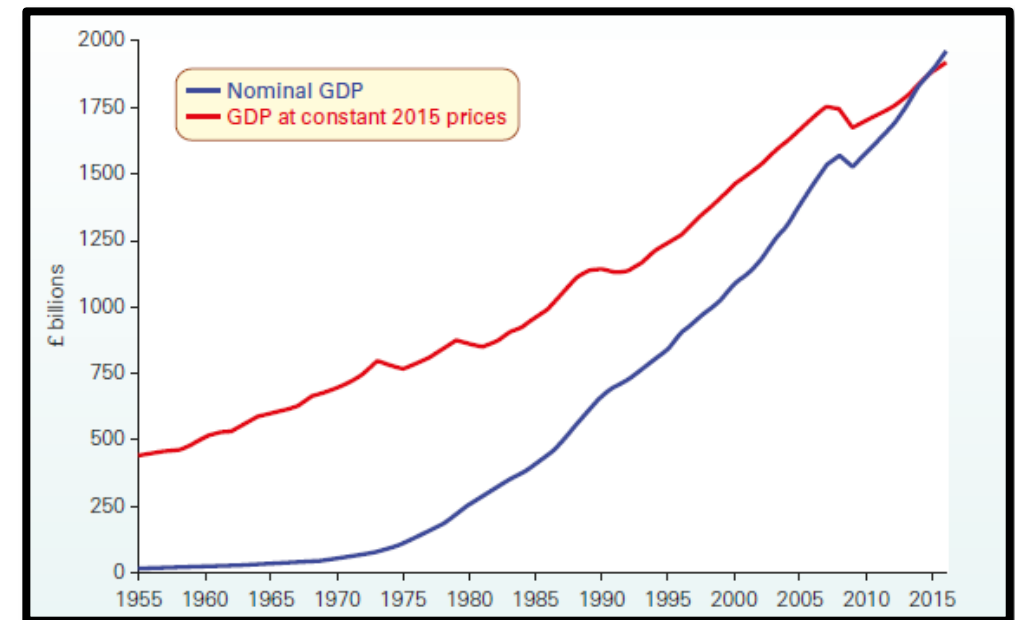
Household's disposable income = GNY at market prices - Taxes paid by firms + Subsidies received by firms - Depreciation - Undistributed profits - Personal taxes + Benefits

10 Distinguishing between nominal and real values

- **Nominal GDP** are measures of output and income in terms of **current prices** (prices prevailing at any given moment).
- **Real GDP** are measures of output and income in terms of **constant prices** that prevail in one particular year; therefore real values eliminate the influence of price level changes over time.
- **Real values must always be used to make comparisons over time**, in order to get a more accurate picture of changes in output and income without the influence of price changes.

11 Taking account of inflation

- If we are to make a sensible comparison of one year's national income with another, we must take inflation into account. An important distinction which helps here is between **nominal GDP** and **real GDP**.
- **Nominal values** take **no account for inflation**. **Real values** measures GDP in the **prices** that ruled in **some particular year – the base year**.
- It would **eliminate increases in money GDP** that were merely due to an increase in prices. The real figures **show the variability of economic growth** from year to year.



12

Taking account of population: the use of per capita measures

- Total GDP and GNI provide an indication of the size of an economy. We are also often more interested in output or income per head. This is done through per capita measures.
- Per capita GDP provides an indication of the amount of output corresponding to each person in the population on average.
- $\text{GDP per capita} = \frac{\text{Total GDP}}{\text{Population}}$
- Per capita GNY provides an indication of how much income is received by each person in the population on average and is therefore a better indicator of standards of living.
- $\text{GNY per capita} = \frac{\text{Total GNY}}{\text{Population}}$

13

Taking account of exchange rates: the use of PPP measures

- There is a big problem with comparing GDP figures of different countries. They are measured in the local currency and thus have to be converted into a common currency at the current exchange rate. But the exchange rate may be a poor indicator of the purchasing power of the currency at home.
- To compensate for this, GDP can be converted into a common currency at a **purchasing- power parity rate**.
- **PPP exchange rate** - An exchange rate corrected to take into account the purchasing power of a currency. \$1 would buy the same in each country after conversion into its currency at the PPP rate.
(https://www.youtube.com/watch?v=WpJbVitlInM&t=708s&ab_channel=MarginalRevolution University)
- **Purchasing-power standard (PPS) GDP** - GDP measured at a country's PPP exchange rate.

