

INTERNATIONAL ADVANCED LEVEL

ECONOMICS

GETTING STARTED GUIDE

Pearson Edexcel International Advanced Subsidiary in Economics (XEC11)

Pearson Edexcel International Advanced Level in Economics (YEC11)

First teaching September 2018

First examination from January 2019

First certification from August 2019 (International Advanced Subsidiary) and August 2020 (International Advanced Level)



International Advanced Level Economics Getting Started Guide

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Getting Started Guide for Teachers

1. Introduction

This Getting Started guide will give you an overview of the International Advanced Level (IAL) in Economics qualification and what it means for you and your students. This guidance is intended to help you plan the course in outline and give you further insight into the principles behind the content to help you and your students succeed.

1.1 Key principles

The specification has been developed with the following key principles:

Clear specification

Clear guidance on what students need to learn, providing clarity for planning, teaching and assessment. A review of other curricula and qualifications was undertaken to ensure that it is comparable with those taken in high-performing jurisdictions internationally. Key stakeholders were consulted on content and assessment, including higher education academics, teachers and employers to ensure this qualification is suitable for an international context.

Progression, not repetition

The specification allows the development of understanding while at the same time avoiding repetition, ensuring students are engaged and thereby inspired to develop their knowledge.

Reflect today's global world

The International Advanced Level in Economics specification develops an understanding of current developments in Economics. You will in the sample assessment material notice that a range of global contexts have been used to assess students. In teaching this unit it is helpful for candidates to explore today's global world to best prepare students for the assessment in this unit.

Clear assessments

Clear and consistent use of command words across assessments and between series. Our approach to assessments, definitions for the command words and details of how the command words are explained can be found in the glossary.

Clear mark schemes

The new mark schemes provide a consistent understanding of the skills, and connections between these skills, required for each question type. Clear wording reflects how teachers and examiners describe the qualities of student work, so the expectations are clear for teachers and markers.

Skills for progression

The variety of content that will be found in the examination allows the student to demonstrate knowledge as well as its application, which are required elements for further study or progression into employment.

1.2 Support for the new specification

Our package of support to help you plan and implement the new specification includes:

Getting Ready to Teach events – We will provide Getting Ready to Teach events, delivered by subject specialists, ahead of the first teaching in September 2018. This training event will outline all the requirements for teaching and learning in the new specification to support teachers to deliver their teaching with confidence.

Planning – In this guide, we have provided a course planner that you can adapt to suit your department.

Teaching and learning – To support you in delivering the new specification, we will be providing suggested resource lists and suggested activities.

Understanding the standard – Sample Assessment Materials will be provided.

Tracking learner progress – Results Plus provides the most detailed analysis available of your students' exam performance. It can help you identify topics and skills where students could benefit from further learning.

Subject Advisor service – Our subject advisor service, and online community will ensure you receive help and guidance from us as well as enabling you to share ideas and information with each other. You can sign up to receive e-newsletters from the subject advisor to keep up to date with qualification updates, and product and service news.

Our subject advisor, Colin Leith, can be contacted with any questions in the following ways:

- E-mail: TeachingEconomics@pearson.com
- Phone: Intl: + 44 (0)20 7010 2182

Centres may find it beneficial to review this document in conjunction with:

- International Advanced Level Economics Sample Assessment Materials
- Assessment Objective descriptors in the International Advanced Level Economics specification (page 51)
- Quantitative skills in Appendix 7 of the specification for International Advanced Level Economics (page 69)
- Taxonomy (command words) descriptors in Appendix 6 of the specification for International Advanced Level Economics (page 68)
- Levels based mark band guidance in the Sample Assessment Materials.

2. Qualification overview

This section provides an overview of the course to help you see what you will need to teach. The overview gives a general summary of each of the examined papers.

2.1 Changes to specification

In this IAL specification students are introduced to core economic concepts and principles and develop an understanding of microeconomic and macroeconomic issues, before building on this core knowledge and understanding to consider more complex issues and wider contexts. In this thematic approach, progression is continuous as students develop their knowledge and understanding throughout the course of study.

Students use economic models to help them understand the complexities of the world around them, and use data to help them analyse markets and economies, and how governments try to influence both. Students are introduced to different perspectives and develop an understanding of economic issues.

In developing the 2018 specification we have retained the strengths of the 2013 specification:

- engaging and updated content
- development economics
- global focus
- AS and A level courses designed to allow co-teachability.

The specification content has changed to provide more detail about what students need to learn.

Changes have been made to bring the specification up-to-date and to provide a comprehensive assessment of the content.

There is greater emphasis on the application of appropriate quantitative skills in a range of economic contexts. The assessment of these skills will include at least level 2 mathematical skills as a minimum of 15% of the overall AS and 20% of the overall A Level marks.

Students are expected to accomplish the following quantitative skills as part of their AS and A level study:

- calculate, use and understand ratios and fractions
 - calculate, use and understand percentages and percentage changes
 - understand and use the terms mean, median **and relevant quantiles**
 - construct and interpret a range of standard graphical forms
 - calculate and interpret index numbers
 - **calculate cost, revenue and profit (marginal, average, totals)**
 - **make calculations to convert from money to real terms**
 - make calculations of elasticity and interpret the result
 - interpret, apply and analyse information in written, graphical and numerical forms
- * skills in bold are not a requirement in the AS level.*

More information about the application of quantitative skills is given in Section 8.

The IAL qualification is structured into four units, with two microeconomic and two macroeconomic units. The content is structured coherently and logically, which enables students to build on their knowledge and understanding as they progress throughout the course – students are introduced to economics through building knowledge and application of microeconomic and macroeconomic concepts in Unit 1 and Unit 2, with breadth and depth of knowledge and understanding, with applications to more complex concepts and models

developed in Unit 3 and Unit 4. This division between microeconomic and macroeconomic units also supports teacher specialism and ensures the specification is deliverable for two teaching specialists.

The chart below provides an overview of the course. The IAL Economics is structured into four units with four externally assessed examinations:

<p>IAS Unit 1: Markets in action</p> <ul style="list-style-type: none"> • Introductory concepts • Consumer behaviour and demand • Supply • Price determination • Market failure • Government intervention in markets 	<p>IAS Unit 2: Macroeconomic performance and policy</p> <ul style="list-style-type: none"> • Measures of economic performance • Aggregate demand (AD) • Aggregate supply (AS) • National income • Economic growth • Macroeconomic objectives and policies
<p>IA2 Unit 3: Business behaviour</p> <ul style="list-style-type: none"> • Types and size of businesses • Revenue, costs and profits • Market structures and contestability • Labour markets • Government intervention 	<p>IA2 Unit 4: Developments in the global economy</p> <ul style="list-style-type: none"> • Causes and effects of globalisation • Trade and the global economy • Balance of payments, exchange rates and international competitiveness • Poverty and inequality • The role of the state in the macroeconomy • Growth and development in developing, emerging and developed economies

The main changes are as follows:

1. Labour markets removed from Unit 1 and included in Unit 3.
2. Increased emphasis on the financial sector in Unit 1 and in Unit 2.
3. International competitiveness moved from Unit 3 to Unit 4.

Specific content changes:

Unit 1:

- New section on the nature of economics.
- Role of financial markets included after 'the role of money'.
- Inclusion of reference to Adam Smith and Karl Marx in section on free market and command economies.
- Market failure section includes reference to 'moral hazard' and to 'speculation and market bubbles'.
- Labour markets transferred to Unit 3.
- The distinction between free goods and economic goods.

Unit 2:

- National happiness and wellbeing included in section on economic growth.
- Measures of human development transferred to Unit 4.
- Reference to the savings ratio in section on consumption.
- Section on 'the multiplier' includes alternative methods of calculation.
- Reference to foreign direct investment and productivity in the section on economic growth.
- Inclusion of 'the role of central banks in the conduct of monetary policy' in the section on macroeconomic policies.

Unit 3:

- Joint ventures and state-owned enterprises included in the section on 'types of businesses'.
- Transnational companies transferred to Unit 4.
- Minimum efficient scale included in section on 'economies of scale'.
- Separate section on economic efficiency included at the beginning of the section on 'market structures and contestability'.
- Game theory included in section on 'oligopoly'.
- Natural monopoly included in section on 'monopoly'.
- New section on 'labour markets' (transferred from Unit 1 and expanded).
- Measures to control transnational companies transferred to Unit 4.

Unit 4:

- Section on characteristics of globalisation, includes foreign direct investment (FDI).
- New section on international competitiveness (transferred from Unit 4 and expanded).
- Distinction between automatic stabilisers and discretionary fiscal policy included in section on 'public sector borrowing'.
- Measures to control transnational companies transferred from Unit 3.
- Measures of economic development included (transferred from Unit 2).
- Inclusion of Harrod-Domar model and Prebisch-Singer hypothesis included in section on 'constraints on growth and development'.
- Inclusion of Lewis model in section on 'measures to promote growth and development'.

2.2 Changes to assessment

The assessment structures for the AS and A level qualifications are outlined below and on page 8. More detail on the assessment for each component is given in Section 5 on page 110.

The weights given to the assessment objectives are summarised in the table below:

Assessment Objective		Weighting
AO1	Demonstrate knowledge of terms, concepts, theories and models to show an understanding of the behaviour of economic agents	IAS: 27.5% IA2: 18.75% IAL: 23.1%
AO2	Apply knowledge and understanding to various economic contexts	IAS: 30% IA2: 22.5% IAL: 26.25%
AO3	Analyse issues and evidence, showing an understanding of their impact on economic agents	IAS: 22.5% IA2: 28.75% IAL: 25.6%
AO4	Evaluate economic arguments and use appropriate evidence to support informed judgements	IAS: 20% IA2: 30% IAL: 25%

NB Totals have been rounded either up or down.

A detailed breakdown of the Assessment Objectives can be found on page 51 in the specification which shows the Assessment Objectives at Unit level.

There are two AS Level papers (papers 1 and 2), each comprising 80 marks and 1¾ hours in duration.

For the full A Level candidates take papers 3 and 4 in addition to papers 1 and 2. Papers 3 and 4 comprise 80 marks and 2 hours in duration.