14 Problems in the calculation of GDP

When we come to ask the more general question of whether the figures give a good indication of the welfare or happiness of the country's citizens, then there are serious problems in relying exclusively on GDP statistics.

Problems of measuring national output

1. Non-marketed items and services - (eg **do-it-yourself** decorating, childcare) do not enter into the GDP calculations, so if there is an increase in the employment of specialists, such as decorators and nursery nurses, the rise in GDP will overstate the increase in output.

2. The 'underground' or 'shadow' economy. - The underground economy consists of **illegal and hence undeclared transactions**. Alternatively, they could be transactions that are illegal only in that they are **not declared for tax purposes**. This might cause GDP to underestimate the standard of living.

14 Problems in the calculation of GDP

Problems of using GDP statistics to measure welfare

3. Production does not equal consumption - The proportion of the growth of GDP that is made up of consumption is important because this reflects the extent to which growth is improving current living standards. If the **increase in GDP arises from an increase in investment or exports**, this will **not benefit current consumers** (though investment will improve future living standards).

4. Production has human costs - If production increases, this may be due to technological advance. If, however, it **increases as a result of people having to work harder or longer hours, its net benefit will be less**. Leisure is a desirable good, and so too are pleasant working conditions, but these items are not included in the GDP figures.

5. GDP ignores externalities - The rapid growth in industrial society is recorded in GDP statistics. What **the statistics do not record are the environmental side effects**. If these external costs were taken into account, the net benefits of industrial production might be much less.

14 Problems in the calculation of GDP

6. The production of certain 'bads' leads to an increase in GDP – Some of the **undesirable effects of growth** may in fact increase GDP! Take the examples of crime, stress-related illness etc. But increased crime leads to more expenditure on security; increased stress leads to more expenditure on health care; and increased environmental damage leads to more expenditure on environmental clean-up. These expenditures add to GDP. Thus, rather than reducing GDP, crime, stress and environmental damage actually increase it.

7. Total GDP figures ignore the distribution of income - If **some people gain** and **others lose**, we cannot say that there has been an unambiguous increase in welfare. A typical feature of many rapidly growing countries is that some people grow very rich while others are left behind. The result is a growing inequality. If **this is seen as undesirable, then clearly total GDP statistics are an inadequate measure of welfare.**

15 Concept of Social Capital

- **Social capital (OECD definition)** Networks, together with shared norms, values and understandings, that facilitate co-operation within or among groups.
- Social capital captures social connections and networks which affect the cohesiveness of societies. Our social connections, whether through relationships with family and friends, local communities or wider society, help to bind societies together.



Question

Subject CT7 April 2009 Question 27

1. Calculate the nominal GDP (at basic prices) of an economy, using the information contained in the table below.

<i>Item</i>	<i>£m</i>
Wages and salaries	900,000
Consumption expenditure	640,000
Mixed income	90,000
Government transfer payments	50,000
Investment	400,000
Government purchases of goods and services	240,000
Export earnings	300,000
Depreciation	240,000
Import payments	220,000
Taxation	210,000

16 The AD-AS Model

To understand economic fluctuations more fully we need to analyse the interaction between aggregate demand and aggregate supply.

The aggregate demand curve - The aggregate demand curve shows how much national output (GDP) will be demanded at each level of prices

Aggregate demand consists of four elements: consumer spending (C), private investment (I), government expenditure on goods and services (G) and expenditure on exports (X) less expenditure on imports (M).



$$AD = C + I + G + X - M$$

We plot quantity on the horizontal axis, except that now it is the *total quantity of national output*, (real) GDP; and we plot price on the vertical axis, except that now it is the *general price level*.