Unit	IAS or IA2	Assessment Information	Marks and length of examination
<p>Unit 1: Markets in action</p> <p>Questions drawn from Unit 1 content.</p>	IAS	<p>Section A: Multiple-choice questions. Students answer all questions (6 marks)</p> <p>Section B: Short-answer questions. Students answer all questions (20 marks)</p> <p>Section C: Based on stimulus material, one data response question comprising a number of parts (34 marks)</p> <p>Section D: One extended open-response question, students select one from a choice of two (20 marks)</p>	<p>80 marks</p> <p>1¾ hours</p>
<p>Unit 2: Macroeconomic performance and policy</p> <p>Questions drawn from Unit 2 content.</p>	IAS	<p>Section A: Multiple-choice questions. Students answer all questions (6 marks)</p> <p>Section B: Short-answer questions, students answer all questions (20 marks)</p> <p>Section C: Based on stimulus material, one data response question comprising a number of parts (34 marks)</p> <p>Section D: One extended open-response question, students select one from a choice of two (20 marks)</p>	<p>80 marks</p> <p>1¾ hours</p>
<p>Unit 3: Business behaviour</p> <p>Questions drawn from Units 1, 2 and 3 content.</p>	IA2	<p>Section A: Multiple-choice questions, students answer all questions (6 marks)</p> <p>Section B: Based on stimulus material, one data response question comprising a number of parts (34 marks)</p> <p>Section C: Two extended open-response question, students select one from a choice of three (40 marks)</p>	<p>80 marks</p> <p>2 hours</p>
<p>Unit 4: Developments in the global economy</p> <p>Questions drawn from Units 1, 2, 3 and 4 content.</p>	IA2	<p>Section A: Multiple-choice questions, students answer all questions (6 marks)</p> <p>Section B: Based on stimulus material, one data response question comprising a number of parts (34 marks)</p> <p>Section C: Two extended open-response question, students select one from a choice of three (40 marks)</p>	<p>80 marks</p> <p>2 hours</p>

Changes have been made to the approach of the AS Level and A Level papers to ensure the assessments are clear and consistent, enabling students to understand the skills they are required to demonstrate and not overly focus on exam technique. The changes summarised below are explained in detail in Section 4:

- A reduction in the variety of **command words** used, careful definition of the skills that comprise each command word and consistent application of the command words within and across assessments.
- **Skills based mark schemes** that focus on the qualities students are expected to demonstrate in their answers rather than the quantity of points within responses. Clarity of the skills required by each command word reflects how teachers and examiners describe the qualities of student work, so the expectations are clear for teachers and for markers and reduces subjectivity.
- The inclusion of **multiple choice questions** in all 4 papers. These questions focus on knowledge, understanding, application and, to a lesser degree, analysis.
- The introduction of **short-answer questions** on paper 1 and on paper 2. These questions focus on knowledge, understanding and application, ensuring questions are explicit and clear in the knowledge and understanding students are required to demonstrate.
- **Choice** is provided for the extended open-response questions, enabling students to respond to an issue based on a context they are more engaged or familiar with. There is no choice of data response question. This allows students to focus on one, broader data response context, which supports comparability across papers and reduces time spent in the exam on processing a second data response context and question that will not contribute to the overall marks.

3. Planning

3.1 Planning and delivering the course

The IAL in Economics qualification can be taught and assessed as either:

- distinct modules of teaching and learning with related units of assessment taken at appropriate stages during the course; or
- a linear course, that is assessed in its entirety at the end.

One of the first decisions that centres will have to make is whether they intend to offer a sequential or thematic approach. A modular A Level offers a more flexible approach as topics can be selected in an order that meets the needs of the students.

With all examinations available in January, June and October, there is flexibility for unit delivery and teaching.

Centres co-teaching the AS along with the full A Level will follow a unitised approach, delivering Unit 1 and Unit 2 in the first year. The themes could be run in parallel or taught sequentially, depending on what is most appropriate for staffing and timetabling within each centre. Centres offering the full A level may also start with Unit 1 and 2 in the first year, but could decide to structure the course differently and adopt an integrated approach; for example, by teaching all microeconomic content together. Suggested different approaches to structuring the course are given in the separate Course Planner documents (on the Economics subject pages of the Edexcel website).

3.2 Suggested resources

There is a text book to accompany the specification:

[Pearson Edexcel International Advanced Level in Economics Student Book and ActiveBook 1](#)

ISBN: 9781292239170

[Pearson Edexcel International Advanced Level in Economics Student Book and Activebook 2](#)

ISBN: 9781292239163

4. Content guidance

This section provides ideas and suggestions for teaching approaches and is not intended to be prescriptive. The specification must be referred to as the authoritative source of information.

Unit 1: Markets in action

This section provides ideas and suggestions for teaching approaches for Unit 1 and is not intended to be prescriptive.

This topic introduces students to the nature of economics through exploring some key underlying concepts, including the idea that economics is a social science, positive and normative economic statements, the economic problem of scarcity and production possibility frontiers. Students will also consider the advantages and disadvantages of specialisation and the division of labour in organising production and in the production of goods and services to trade. Specialisation means there is a need to exchange and this is why students will explore the functions of money. Students are also introduced to the different ways economies can organise themselves in terms of free market, command and mixed economies. Students are required to distinguish between the three and consider the advantages and disadvantages of each.

1.3.1 Introductory concepts

1. The nature of economics

a. Economics as a social science

A scientist can prove the relationships between two variables by conducting experiments. This is not possible for an economist – an economist does not conduct an experiment to determine the impact of a 10% increase in VAT. Instead, an economist creates a simplified model of the economy to look at the impact of such an increase.

b. The development of models in economics

Economists try to understand the economy through making assumptions to help them create models. An understanding of why economists make assumptions in order to simplify their analysis will be useful. The ability to question and challenge assumptions can be used as an evaluative tool in each of the themes.

It will be useful to introduce a basic model and consider how the assumptions help simplify it. Students should also consider how realistic the model is. The PPF could be considered at this stage. Students could consider how PPF is helpful in simplifying two products to help illustrate the maximum productive potential, opportunity costs and efficiency, as well as challenge whether these are realistic assumptions

c. The use of the *ceteris paribus* assumption in building models

Students should explore what *ceteris paribus* means – assuming other variables remain constant – and why this is an important assumption for economists to make when considering the relationships between different variables. Often the impact of one variable on another is considered – for example, how interest rates affect unemployment – and it is important to assume *ceteris paribus* to simplify the analysis.

2. Positive and normative economics

a. The distinction between positive statements and value judgements

Students are required to understand the distinction between positive and normative economic statements and they should be able to explain why statements are either positive or normative.

b. The role of value judgements in influencing economic decision-making and policy

The extent to which governments are involved in the economy is a normative issue, that is, a matter of opinion, requiring a value judgement. Economic analysis tends to be more concerned with positive issues, i.e. statements of fact that can be tested against real-world evidence. For example, the USA has a predominantly private healthcare system, where people have to pay directly for their treatment, whereas the UK has a predominantly publicly provided healthcare system (the NHS). To say that the UK's approach is 'fairer' is essentially a matter of opinion, i.e. a normative issue. To say that the amount spent per head on healthcare in the UK is less than that in the USA is a positive issue.

3. Scarcity

a. The problem of unlimited wants and finite resources

The basic economic problem is that resources are scarce. For many of these resources there are infinite wants but finite resources with which to satisfy them. Scarce resources mean that decisions need to be made regarding what, how, why, and for whom goods and services are produced. Economics can be used as a tool when choosing between the competing demands placed on the available resources.

b. The distinction between renewable and non-renewable resources

Students should explore the difference between renewable and non-renewable resources and be aware of examples of each. One interesting market to consider here is energy generation and students could distinguish between renewable and non-renewable energy resources.

c. The link between scarcity and opportunity cost

Scarce resources mean that choices have to be made and, in doing so, there is an opportunity cost. Students should consider the opportunity costs that consumers, producers and governments experience; for example: should a consumer spend his or her disposable income on a new textbook or a meal out with friends; should a producer increase the dividend to shareholders or invest in capital goods; should a government allocate additional funding to education or invest in new medical equipment for the NHS.

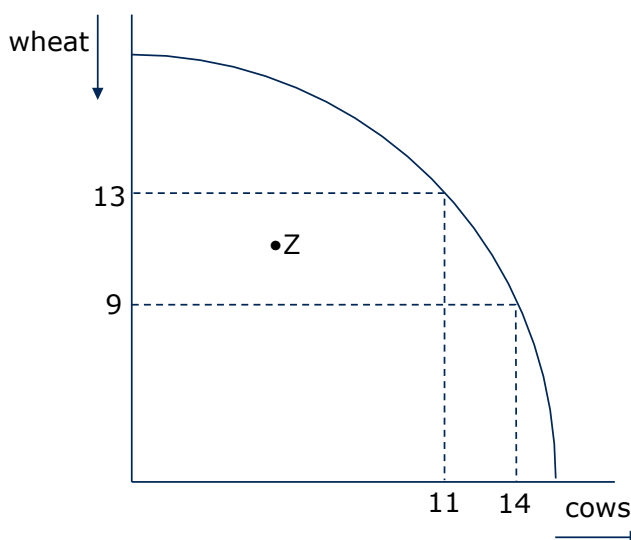
d. The distinction between free goods and economic goods

Free goods are those in unlimited supply and, consequently, there is no opportunity cost. In contrast, economic goods are scarce and, therefore, have an opportunity cost.

4. Production possibility frontiers

a. The use of production possibility frontiers (PPFs)

Production possibility frontiers (PPFs) show the **maximum possible combination** of goods/services that can be produced using all available resources. PPFs help economists to analyse trade-offs.



PPFs can also be used to demonstrate the concept of **efficiency**. Any point on the PPF is a productively efficient point — **the factors of production** (resources, including land, labour, capital and enterprise) are being used to their maximum potential. Any point inside the PPF is inefficient — some of the factors of production are unemployed or underemployed.

Any point to the right of the PPF e.g. point z in the above diagram is unobtainable given the current state of technology.

PPFs demonstrate the concept of **opportunity cost** — the cost of the next best alternative foregone. In the diagram, the production of three more cows incurs an opportunity cost of four tonnes of wheat, i.e. wheat production must be given up in order to produce more cows because of limited resources.

Economic growth (an increase in the productive potential of the country) can be shown by an outward shift in the PPF. Such a shift can be caused by an increase in the quantity or quality of the factors of production (e.g., better educated labour, hi-tech capital, a new oil field discovery, etc.). Very occasionally, the PPF shifts inwards e.g. if the country suffered from a natural disaster which destroyed some of its resources.

b. The distinction between movements along, and shifts in, PPFs

Movement along a PPF is associated with a reallocation of resources from the production of one product to another. Rightward shifts in a PPF are associated with economic growth.

c. The distinction between capital and consumer goods

A consideration of how economic growth might be affected by allocating more resources to the production of capital goods will be useful in developing a deeper understanding of this area.

4. Production possibility frontiers (continued)

d. The significance of capital goods for productivity and economic growth

Capital goods are required to increase productivity (output per worker per hour worked) because they can enable a worker to produce more in a given time period. In turn, higher rates of productivity are likely to be associated with a higher rate of economic growth (Potential growth is an increase in the capacity of the economy and, therefore, to an outward shift in the PPF).

5. Specialisation and the role of money and financial markets

a. The advantages and disadvantages of the division of labour

One way in which economic growth can occur is via specialisation, or the division of labour. Adam Smith wrote about the division of labour in *The Wealth of Nations* in the 18th century. In studying a pin factory in Glasgow he found that when workers completed all of the tasks involved in producing each pin independently, output was low. By splitting the production of a good into a number of different tasks, and allocating each task to a different worker, more could be produced as workers developed greater skill in performing their particular task with the use of specialist tools designed just for that task, therefore leading to less wastage of materials and less time spent on their task. As well as increased output, there were corresponding lower unit costs. However, when this method was put into practice in the early 20th century – for example, with Henry Ford’s Model T production line – workers became so bored that they had to be paid high wages as compensation for the monotony of their work.

Students need to consider the advantages and disadvantages of specialising in the production of goods and services. Consideration should be given to the impact on productivity, unit costs, higher output and boredom.

Students are not required to study the work of Adam Smith in detail – the emphasis should be on understanding his key findings.

b. The functions of money

As firms and individuals specialise in the production of goods and services they will need to sell their products to others. They will also need to purchase other products. This trade creates a need for money to exchange. Therefore, money acts a medium of exchange.

It also performs other functions: as a measure of value (to compare prices and the relative value of goods), a store of value (as a means of saving) and as a method of deferred payment (enables people to buy goods on credit).

c. The role of financial markets

Students are required to have a basic understanding of financial markets in performing various roles: to facilitate saving; to lend to businesses and individuals; to provide a means by which goods and services can be traded easily; to reduce risks and provide greater certainty by enabling commodities and currencies to be traded in futures markets; and to provide a market in which stocks and shares can be traded.

6. Free market, mixed and command economies

- a. There are a number of different economic systems with different approaches to organising the economy. Students are required to consider the distinction between a free market economy, a mixed economy and a command economy.

Free market economy: an economic system where all resources are allocated through the market forces of demand and supply, with no intervention by the government.

Mixed economy: an economic system where resources are partly allocated by the market and partly by the government (e.g. most economies today)

Command economy: an economic system where all resources are allocated by the government, with no markets (e.g. ex-Soviet bloc, North Korea).

- b. **The advantages and disadvantages of free market and command economies**

Most economists would argue that free markets are the most efficient (in terms of using resources in the best possible way to meet the needs and wants of consumers). However, when equity is considered, most economists would also argue that free markets lead to an unequal distribution of income and wealth, since owners of capital and entrepreneurs tend to accumulate the most income/wealth and many people, such as the sick or elderly, are unable to work. As a result, most economies today are mixed economies, where markets allocate many resources, but governments intervene to different extents in order to ensure a minimum standard of living and to correct other market failures.

- c. **The role of the state in a mixed economy**

Governments intervene by raising revenue through taxes and redistributing income in the form of benefits and direct provision of services such as healthcare.

The state also intervenes to address market failures including the protection of the environment and to provide public goods.

1.3.2 Consumer behavior and demand

1. Rational decision-making

a. Assumptions of rationality in decision-making

When building supply and demand models we make assumptions about consumers and producers as economic agents who seek to maximise their utility. Consumers aim to maximise the utility they derive from purchasing goods or services and firms aim to maximise their utility by selling goods and services for the maximum possible profit.

b. Reasons why consumers may not aim to maximize utility

Traditional explanations of consumer behaviour have tended to emphasise the idea of rational choices and the maximisation of utility. More recently, some economists have used psychology and their interpretation of the results of experiments to suggest that we do not always make rational choices and that economic theory should not assume rationality. These **behavioural economists** have tried to demonstrate, for example, that our decisions are often influenced by the opinions of others or by habit and that these might not lead to utility maximisation.

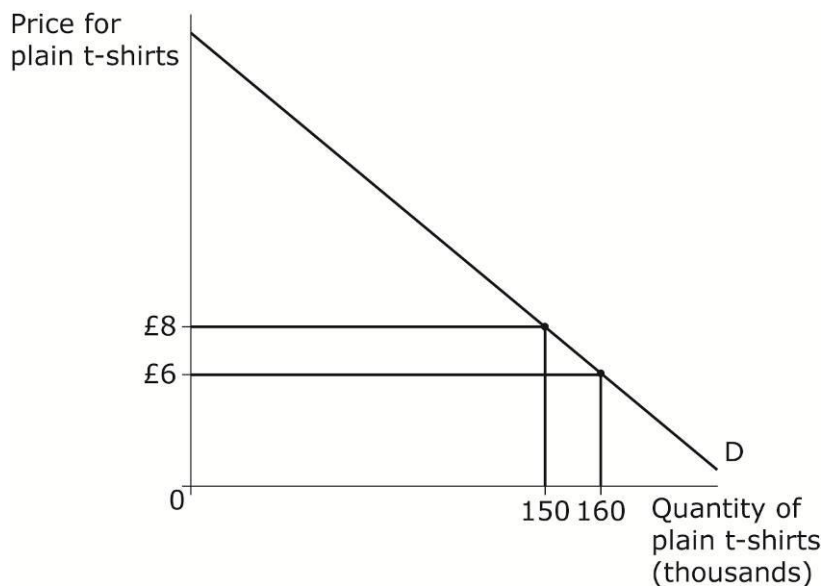
Further, consumers might not make rational choices because of their need to feel valued and because their numeracy skills are weak.

The framing effect is the idea that manipulating the way information is presented can influence and alter decision making. The context in which information is delivered shapes assumptions and perceptions about that information. Information within a context, within a frame is altered by that context and frame. People reach conclusions based on the framework within which a situation is presented. Positive frames tend to elicit positive feelings and result in risk taking and proactive behavior. Negative frames tend to elicit negative feelings and result in risk aversion and reactive behaviour.

2. The demand curve

a. The concept of 'demand'

Demand might be regarded as an abstract concept so it should be related to markets familiar to students. It may be useful to conduct an auction. Demand refers to the amount that consumers are willing and able to buy at any given price in a given period of time. A demand curve shows this relationship between price and quantity demanded. It slopes downwards from left to right because, as price falls, people are more willing to buy a good.



b. The distinction between movements along a demand curve and shifts of a demand curve

Students may find it difficult to remember that changing the price leads to movements along the demand curve and not a shift – this point needs emphasising. In the example above, the price has fallen from £8 to £6 and the quantity has increased from 150 000 to 160 000 shirts. Students should understand that this is an extension of demand. When the price rises and the quantity demanded falls it should be referred to as a contraction in demand.

c. The concept of diminishing marginal utility

Students should explore the concept of diminishing marginal utility and how this influences the shape of the demand curve. Marginal utility is the additional utility, or amount of satisfaction, gained from each additional unit of consumption. Total utility will normally rise as additional units of a product are consumed. Marginal utility will usually decrease with each additional increase in the consumption of a good. This decrease in marginal utility demonstrates the law of diminishing marginal utility, which helps economists to understand the negative sloping demand curve.

d. Factors that may cause a shift in the demand curve

Factors that may cause a shift in the demand curve include: changes in the prices of substitutes and complementary goods, changes in real incomes, changes in tastes and fashions, and changes in size and age distribution of the population, and advertising and branding.

3. Price, income and cross-elasticities of demand (PED, YED & XED)

a. The concepts of 'price', 'income' and 'cross-elasticities of demand'

Price elasticity of demand (PED) measures the responsiveness of quantity demanded to a change in price.

Income elasticity of demand (YED) measures the responsiveness of quantity demanded to a change in income.

Cross (price) elasticity of demand (XED) measures the responsiveness of quantity demanded for one good to a change in the price of another good.

b. Formulae for PED, YED & XED

Students should be confident using the formulae below:

$$\text{PED} = \frac{\% \text{ change in Quantity Demanded}}{\% \text{ change in Price}} = \frac{\% \Delta \text{ in QD}}{\% \Delta \text{ in P}}$$

$$\text{YED} = \frac{\% \text{ change in Quantity Demanded}}{\% \text{ change in Income}} = \frac{\% \Delta \text{ in QD}}{\% \Delta \text{ in Y}}$$

$$\text{XED} = \frac{\% \text{ change in Quantity Demanded of good x}}{\% \text{ change in Price of good y}} = \frac{\% \Delta \text{ in QDx}}{\% \Delta \text{ in Py}}$$

c. Interpretation of numerical values of PED

Students should be able to interpret the numerical values of PED:

PED	
∞	Perfectly elastic demand
< -1	Price elastic demand
-1	Unitary elastic demand
0 to -1	Price inelastic demand
0	Perfectly inelastic demand

d. The factors influencing PED

The factors that influence PED include: the availability of substitutes, the addictiveness of the product, time and the price of the product as a proportion of income.

e. How to calculate total revenue

Total revenue (TR) is calculated by multiplying price by quantity sold.

f. How PED varies along a straight line demand curve

Students should understand that PED is not constant along a straight line demand curve but that demand will be elastic in the top half of the demand curve and inelastic along the bottom half.

3. Price, income and cross-elasticities of demand (PED, YED & XED) (continued)**g. The relationship between price elasticity of demand and total revenue**

The following table shows the relationship:

PED	Price rises	Price falls
Inelastic	Total revenue rises	Total revenue falls
Unitary elastic	Total revenue unchanged	Total revenue unchanged
Elastic	Total revenue falls	Total revenue rises

h. Interpretation of numerical values of income elasticity of demand

YED	
<0 (negative)	Negative income elasticity of demand. These goods are called inferior goods – as income rises the demand for these products will fall
0	Perfectly income inelastic demand – a change in real income will have no impact on demand
0 to +1	Normal good – income inelastic demand: a change in income will lead to a less than proportionate change in demand
>1	Normal good – income elastic demand: a change in income will lead to a more than proportionate change in demand
∞	Perfectly income elastic demand

i. Interpretation of numerical values of income elasticity of demand

The table shows the relationship between two products:

XED	
<0 (negative)	Complements
>0 (positive)	Substitutes
0	Unrelated goods

3. Price, income and cross-elasticities of demand (PED, YED & XED) (continued)

j. The significance of price, income and cross-elasticities of demand for firms, consumers and the government

PED is important to firms in determining their pricing strategy: if demand is inelastic, then an increase in price leads to an increase in total revenue and a fall in price reduces total revenue; if PED is elastic, then a rise in price reduces total revenue and a fall in price increases total revenue. PED is also important to governments in terms of understanding the burden (or incidence) of taxation on producers and consumers. The more price inelastic the good, a greater proportion of the tax is paid by the consumer than the producer. Similarly, for subsidies (a government grant given to producers in order to encourage production), the more price inelastic the good, the greater the price fall for consumers.

Firms should consider the YED of products; if analysis of YED shows demand for their product is income elastic and the economy experiences a recession, demand is likely to fall significantly. XED will tell a firm how demand for their own product will change following a price change by their competitors or partners.