Because the general price level relates to the prices of all domestically produced goods and services it is also known as the **GDP deflator**

16.1 AD curve slope

But **why does the AD curve slope downwards?** Why will people demand less as prices rise? There are two effects that can cause this: **income effects and substitution effects.**

Income effects

- For many people, when prices rise, their wages will not rise in line, at least not in the short run. There will therefore tend to be a redistribution of income away from wage earners (and hence consumers) to those charging the higher prices – namely, firms. Thus for consumers there has been an income effect of the higher prices.
- The rise in prices leads to a cut in real incomes and therefore people will spend less. Aggregate demand will fall. The AD curve will be downward sloping.

16.1 AD curve slope

Substitution effects

At a macroeconomic level we can identify three main reasons why people will demand fewer products as prices.

- **International substitution effect** - As prices rise, people at home and abroad buy less of this country's products and more of products from abroad.
- **Inter-temporal substitution effect** - Higher prices may lead to higher interest rates and thus less borrowing and more saving. Current consumption falls; future consumption (from the higher savings) rises.
- **Real balance effect** - As the price level rises, so the value of people's money balances will fall. They will therefore spend less in order to increase their money balances and go some way to protecting their real value.

16.2 Shape of the AD Curve

- We have seen that both the income and substitution effects of a rise in the general price level will cause the aggregate demand for goods and services to fall. Thus the *AD* curve is downward sloping.
- The bigger the income and substitution effects, the more elastic will the curve be.

16.3 The aggregate supply curve

- The aggregate supply (AS) curve shows the amount of goods and services that firms are willing to supply at each level of prices. We focus here on the *short-run AS* curve (SRAS curve).
- When constructing this curve, **we assume that various other things remain constant**. These include wage rates and other input prices, technology and the total supply of factors of production (labour, land and capital).
- The **short-run aggregate supply curve slopes upwards**. In other words, the higher the level of prices, the more will be produced. The **reason is simple**. Because we are holding **wages and other input prices constant**, then **as the prices of their products rise**, firms' **profitability at each level of output will be higher than before**. This will **encourage them to produce more**.

16.4 Shape of the SRAS Curve

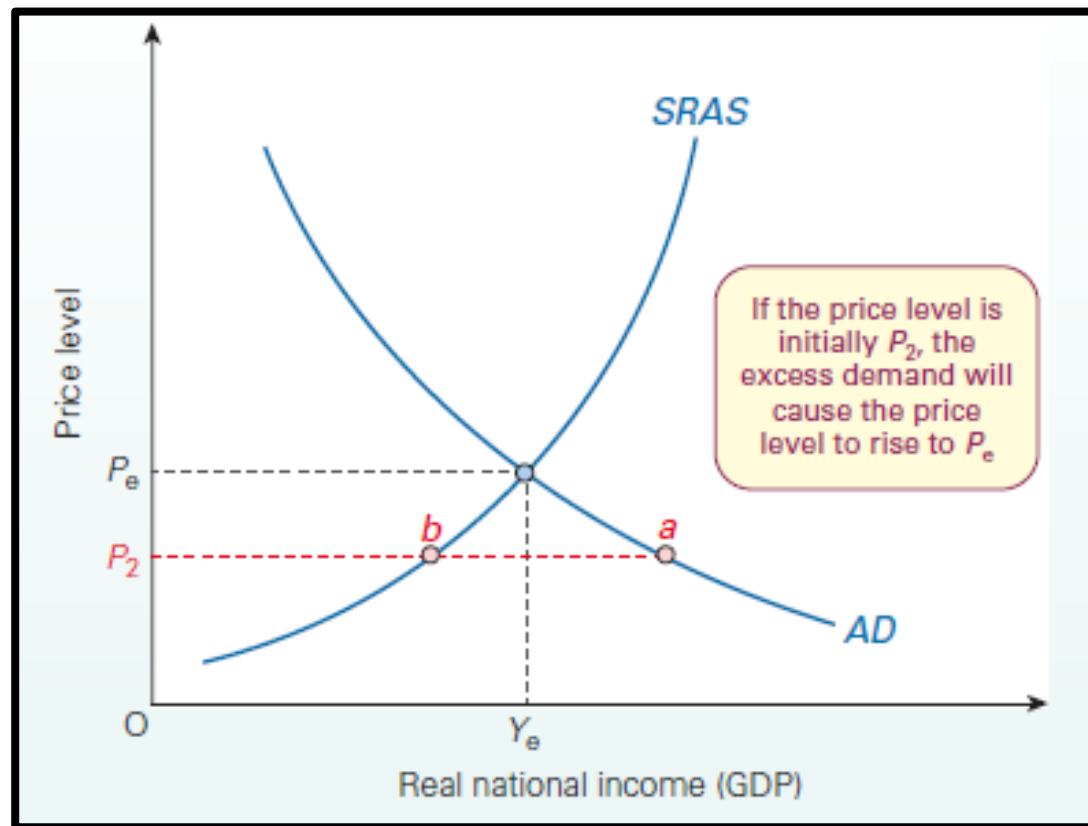
The **SRAS curve is upward sloping**. The two main reasons are:

- **Diminishing returns.** - With some factors of production fixed in supply, notably capital equipment, firms experience a diminishing marginal physical product from their other factors, and hence have an upward-sloping marginal cost curve. Here in macroeconomics we are adding (horizontally) the supply curves of all goods and services and thus the aggregate supply curve also slopes upward.
- **Growing shortages of certain variable factors** - As firms collectively produce more, even inputs that can be varied may increasingly become in short supply. Skilled labour may be harder to find, and certain raw materials may be harder to obtain.

Thus **rising costs explain the upward-sloping short-run aggregate supply curve**. The more steeply costs rise as production increases, the less elastic will the aggregate supply curve be.

16.5 The AD-AS Model

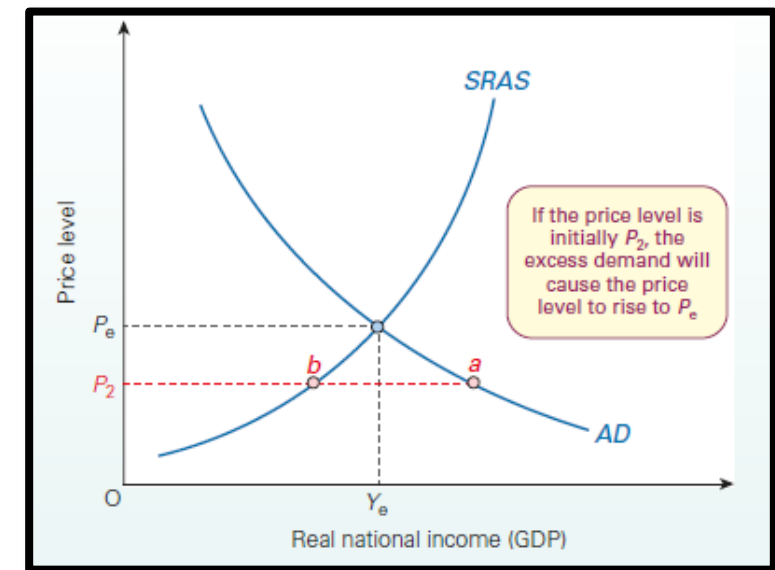
Thus we diagrammatically represent the model as:



17 Equilibrium

Equilibrium in the macro economy occurs **when aggregate demand and aggregate supply are equal**. In the figure above, this is at the price level P_e and national income (GDP) of Y_e .

- To demonstrate this, consider what would happen if aggregate demand exceeded aggregate supply: for example, at P_2 in the figure. The resulting shortages throughout the economy would drive up prices. This would encourage firms to produce more: there would be a movement up along the AS curve.
- At the same time, the increase in prices would reduce the level of aggregate demand: that is, there would also be a movement back up along the AD curve. The shortage would be eliminated when price had risen to P_e .