1.3.3 Supply

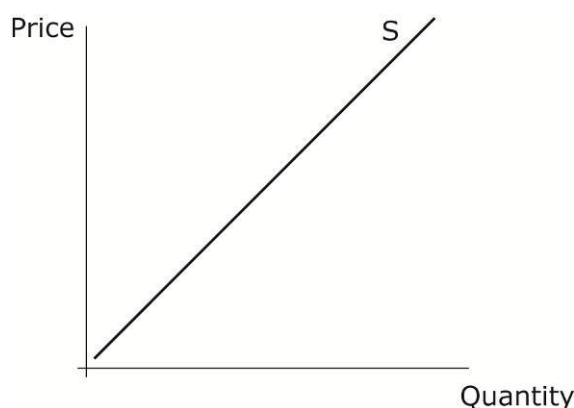
1 The supply curve

a. The concept of supply

Supply refers to the amount that producers are willing and able to sell at any given price in a given period of time.

b. The distinction between movements along a supply curve and shifts of a supply curve

The supply curve shows the relationship between price and the quantity supplied. It slopes upwards from left to right because, as price rises, rational profit maximising producers will supply more because profits should rise. A change in the price of the good leads to a movement along the supply curve, not a shift in the supply curve.



A shift in the supply curve could be caused by a change in the **conditions of supply**. The factors which would cause a shift in the supply curve are listed in the next section.

c. Factors that may cause a shift in the supply curve include:

Factors causing supply to shift right:

- an increase in productivity
- improvement in technology for production
- increased availability of materials
- a fall in price of raw materials
- a fall in labour/capital costs
- introduction of a subsidy
- a rise in the number of firms in the industry.

Factors causing supply to shift left:

- a fall in productivity
- reduced availability of raw materials
- a rise in price of raw materials
- a rise in labour/capital costs
- imposition of a tax
- a fall in the number of firms in the industry.

2 Price elasticity of supply

a. The concept of price elasticity of supply

Price elasticity of supply (PES) measures the responsiveness of quantity supplied to a change in price.

b. Calculation and interpretation of numerical values of PES

PES can be calculated using the following formula:

$$\text{PES} = \frac{\% \text{ change in Quantity Supplied}}{\% \text{ change in Price}} = \frac{\% \Delta \text{ in } Q_s}{\% \Delta \text{ in } P}$$

PES is always a positive number. The table shows how the values may be interpreted:

PES	
∞	Perfectly elastic supply: infinite supply at a given price
>1	Elastic supply: a price change causes a more than proportionate change in quantity supplied
1	Unitary elastic supply: a price change causes an exactly proportionate change in quantity supplied
0 to 1	Inelastic supply: a price change causes a less than proportionate change in quantity supplied
0	Perfectly inelastic supply: a price change causes no change in quantity supplied

c. Factors influencing PES

Supply is likely to be price inelastic if: it is in the short run; there are no available stocks and/or the product is perishable; resources are scarce/immobile; there are legal constraints preventing an increase in production; and if there is no spare capacity.

Supply is likely to be price elastic if: it is in the long run; there are available stocks and/or the product is durable; resources are plentiful/mobile; there are no legal constraints preventing an increase in production; and if there is spare capacity.

d. The distinction between the short run and long run in economics and its significance for PES

The short run is the time period where the quantity of some factors of production are fixed whereas the long run is the time period where all factors of production are variable.

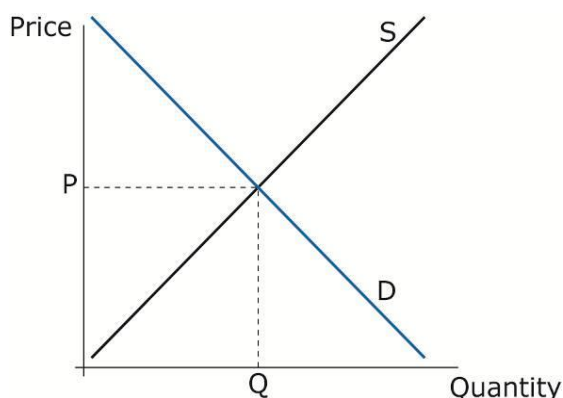
In the short run it is difficult to adjust production, making supply inelastic. This is because some factors of production are fixed. However, in the long run, all factors can be adjusted so firms can increase production in response to price increases, making supply more elastic.

1.3.4 Price determination

1 Determination of market equilibrium

a. Equilibrium price and quantity and how they are determined

In a free market, the forces of demand and supply determine the equilibrium price and quantity, as shown in the following diagram:



The intersection of supply and demand determine the equilibrium price (P) and the equilibrium quantity (Q).

b. Causes of changes in the equilibrium price and quantity as a result of shifts in demand and supply curves

A shift in demand or supply causes a change in the price of a good. Prices will increase if demand increases (moves to the right) or supply decreases (moves to the left). Prices will decrease if demand decreases (moves to the left) or supply increases (moves to the right). Such shifts in the demand and supply curves are caused by changes in the conditions of demand and conditions of supply (see section 1c above).

c. The operation of market forces to eliminate excess demand and excess supply

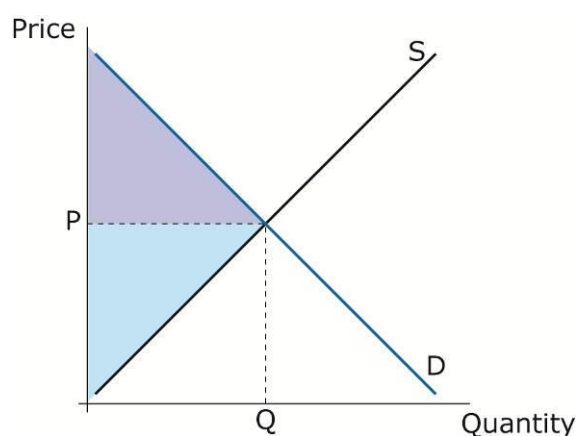
Where demand (D) and supply (S) intersect is the market clearing price (P). If the price is above the equilibrium price P , supply is greater than demand and there is excess supply, a surplus or glut. If the price is below the equilibrium price P , demand is greater than supply causing excess demand or a shortage. If there is excess supply, market forces will result in a contraction in supply and an extension in demand, so causing a fall in price to its market clearing level, P . If there is excess demand market forces will result in an extension in supply and a contraction in demand, causing a rise in price to its market clearing level, P .

2. Consumer and producer surplus

a. The distinction between consumer and producer surplus.

Consumer surplus: the difference between the amount that a consumer is willing to pay and the price that they actually pay; shown by the difference between the demand curve (the amount they are willing to pay) and the market equilibrium price (the amount they actually pay) – the darker shaded area on the diagram.

Producer surplus: the difference between the amount a producer is willing to sell a good for, and the price they actually receive; shown by the difference between the supply curve and the market equilibrium price – the lighter shaded area on the diagram.



b. How changes in demand or supply might affect consumer and producer surplus

Students should consider how changes in supply and demand will affect the size of the consumer and producer surplus, and identify the original, new and change in both the consumer and producer surplus. For example, an increase in demand would cause the demand curve to shift to the right. In turn, this would cause an increase in both consumer surplus and producer surplus.

3. Functions of the price mechanism

a. The rationing, incentive and signaling functions of the price mechanism

Students are required to consider the functions of the price mechanism to allocate resources:

- **Rationing** – due to scarcity, not everyone is able to buy everything they want; when demand is greater than supply, prices will rise so that the good/service is rationed out only to those who can afford to pay for the items.
- **Incentive** – when the price of a product rises it creates an incentive for firms to shift production towards those products that help generate higher profits. Likewise falling prices may create an incentive for firms to move away from the production of a product.
- **Signalling** – when the price of a product rises it signals to producers that the demand for that product is probably high and firms should increase production. Prices are helping to determine where and how resources should be allocated.

b. The price mechanism in the context of different types of markets, including local, national and global markets.

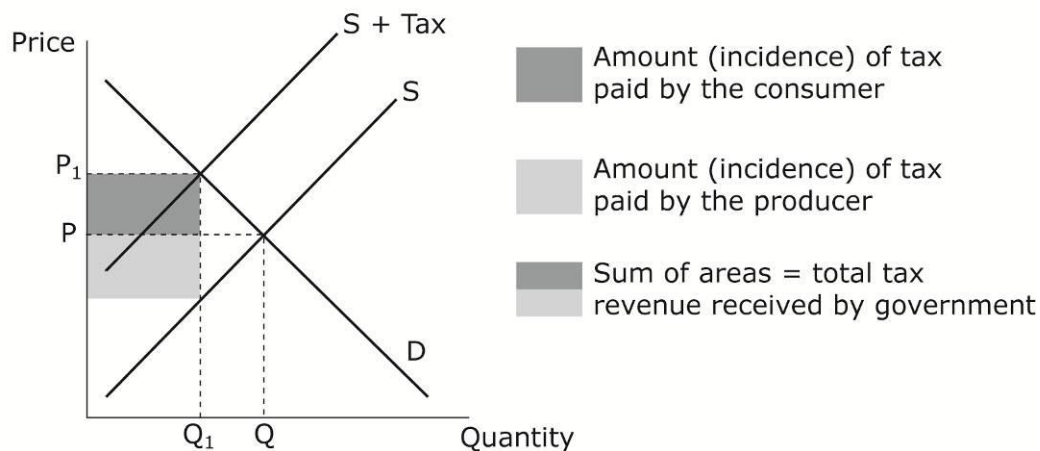
The price mechanism should be considered in a variety of contexts. Examples might include the local market for rice; the national market for houses; and the global market for oil.

4. Indirect taxes and subsidies

a. The impact of indirect taxes on consumers, producers and the government.

In the diagram there is a specific tax imposed which causes supply to shift to the left from S to $S + \text{Tax}$. This causes the quantity to fall from Q to Q_1 and the price to rise from P to P_1 .

The Incidence of Taxation



4. Indirect taxes and subsidies (continued)

b. The incidence of indirect taxes on consumers and producers

The incidence of the tax paid by the consumer is in dark grey and represents the fact consumers are now paying more. The incidence of the tax paid by the producer is given by the lighter grey and represents the fact they earn less revenue per item. The sum of the two incidences represents the tax revenue earned by the government from this tax. Students should consider how the elasticity will affect the incidence of the tax. When demand is more inelastic the incidence of the tax paid by the consumer will be bigger and the incidence of the tax on the producer will be smaller. When demand is elastic then the incidence will be greater for the producer than the consumer. Taxes should be linked to negative externalities. Governments impose taxes on goods such as cigarettes and alcohol to reduce the consumption of the good and to raise tax revenue in order to fund education and health.

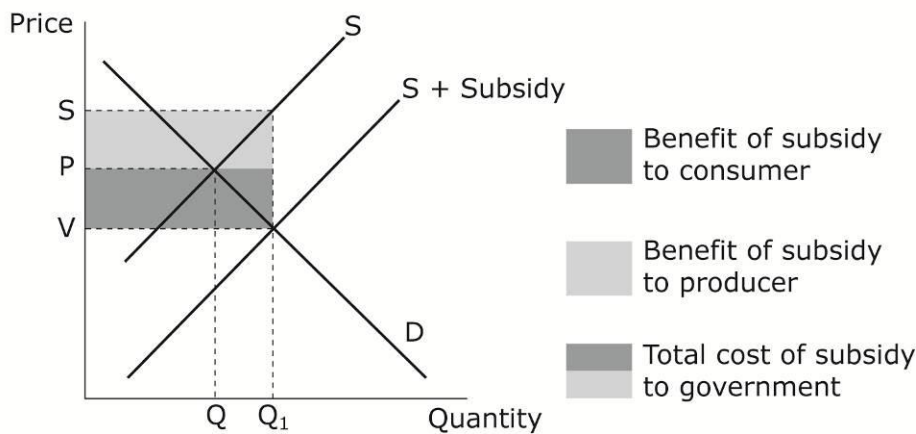
c. The impact of subsidies on consumers, producers and the government.

In the diagram there is a subsidy introduced which causes supply to shift to the right from S to S+Subsidy. This causes the quantity to rise from Q to Q₁ and the price to fall from P to V.

d. The incidence of subsidies on consumers and producers

The benefit of the subsidy to the consumer is in dark grey and represents the fact consumers are now paying less. The benefit of the subsidy to the producer is given by the lighter grey area and represents the fact they earn more revenue per item. The total cost of the subsidy to the government will be the sum of the benefits to both the consumer and producer.

Incidence of a Subsidy



1.3.5 Market failure

1. Sources of market failure

a. Why market failure occurs

Market failure is where too much or too little of a good is being produced and/or consumed compared with the socially optimal level of output, or when the price mechanism leads to an inefficient allocation of resources.

b. Sources of market failure

Students should be introduced to examples of the different types of market failure, including externalities, non-provision of public goods, imperfect market information, moral hazard and market bubbles.

2. Positive and negative externalities

a. The distinction between private benefits, external benefits and social benefits

External benefits (positive externalities) exist when the social benefits of an economic action are greater than the private benefits. For example, the education received by a child means that he or she can get a job that pays a reasonable income (i.e. there is a private benefit to education); however, that child's education may also benefit wider society if he or she becomes a doctor and is able to treat people so that they can return to work (i.e. there is also an external benefit of consumption).

$$\text{social benefits} = \text{private benefits} + \text{external benefits}$$

b. (b & c) The distinction between private costs, external costs and social costs

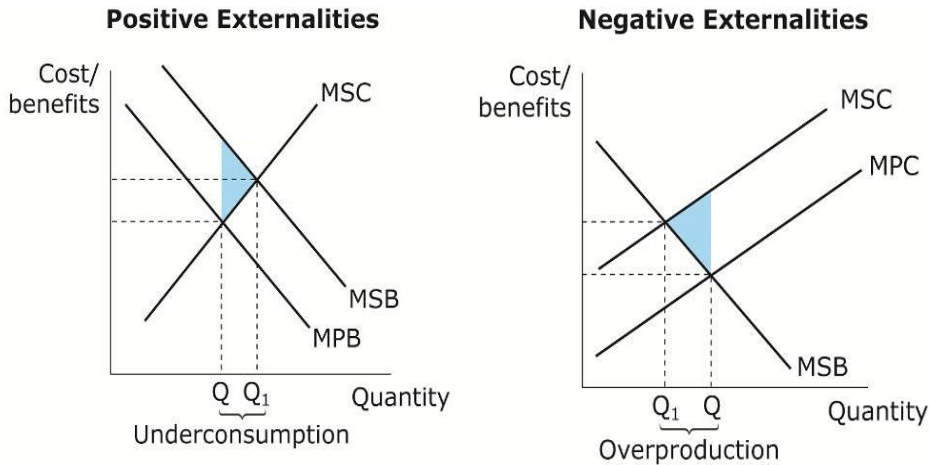
External costs (negative externalities) exist when the social costs of an economic action are greater than the private costs. For example, a chemical manufacturer located on the banks of a river will incur a number of private costs of production (for example, raw materials, labour and running machinery) but may also impose costs on third parties (external costs of production), such as noise from delivery lorries, an ugly factory affecting the quality of life of local residents and pollution in the form of chemicals being pumped into the river.

$$\text{social costs} = \text{private costs} + \text{external costs}$$

2. Positive and negative externalities (continued)

d. The use of diagrams to illustrate the external benefits of consumption (positive externalities) and the external costs from production (negative externalities)

Students should draw the relevant diagrams accurately and it is important to pay particular attention to labelling the market equilibrium, social optimum and welfare loss.



- MSB= Marginal social benefit
- MSC= Marginal social cost
- MPC= Marginal private cost
- Q= Market equilibrium quantity
- Q₁= Social optimum quantity

Shaded area = welfare gain triangle from under-consumption (positive externalities) and welfare loss triangle from over-consumption (negative externalities)

e. The impact of externalities in various contexts

Students should be able to apply these externalities concepts to a variety of contexts including transport, health, education, the environment and financial services.

3. Non-provision of public goods

a. The distinction between public and private goods

Goods that are both non-rival and non-excludable are called public goods. Non-rival means that the consumption of a product by one person does not prevent another person from also consuming that product. For example, a radio or TV programme demonstrates non-rivalry because one person listening to the programme does not prevent others from listening to it. However, a radio or TV is a rival good. Non-excludable means that once a good is provided it is impossible to stop people from using it. For example, once a lighthouse is provided, ships at sea cannot be prevented from benefiting from it. However, a car manufacturer can exclude someone from purchasing its cars if that person cannot afford it, which is why cars are classified as private goods.

In contrast, private goods are both rival and excludable. A car is a rival product because one person's ownership of it prevents others from using it. Further, a car retailer can exclude someone from purchasing its cars if that person cannot afford it. For these reasons cars are classified as private goods.

3. Non-provision of public goods (continued)

b. Why public goods may not be provided by the private sector

Public goods have to be provided by governments, because people cannot be prevented from using them and firms have no incentive to provide them as they cannot make a profit. The problem the private sector faces is ***the free rider problem***, where consumers will benefit from the product without paying for it.

4. Imperfect market information

a. The distinction between symmetric and asymmetric information

Perfect and symmetric information held by buyers and sellers means that consumers and producers have the same level of knowledge about the products and they know everything there is to know about them. In many cases information is asymmetric and producers know more than consumers or the consumers know more than the producers or information is incomplete or imperfect.

b. The significance of information gaps

For markets to work, there needs to be perfect and symmetric information, i.e. consumers and producers have the same level of knowledge about the products, and they know everything there is to know about them. In many cases, however, information may be asymmetric (producers know more than consumers) or incomplete/imperfect. In these situations, there is market failure and resources may not be allocated efficiently.

c. How imperfect information may lead to a misallocation of resources in various contexts

Students should be able to apply these externalities concepts to a variety of contexts including healthcare, education, pensions and insurance. For example, in the private healthcare market, doctors know more than patients about healthcare and treatments (asymmetric information). There is an incentive, therefore, for doctors to prescribe more expensive treatment than is necessary in order to increase their profits.

5. Moral hazard

a. How moral hazard can occur

Moral hazard can occur when one party takes a risk knowing that another party will bear the cost of the risk. Therefore, it arises when both parties have incomplete information about each other.

b. The impact of moral hazard on consumers, producers, workers and governments in insurance and banking

If people have comprehensive private health insurance then they would be more likely to visit the doctor. They may also engage in more risk taking activities because they are not responsible for paying the medical costs if they have an accident.

In the case of banking, prior to the 2008 Financial Crisis, some banks lent money to people to buy houses even though they had little prospect of repaying those mortgages. The bank employees may have had financial incentives to arrange as many mortgages as possible. Therefore, moral hazard arises because the bank does not take the full consequences and responsibilities of its actions and, therefore, has a tendency to act less carefully than it would otherwise. This would leave another party e.g. the bank's shareholders, the bank depositors or taxpayers to hold responsibility for the consequences of those actions.

6. Speculation and market bubbles

a. How market bubbles may arise

Poor lending decisions by bankers, quantitative easing and speculation can lead to market bubbles. For example, excessive lending to home buyers who have no deposit and/or poor credit records might result in a housing bubble in the housing market.

b. The impact of market bubbles

Students should consider the effects of market bubbles on consumers, producers, workers and governments. For example, a housing bubble would benefit home owners but would make it more difficult for prospective first-time buyers to afford a house. Construction companies might benefit from higher revenues and profits. However, workers might find it more difficult to move from one area to another if the increase in house prices is not uniform across the country. A government could benefit from higher tax revenue if there are taxes on the value of a house when transferred from one person to another.

1.3.6 Government intervention in markets

a. The purpose of government intervention

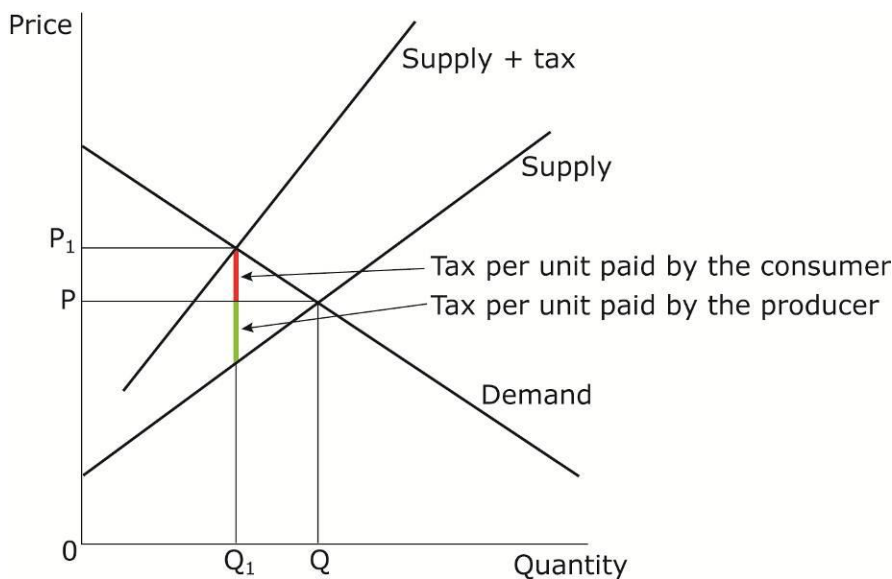
Government intervention is designed to address market failures and so to create a more efficient allocation of resources.

b. Methods of government intervention

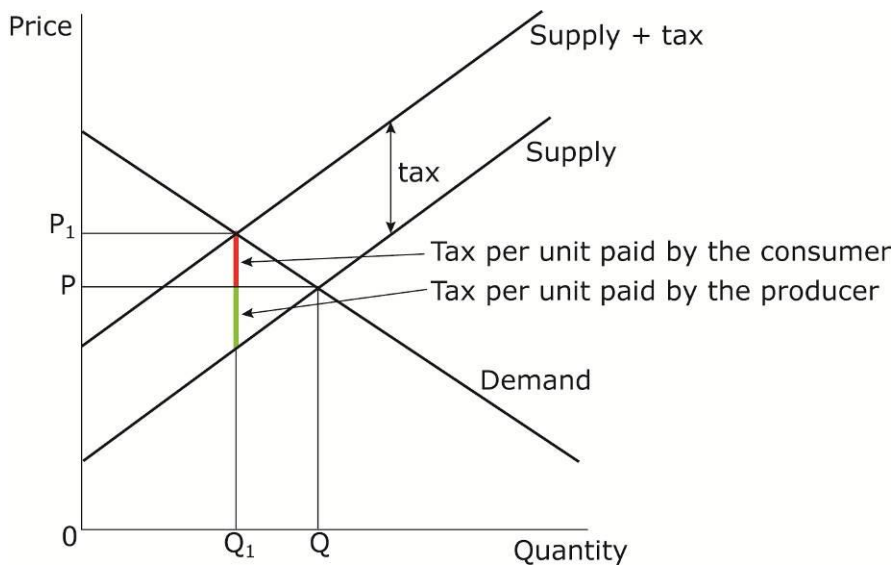
- **Taxation**

Taxation reduces supply, leading to an increase in price. This acts to discourage production/consumption of a good with negative externalities.

ad valorem tax is a percentage, such as VAT. With *ad valorem* tax the supply curve becomes steeper – in the diagram below the supply curve has pivoted from supply to supply + tax. The buyer pays a proportion of the tax and the supplier the rest.