17.1 Shifts in the AD or SRAS curves

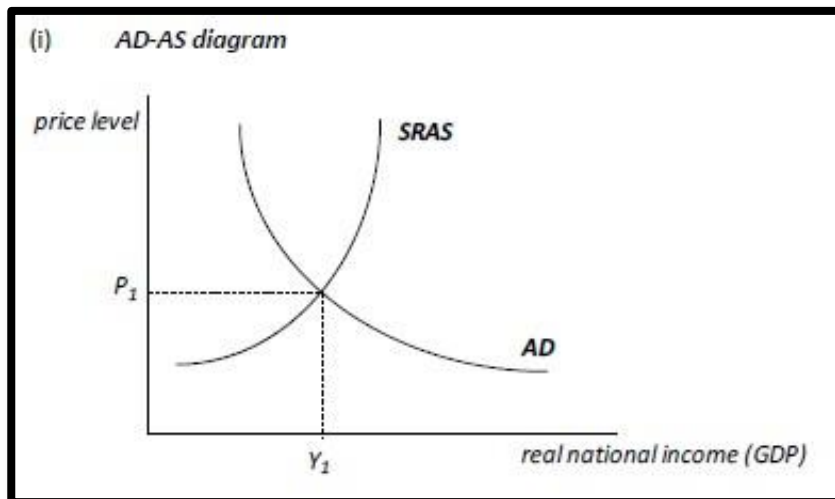
- If the **AD or SRAS curve shifts**, there will be a movement along the other curve to the **new point of equilibrium**.
- For example, if there is a **cut in income taxes** and a corresponding increase in consumer demand, the **AD curve will shift to the right**. This will result in a **movement up along the SRAS curve** to the **new equilibrium** point: in other words, to a **new higher level of national income and a higher price level**.
- The more elastic the SRAS curve, the more will output rise relative to prices.



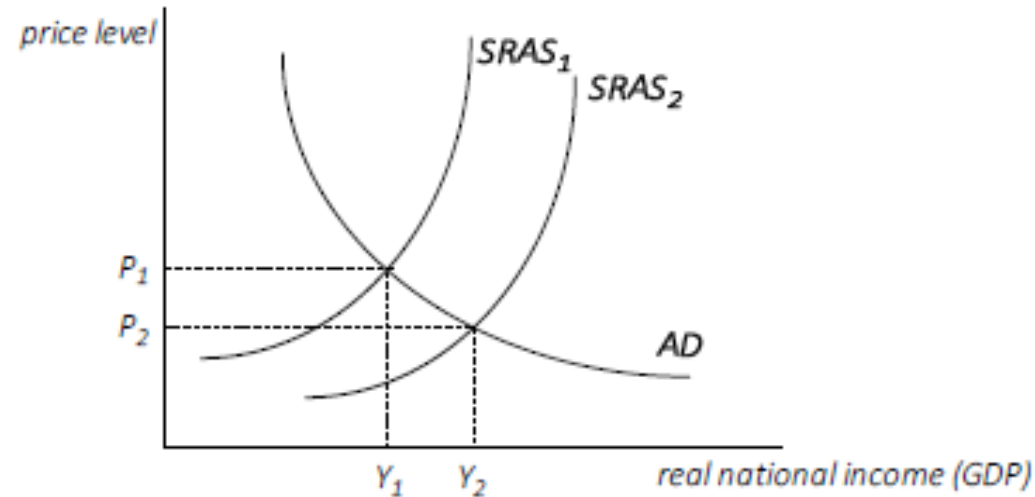
Question

- (i) Draw and appropriately label an aggregate demand – aggregate supply diagram.
- (ii) (a) Show the impact of a positive supply shock on the market.
(b) Explain your diagram.

Solution



(ii) Effect of a positive supply-side shock



We start from an equilibrium position at (P_1, Y_1) . A positive supply shock, eg the immigration of labour, will increase the supply of labour and reduce costs, so the SRAS curve will shift to the right. As the price level decreases, aggregate demand extends, ie there will be a movement along the AD curve from left to right. The new equilibrium position is at (P_2, Y_2) , ie the price level is lower and real national income is higher than before the shock.

[2]

18 Growth

Economies are volatile as evidenced by the volatility of growth.

- **Actual growth** The percentage increase in national output actually produced.
- **Potential growth** The percentage increase in the capacity of the economy to produce.
- **Potential output** The sustainable level of output that could be produced in the economy: i.e. one that involves a 'normal' level of capacity utilisation and does not result in rising inflation.
- **Output gap** The difference between actual and potential output. When actual output exceeds potential output, the gap is positive. When actual output is less than potential output, the gap is negative.
- **Full-capacity output** It is the absolute maximum that could be produced with firms working flat out.