A specific tax is where the tax is a specific amount; for example, a 5p tax on chocolate that is paid whatever the price of chocolate. The supply curve shifts left from supply to supply + tax. The buyer pays part of the tax because of the higher price and the supplier pays part because they now make less revenue.



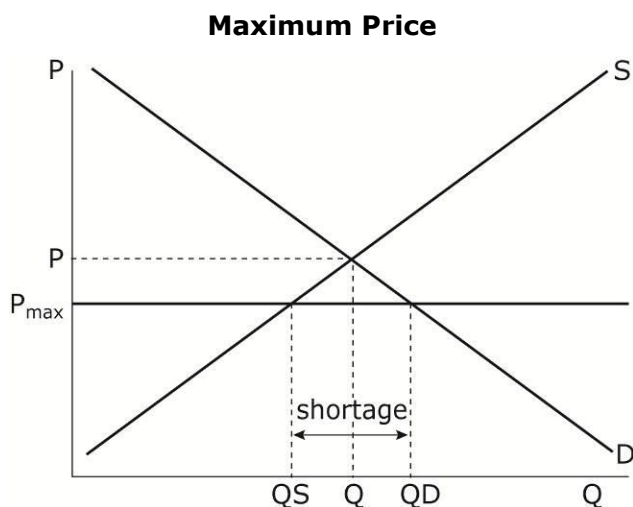
1.3.6 Government intervention in markets (continued)

- **Subsidies**

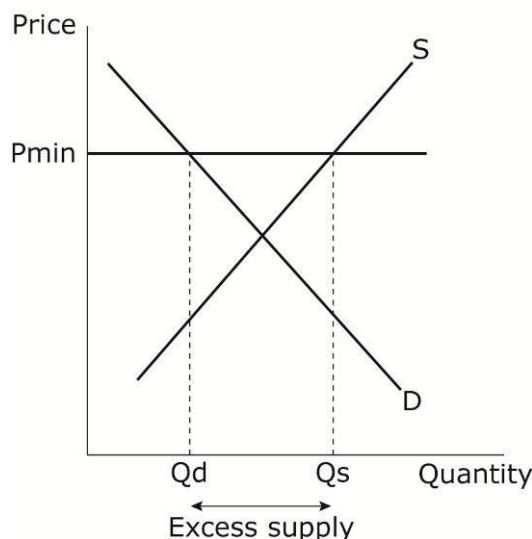
Subsidies increase supply, leading to a reduced price which encourages production/consumption of a good with positive externalities.

- **Maximum and minimum (guaranteed) prices**

Governments could introduce a maximum price, where goods cannot be sold at a price above this. A maximum price may be set by a government to encourage consumption of a particular good. P_{max} is the maximum price and is set below the market price, P . Q_d is the quantity demanded by consumers and Q_s is the quantity supplied. Compared to the market equilibrium firms have contracted supply due to the lower prices but consumers have extended demand. $Q_d - Q_s$ gives an excess demand/shortage. An example of this is Cyprus introducing a maximum price on milk.



Governments could introduce a minimum price, where goods cannot be sold at a price below this. A minimum price may be set by a government to discourage consumption of a particular good. P_{min} is the minimum price and is set above the market price. Q_d is the quantity demanded by consumers and Q_s is the quantity supplied. Compared to the market equilibrium, firms have extended supply due to the higher prices but the consumers contracted demand. $Q_s - Q_d$ gives an excess supply/surplus/glut. Scotland's attempts to introduce a minimum price for alcohol might be an interesting case study to use.

1.3.6 Government intervention in markets (continued)**Minimum Price**

- **Tradeable pollution permits**

These could be used to tackle negative externalities. The government decides the desired level of pollution and releases a number of permits. These permits can be traded by firms so that low polluters can sell to high polluters for profit.

- **Extension of property rights**

Allocating property rights will encourage the owners to protect the resource and to prevent over-exploitation. Extending property rights will enable the owners to sue the polluters so helping to protect the environment.

- **State provision of public goods**

The government may provide a good or service, using tax revenue to fund it. These goods are not provided by the private sector due to the free rider problem.

- **Regulation**

This method may be used to tackle negative externalities. The government imposes rules regarding the production or consumption of goods or services. This is usually backed up legally by fines/prison sentences.

- **Provision of information**

The government may provide information to consumers to correct the problem of information gaps/asymmetric information.

1.3.6 Government intervention in markets (continued)

Type of intervention	How it works	Strengths	Weaknesses
Taxation	Reduces supply and therefore increases price, to discourage production/ consumption of a good that has negative externalities.	Works through the price mechanism. Easy to understand.	Can be expensive to collect. Difficult to know the correct level of tax to set, as it should equal the external costs. Ineffective if demand is inelastic, as tax will have to be very high to reduce equilibrium quantity. Can be regressive.
Subsidy	Increases supply and therefore reduces price, to encourage production/ consumption of a good with positive externalities.	Works through the price mechanism. Easy to understand.	Expensive for government — incurs an opportunity cost. Difficult to know correct subsidy to provide as it should equal external benefits. Producers may pocket the money and not increase supply.
Maximum prices	Government imposes a maximum price (price ceiling) at which a product may be sold.	Ensures consumers do not have to pay an excessive price for the product.	Producer supply too little. The shortage may lead to a black market in which the product is traded at a price significantly higher than the maximum price.
Minimum prices	Government purchases commodities if a floor price is reached.	Ensures fair income for producers and fair prices for consumers.	Producers supply too much. This excess supply is bought by the government and stored. Government would have to pay cost of subsidies and the cost of storage.

1.3.6 Government intervention in markets (continued)

Type of intervention	How it works	Strengths	Weaknesses
Tradeable permits	An efficient amount of pollution is agreed, and a corresponding number of permits released — these can be traded among firms so that low polluters can sell to high polluters and make a profit. Aims to tackle negative externalities.	Uses the market mechanism, therefore efficient. Requires little government intervention, therefore cheap to run.	Difficult to set correct amount of pollution and therefore right number of permits.
Extension of property rights	Aims to allocate property (ownership) rights so that they become responsible for paying for external costs, therefore reducing negative externalities.	Once property rights are allocated, no more government intervention needed in theory, therefore cheap.	Difficult to allocate property rights when they have never existed before. Some property rights cannot be allocated, e.g. carbon emissions cause global warming, but no one 'owns' the world and it would be politically undesirable for this to happen.
State provision of public goods	Government directly provides a good or service, funded through tax revenue, in order to provide goods which have positive externalities or are public goods.	Increases fairness of access to services such as healthcare and education, which have many positive externalities attached. Without government provision, public goods wouldn't be provided.	Expensive for Government — incurs opportunity cost. State monopoly can result in inefficiency (e.g. through bureaucracy etc.). Difficult to maintain consistent standards.
Regulation	Government imposes rules regarding the production, sale or use of a good/ service, and backs this up legally by fines/ prison sentences, etc. Aims to tackle negative externalities.	Easy to understand and often easy to monitor/ police.	Expensive to monitor/ police. Firms may ignore fines if they are not large enough. Can be anti- competitive. Often difficult to 'pin the blame' on the appropriate person, therefore unfair.

1.3.6 Government intervention in markets (continued)

c. Contexts in which governments may intervene

Students should be able to apply these forms of government intervention in a range of contexts including health, education, transport, the environment, energy, agriculture and commodities.

1.3.7 Government failure

a. The concept of government failure

Government failure exists when the government intervenes to correct a market failure, but the result is a more inefficient allocation of resources and there is a net welfare loss.

b. Causes of government failure

The causes of government failure include information gaps, a lack of incentives, unintended consequences such as smuggling and illicit production, excessive administrative costs and moral hazard.

Unit 2: Macroeconomic performance and policy

2.3.1 Measures of economic performance

1. Economic growth

a. The rate of change of real GDP as a measure of economic growth and living standards

Economic growth is measured in two main ways — as an increase in real GDP or as an increase in potential GDP. The first is relatively easy to measure.

Real GDP is a figure used to determine the total value of production (adjusted for inflation) within a country's borders by both its own citizens (and companies) and foreign ones residing there. Typically, GDP is calculated as:

$$\text{GDP} = \text{Consumption} + \text{Investment} + \text{Government Spending} + \text{Exports} - \text{Imports}$$

The increase in potential GDP is a very useful measure of how the economy is performing relative to its capacity constraints and its use of resources, and ignores the possibility that some of the resources might be unused.

Real GDP per capita is often used as a measure of living standards since income has a major impact of an individual's quality of life.

b. GNI as an alternative measure of national income

$$\text{GNI} = \text{GDP} + \text{Income earned from nationals living in foreign countries}$$

Income earned from foreign nationals living in the country. So instead of looking at what is generated by a country within its border GNI is trying to calculate the total income generated by that country's citizens.

c. The distinction between various measures of GDP/GNI

- Real and nominal.
- Nominal GDP/GNI is the market value (money-value) of all final goods and services produced in a country whereas real GDP/GNI is a measure of the value of all final goods and services produced in a country, adjusted for price changes.
- Total and per capita.
- To calculate per capita GDP/GNI the total GDP/GNI is divided by the population of the country.
- Value and volume.
- The distinction between value and volume is really the same as that between nominal and real (see above).

d. Comparison of GDP/GNI rates of growth between countries and over time

Students should be comfortable using economic growth data to compare and contrast different countries' economic performance, and to draw conclusions about a single country's economic performance over time.

e. The concept of Purchasing Power Parities (PPPs) in making international comparisons of real GDP/GNI

Students need to understand PPPs and have a basic understanding that PPP figures are adjusted for differences in the cost of living between countries.

1. Economic growth (continued)

f. **The distinction between positive economic growth rates and negative economic growth rates**

It is important for students to understand that economic growth may be positive or negative.

g. **The concept of 'recession'**

A technical recession is usually defined as two consecutive quarters of negative economic growth.

h. **The limitations of using GDP/GNI to compare living standards between countries and over time.**

There are many problems with using GDP figures to compare living standards over time and between countries. For example:

- GDP does not take into account the improving quality of (in particular) technological goods.
- GDP does not include unofficial or unpaid work. The value of goods and services that are consumed by the producers, rather than traded, is also not included. This is a particular issue in developing countries with higher levels of subsistence agriculture.
- Increases in real GDP may not be shared equally among an economy's population: GDP per capita shows average income per person, but the averaging process may mask huge inequalities.
- There may be increases in other problems alongside economic growth. There may be more pollution, congestion, number of hours worked, stress levels – all these can contribute to worsening living standards even for those whose incomes are rising.

National happiness and wellbeing

In response to these issues outlined above, there has been a move towards measuring National Happiness, rather than just focusing on economic variables. In Bhutan, a measure of Gross National Happiness is based on the following criteria:

- Psychological wellbeing
- Health
- Education
- Time use
- Cultural diversity and resilience
- Good governance
- Community vitality
- Ecological diversity and resilience
- Living standards

Within the area of happiness economics there has been much debate about the 'Easterlin paradox', the idea that happiness does rise with average incomes, but only up to a point. Beyond this, the marginal gains in happiness fall, perhaps because people care about relative as well as absolute incomes.

2. Inflation

a. **The concepts of inflation, deflation and disinflation.**

Students need to be able to distinguish between inflation (a sustained increase in the general price level); deflation (a sustained decrease in the general price level) and disinflation (a fall in the rate at which the general price level is rising)

b. **Calculating inflation using a consumer price index (CPI)**

The use of a price index is intended to make comparisons easier over time and between countries. A base year is chosen to make effective comparisons. Most countries calculate the CPI on a monthly basis. The CPI uses a 'shopping basket' of goods and services. The prices of most of these items are collected from different locations each month. The indices are weighted to reflect the relative importance of the various items in the total expenditure of households. The contents of the basket and the weights are updated annually.

c. **Limitations of the CPI as a measure of the rate of inflation**

There are various problems of measuring the rate of inflation using the CPI including: the difficulty of including the impact of new technology on products and the problem of measuring changes in quality. For example, consumers benefit from higher quality products. When inflation calculations use a fixed basket of goods, however, the implicit assumption is the quality does not change.

d. **The producer (wholesale) price index as an indicator of future trends in the rate of inflation.**

A producer (wholesale) price index measures the average change in prices by domestic producers for their output.

e. **Causes of inflation:**

Inflationary pressures may come from different sources. Students should understand that increases in aggregate demand (AD) caused, for example, by an increase in consumption, may cause the average price level to rise.

Similarly, decreases in (short-run or long-run) aggregate supply (AS) may cause a rise in the price level. For example, a rise in wages would cause costs of production to increase and so result in a decrease in short-run aggregate supply. Students should also be aware that growth of the money supply (e.g. as a result of quantitative easing) will cause increased inflationary pressures, as individuals and firms may spend their excess money on goods and services, raising aggregate demand.

f. **Causes of deflation:**

Deflation may be caused by a fall in aggregate demand, for example, as a result of a cut in public expenditure; or by an increase in aggregate supply, for example, as a result of an increase in productivity; or by a decrease in the money supply.

2. Inflation (continued)

g. Effects of inflation and deflation

Students should be able to explain the effects of inflation and deflation on consumers, the government, firms, workers, income distribution, investment and competitiveness, and the current account of the balance of payments. These may include effects on:

- UK international competitiveness
- uncertainty and business planning and investment
- the real value of savings
- the purchasing power of those on fixed incomes
- economic growth and unemployment (the short run Phillips curve).

3. Employment and unemployment

a. How unemployment is measured, using the International Labour Organization (ILO) definition.

The International Labour Organization (ILO) measure of unemployment assesses the number of jobless people who want to work, are available to work and are actively seeking employment. It is used internationally so comparisons can be made between countries. It also enables consistent comparisons over time

b. The causes of unemployment:

There are various names for different types of unemployment. For example, cyclical or demand deficient – the idea that unemployment levels might be related to the business cycle – and classical or real-wage – that unemployment might be positively related to wage pressures, especially when wages are deliberately maintained above equilibrium level. The relative importance of some types might be considered, for example, that structural unemployment might have long-term detrimental effects, whereas frictional unemployment might not. Other types should also be considered: for example, seasonal. Each type of unemployment has different implications for government policy.

c. The effects of unemployment

Unemployment has predominantly negative effects on the individuals involved, firms, workers, the government and the whole of society, such as: lower standard of living for consumers; falling sales, revenues and profits for firms; lower living standards for workers made redundant; lower tax revenues for the government combined with higher expenditure on benefits; opportunity cost – the goods and services which could have been produced by the unemployed; and for society, for example, possibly in terms of higher crime rates.

d. The distinction between unemployment and underemployment.

Employment and unemployment are not the opposite sides of the same issue – in fact the number of people in work in the UK is often increasing at the same time that unemployment rises. This might be caused by increased immigration, for example, so there are more people in the labour market, some of whom get jobs and some who do not or replace others already working. Alternatively, it could be because the number of people who are inactive is falling. Economically inactive people are those aged between 16 and 64 who are not available for work, or not looking for work. This includes full-time students, homemakers, those who are too sick or disabled to work long term, those who have taken early retirement and 'discouraged' workers.

3. Employment and unemployment (continued)

e. **The significance of changes in rates of employment, unemployment and economic inactivity.**

Employment and unemployment are not the opposite sides of the same issue – in fact the number of people in work in the UK is often increasing at the same time that unemployment rises. This might be caused by increased immigration, for example, so there are more people in the labour market, some of whom get jobs and some who do not or replace others already working. Alternatively, it could be because the number of people who are inactive is falling. Economically inactive people are those aged between 16 and 64 who are not available for work, or not looking for work. This includes full-time students, homemakers, those who are too sick or disabled to work long term, those who have taken early retirement and 'discouraged' workers.

f. **The significance of net migration for employment and unemployment.**

Students should have a basic understanding of the effects of net inward or outward migration on an economy's employment and unemployment rates, and how the skill levels of migrants might affect these.

4. Balance of payments

a. **Components of the balance of payments, with particular reference to the current account.**

The four elements of the current account of the balance of payments (trade in goods, trade in services, investment income and international transfers) should be understood, and their relative importance to an economy appreciated, although the focus is on trade in goods and services. Time series data should be used to show the context of an imbalance.

b. **The distinction between deficits and surpluses in the trade in goods and services balance.**

A deficit in the trade in goods and services balance implies that the value of goods and services imported is greater than the value of goods and services exported.

A surplus in the trade in goods and services balance implies that the value of goods and services exported is greater than the value of goods and services imported.

c. **The distinction between balance of payments deficits and surpluses on the current account.**

Students should understand what is meant by an economy having either a current account deficit or a current account surplus, and be able to analyse some factors which might lead to either of these. See section 2.3.5 for more detail here.

2.3.2 Aggregate demand (AD)

1. The characteristics of AD

a. The concept of AD

Aggregate demand refers to the amounts of final goods and services that will be purchased at all possible price levels in an economy.

b. Components of aggregate demand

Students should have an appreciation of the main components of AD for an economy: household consumption (C), government spending (G), investment (I), and net exports (X-M). In most developed economies consumption is the most important component of AD. Therefore a 1% increase in consumption would have a much greater effect on the UK economy than a 1% increase in any of the other components of AD.

c. The distinction between a movement along, and a shift of, the AD curve.

Aggregate demand is drawn as downward sloping for several reasons. First, the real balance effect; for example, an increase in the average price level reduces the purchasing power of households, businesses, government and the foreign sector, so reducing the quantity of real output demanded.

Another reason for drawing a downward sloping AD are that, at higher average prices, an economy is less likely to export, more likely to import (decreasing the X component and increasing the M component of AD, and therefore decreasing AD overall) – the international competitiveness argument.

A third reason why the AD curve slopes downwards is that, at higher average prices, the interest rate is likely to be higher, meaning that investment (a component of AD) is lower. Households and firms might also save more.

Shifts in the AD curve are caused by changes affecting each of the components of AD. These are considered in the following sections.

In summary, a change in the average price level in an economy will cause a movement along the AD curve, while a change in the value of the components of AD will cause a shift of the curve.

2 Consumption (C)

a. Influences on consumption

The most significant influence on consumption is disposable income. Disposable income is the income that an individual receives after having paid any direct taxes and received any transfer payments/benefits.

The interest rate is a major influence on consumer spending. As interest rates rise, consumers have more incentive to save, as the return on saving rises, so tend to substitute saving for spending. In addition, the cost of buying on credit rises and interest payments on any variable rate loans/mortgages already taken out will rise, reducing consumers' discretionary income. Rises in the interest rate may also lead to a fall in average house prices (as demand for houses falls because of the increased cost of taking out a mortgage), creating a negative wealth effect in the economy.

The amount that consumers spend is largely influenced by the confidence of consumers; for example, are they worried about losing a job, confident that shares and house prices are growing, or saving because of worries about a small pension?

The level of welfare payments affects disposable income and so has an important impact on consumption. After the 2008 Financial Crisis many countries cut welfare payments as a means of reducing their budget deficits.

Actual changes in the economy (such as rises in the FTSE or in average house prices) can cause real spending increases if people decide to trade in their increased wealth or may simply increase confidence in spending. In contrast, falling share prices or falling house prices might cause people to reduce spending.

The availability of credit will influence consumption because many consumers rely on credit to purchase goods and services. If banks and financial institutions make it more difficult for consumers to borrow then consumption is likely to fall.

b. The relationship between savings and consumption.

Savings refer to that part of disposable income which is not spent. Therefore, in a simple, two-sector economy with firms and households, any income which is not spent must be saved.

c. The definition of the 'savings ratio'.

The (household) savings ratio gives an idea of the average extent of saving for all households in the economy. It is calculated as the percentage of disposable income that is saved.

d. Causes and effects of changes in the savings ratio.

1. Factors influencing the savings ratio are similar to those influencing consumption including disposable income; the real interest rate on savings;
2. consumer confidence; tax incentives to save and the level at which interest on savings is taxed; the age structure of the population;
3. the level of deposits required to obtain a mortgage or the purchase expensive consumer items;
4. the availability of savings institutions;
5. cultural and social factors.

Students should consider possible effects of increases or decreases in the savings ratio. For example. A fall in the savings ratio could, in the short-run lead to an increase in consumption, higher aggregate demand and a higher rate of economic growth. Higher AD could cause an increase in inflationary pressures. In turn, these effects could result in higher imports and a deterioration in the trade balance. However, in the long term, such a fall in the savings ratio might result in insufficient funds for investment causing a slower rate of economic growth.