18.1

Actual growth different from Potential growth - Impacts

- Assume that the **actual growth rate is less than the potential growth rate**. This will lead to an **increase in spare capacity** and probably an **increase in unemployment**. In turn, **the output gap will become less positive** or perhaps more negative, depending on the economy's starting point.
- In contrast, if the **actual growth rate were to exceed the potential growth rate**, there would be a **reduction in spare capacity** and the **output gap would become less negative** or more positive. However, periods when actual growth exceeds potential growth can only be temporary.
- In the **long run, the actual growth rate will be limited to the potential growth rate**.

18.2 Factors that lead to growth in potential output

It is worth briefly considering the principal factors that contribute to potential economic growth and output

- First, there is the issue of **quantity**. An increase in resources, whether they are natural resources, labour or capital, enables the economy's potential output to increase.
- Second, there is the issue of the **effectiveness or productivity of resources**. An increase in the effectiveness of the resources used, perhaps through advances in technology, improved labour skills or improved organisation, also enables growth in potential output

19 The business cycle

We consider a hypothetical business cycle. While it is a stylised representation of the practical business cycle, it is useful for illustrating four identifiable 'phases' of the cycle.

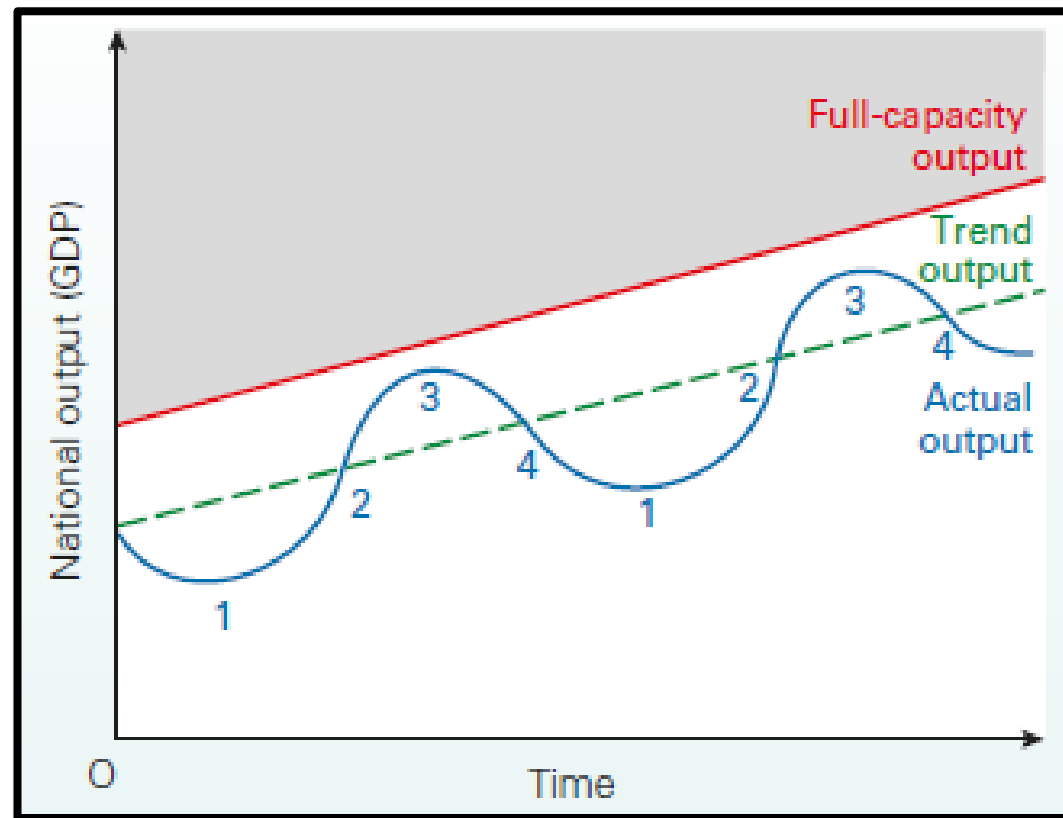
- 1. The upturn.** In this phase, a contracting or stagnant economy begins to recover, and growth in actual output resumes, or begins to accelerate.
- 2. The expansion.** During this phase, there is rapid economic growth: the economy is booming. A fuller use is made of resources, and the gap between actual and potential output narrows.
- 3. The peaking out.** During this phase, growth slows down or even ceases.
- 4. The slowdown,** recession or slump. During this phase, there is little or no growth or even a decline in output. Increasing slack develops in the economy. The economy is operating with a negative output gap.

19.1 Long-term output trend

- A line can be drawn showing the **trend of national output over time** (i.e. ignoring the cyclical fluctuations around the trend).
- If, over time, firms on average operate with a 'normal' degree of capacity utilisation (a zero output gap), the trend output line will be the same as the potential output line.
- In other words, **the trend (or potential) rate of growth will be the same as the rate of growth of capacity.**
- If, however, the level of unutilised capacity changes from one cycle to another, then the trend line will have a different slope from the full-capacity output

20 The business cycle

The hypothetical business cycle.



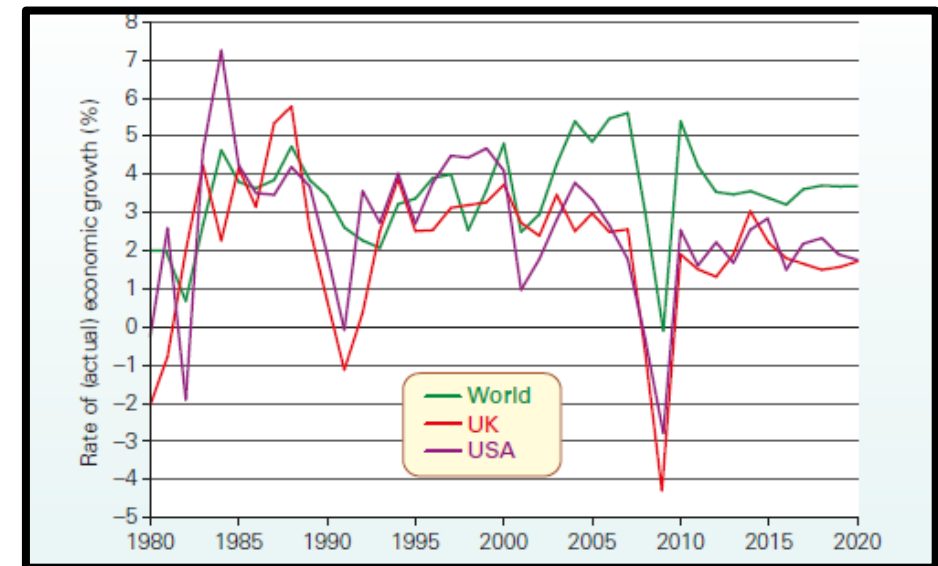
21 Irregular business cycle

The hypothetical business cycle is nice and smooth and regular. In practice, however, business cycles are highly irregular. They are irregular in two important ways:

- **The length of the phases.** Some booms are short-lived, lasting only a few months or so. Others are much longer, lasting perhaps several years. Likewise some recessions are short while others are long.
- **The magnitude of the phases.** Sometimes in phase 2 there is a very high rate of economic growth, perhaps 4 per cent per annum or more. On other occasions in phase 2 growth is much gentler. Sometimes in phase 4 there is a recession, with an actual decline in output, as occurred in 2008–9. On other occasions, phase 4 is merely a 'pause', with growth simply being low.

22 National and global components

- All countries tend to experience business cycles. Typically the timing is similar from one country to another. In other words, there is an international business cycle. Examples shown in the figure below.
- The global economic volatility is mirrored, at least in part, by the economic volatility in different countries.
- More generally, this suggests that countries' business cycles have both a national and a global component.
- With increased global economic ties, many countries have seen the global component increase in its relative importance



23 AD and the business cycle

The focus of much of the analysis of business cycles is on fluctuations in **aggregate demand** (AD). This is the total spending on goods and services made within the country ('domestically produced goods and services').

Thus

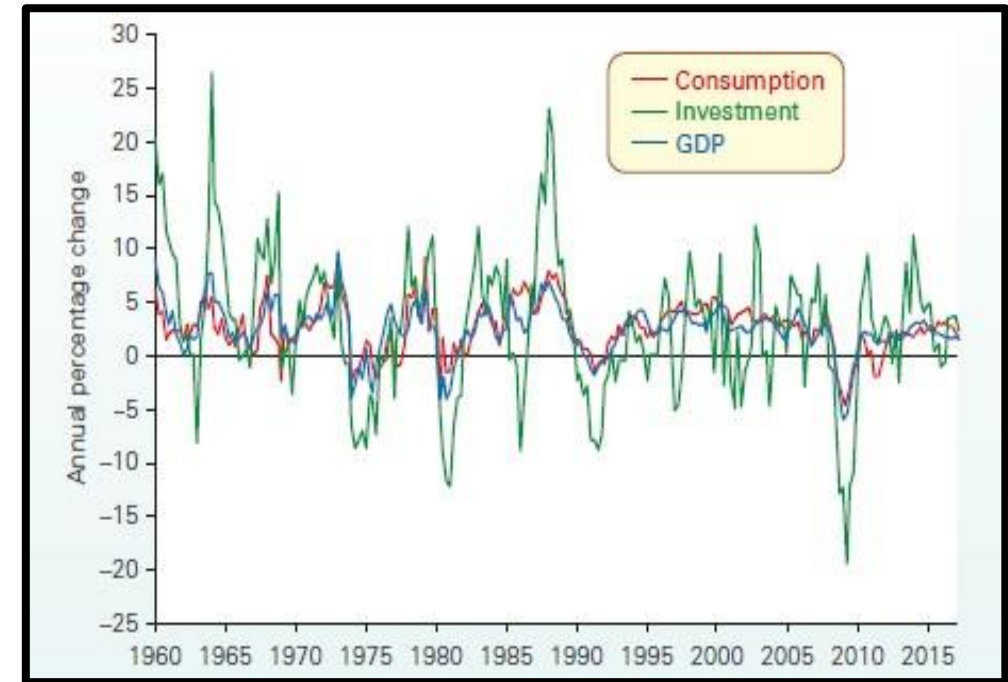
$$AD = C + I + G + X - M$$

Periods of rapid growth are associated with **periods of rapid expansion of aggregate demand**.

Periods of recession are associated with a **decline in aggregate demand**.

24 Influence of consumer spending

- When analysing the role played by the **private sector as a source of economic volatility**, it makes sense to begin by looking at consumer spending.
- This is because, by value, it is the **largest expenditure component of aggregate demand**. This means that even **small fluctuations** in consumer expenditure **can be significant** for aggregate demand which in turn affects the business cycles.



25 Influence of investment spending

- Another component of aggregate demand **is investment**. It appears then that **the volatility of investment** is one of the factors contributing to the **ups and downs of the business cycle**.
- The argument here is that **investment decisions are affected by the growth in national income**. Rising national income may encourage firms to invest to meet increasing demand. But this also has the effect of increasing aggregate demand, which further boosts national income. Thus amplifying positive economic growth.

26 Influence of financial sector

- Given the financial crisis of the late 2000s, the interest in the **role that the financial sector** might play **in affecting the business cycle is unsurprising**. Some economists argue that the financial sector is a major source of economic volatility.
- Some say that the behaviour of **financial institutions through their lending and investments generates unsustainable economic growth** which inevitably ends with an economic downturn.
- Other economists argue that the **financial sector amplifies economic shocks**. The argument here is not that financial institutions are the source of fluctuations in economic growth but rather that **they magnify the shocks that affect the economy**. They can do this by **boosting lending when growth is strong** or **reducing lending when growth is weak**.

27 Aggregate supply and the business cycle

- Economists recognise that fluctuations in **aggregate supply** can also **cause fluctuations in output**.
- Sudden **sharp changes to input prices**, such as in the price of oil, can be one such cause.
- Some argue that **aggregate supply shocks affect the economy's potential output**. Consequently, the business cycle is the result of fluctuations in potential output, which in turn affect actual output.
- They argue that economies are frequently affected by **supply shocks**, many of which might be described as 'technological shocks'. As well as **changes to input prices**, these could include **changes to production methods, the regulatory climate or the political environment**. These shocks affect production processes and levels of productivity. Some of these **affect potential output positively, some negatively**.

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