3 Investment (I)

a. The distinction between gross investment and net investment

Students should understand that net investment accounts for the depreciation of capital, while gross investment is before depreciation is taken into account.

b. Influences on investment:

Students should understand the range of factors which might influence the level of investment in an economy. The interest rate, as the cost of borrowing, is likely to have an inverse relationship with the amount of investment – only a few projects will be viable if the cost of credit is high.

Increasingly, business confidence and expectations are regarded as a particularly significant influence on a firm's decisions to invest. The use of the term 'animal spirits' by Keynes referred to a particular sort of confidence; 'naive optimism', where entrepreneurs, encouraged by a rising market, tended to take too many risks.

In contrast, Keynes thought that if there was great uncertainty, only a manic, strong-willed entrepreneur would put capital at risk. When animal spirits are strong, investment is sufficient to maintain aggregate demand; when they are weak aggregate demand falls, and the economy lapses into depression.

An appreciation that banks may not be willing to lend to firms when firms wish to borrow is another factor which would reduce investment.

The level of profits and the rate at which they are taxed could influence the amount of finance that firms have available for investment.

c. Government policy to promote investment:

In order to promote investment governments may provide tax relief on investment by firms or by providing subsidies for investment or by reducing tax on company profits (corporation tax).

4 Government expenditure (G)

a. Influences on government expenditure

Government expenditure refers to spending by central and local government on goods and services.

The government may choose to change the level of government expenditure as part of its fiscal policy (see section 2.6.2).

Students should understand how government spending is affected by the level of economic activity. For example, expenditure on means-tested benefits rises when there is a recession and falls when economic growth picks up.

Governments may decide to increase expenditure as part of a policy to correct market failures (see Unit 1).

5 Net trade balance (X–M)

a. The impact on the net trade balance of changes in selected variables

Students should be able to analyse some factors which might affect a country's (net) trade balance. If imports are normal goods then an increase in real incomes will lead to an increase in demand for imports, *ceteris paribus*, worsening the country's net trade balance.

If the country's exchange rate strengthens then exports will become relatively expensive and imports relatively cheap. This would worsen the country's trade balance. However, if the competition is based on quality rather than price, then the changes in demand might not be significant and the trade balance might not suffer at all.

Students also need to understand how the economic performance of other economies affects the trade balance of a particular country. For example, a global recession will cause a country heavily dependent on exports is likely to suffer from a deterioration in its trade balance.

The degree of protectionism (i.e. restrictions on free trade such as tariffs) will have an impact on a country's net trade balance. Similarly, non-price factors, such as quality, will have an impact on a country's exports and imports

2.3.3 Aggregate supply (AS)

1. The characteristics of AS

a. The concept of AS

Aggregate supply (AS) is defined as the total amount of goods and services (real output) produced and supplied by an economy's firms at particular price level over a period of time.

b. The AS curve

The short-run aggregate supply curve (SRAS) might be shown as either a straight, upward sloping line or a static backward-bending L-shape (Keynesian).

c. The distinction between a movement along and a shift of the AS curve

Movements along an AS curve are caused when there is a shift in the AD curve resulting in a new equilibrium point. When there is an increase in AS at each price level, the whole AS curve will shift to the right. On the other hand, if there is a decrease in AS at each price level, the whole AS curve will shift to the left.

2. Short-run AS (SRAS)

a. Factors influencing SRAS

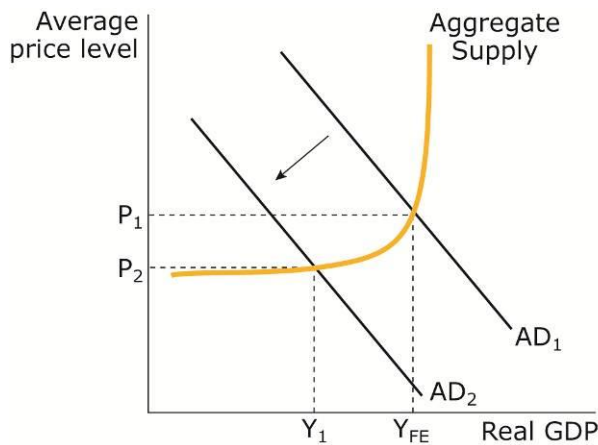
Short-run AS will be influenced by firms' costs of production; for example, a change in the price of oil or another major commodity/raw material. If the UK imports a raw material, then its cost will also be affected by the exchange rate. Changes in tax rates could cause a change in firms' costs of production and so cause a shift in the SRAS curve.

3. Long-run AS (LRAS)

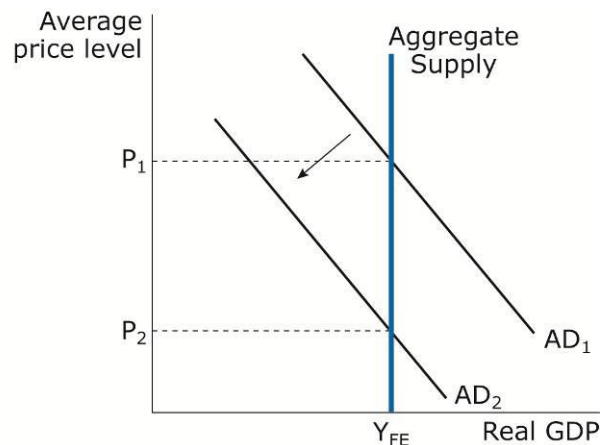
a. Different shapes of AS curve:

Students should understand that the classical LRAS curve is perfectly inelastic. Classical economists believe that in the long run all markets will clear, meaning that there can be no output gap in the long run, and instead the economy will always return to producing at its maximum potential level of output.

Conversely, Keynesian economists believe that it is possible to have a long-run equilibrium where markets do not clear and so there can be spare capacity in an economy in the long run. The shape of the Keynesian LRAS curve shows that when there is lots of spare capacity in the economy, it is possible to increase the level of real output with no resulting increase in the average price level. As spare capacity begins to be used up, a rise in real national output will cause the costs of the factors of production to rise, so the price level rises with output. Eventually, the economy will reach full employment, where output cannot be increased since all the factors of production are being utilised. This final section of the Keynesian LRAS curve is the same as the classical LRAS curve.



Keynesian LRAS curve



Classical LRAS curve

b. Factors influencing LRAS

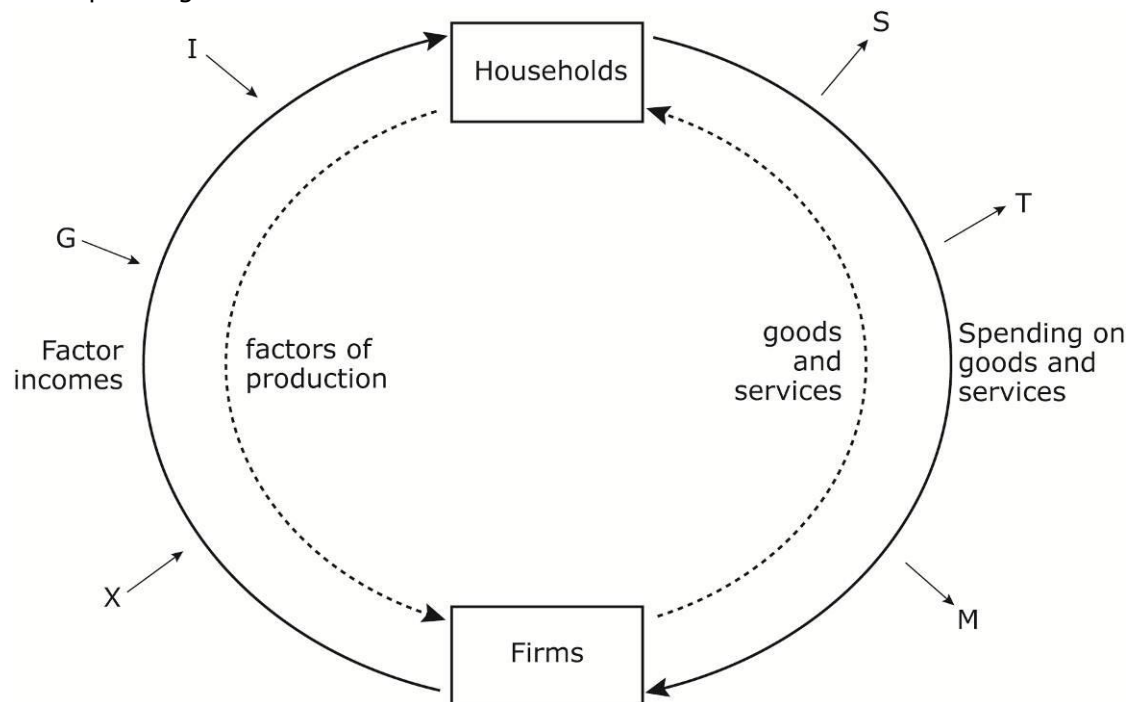
Long-run AS in an economy will be affected by a variety of factors including changes in the state of technology; change in productivity (output per worker per hour worked); changes in the quantity or quality of the factors of production; for example, improved education will (in time) increase the quality of labour in the economy and increase LRAS. Further, changes in government regulations, taxes and competition policy may also have a significant impact on LRAS. Also, changes in demography and net migration would influence LRAS. For example, an increase in immigration would increase the quantity (ignoring any effects on the average quality) of labour in the economy, also leading to an increase in LRAS.

2.3.4 National income

1. National income

a. The circular flow of income

A simple diagram of the circular flow of income could be used in this section:



The purpose of the diagram is to stress the concept of money flows, which are changed, with multiplied effects, when there is a change in injections or withdrawals.

b. The distinction between income and wealth

Students should understand the difference between income as a 'flow' concept, and wealth as a 'stock' and should be able to give some examples of both. They should also appreciate that if income increases are going to have a direct impact on wealth then a decision must be made to forego current consumption in order to enjoy increased welfare in the future – that is, the opportunity cost of the increased future welfare is current consumption.

2. Injections and withdrawals

a. The distinction between injections and withdrawals

Injections are additions to the circular flow of income and have a multiplier effect on national income. Withdrawals are leakages from the circular flow of income and will lead to a multiplied contraction of national income.

b. and c. Injections and Withdrawals

In the above diagram the injections are investment expenditure (I), government expenditure (G) and exports (X) whereas the withdrawals are savings (S), taxation (T) and imports (M).

d. The impact of net injections into, and net withdrawals from, the circular flow of income

When injections are greater than withdrawals the amount of money in the circular flow increases, representing economic growth. When injections are less than withdrawals the amount of money in the circular flow decreases, representing a fall in real GDP.

Students should be able to analyse changes in the economy in terms of their impact on the circular flow; for example, a rise in the interest rate would be expected to increase saving, a withdrawal, and decrease investment, an injection, reducing the amount of money in the circular flow of income, *ceteris paribus*.

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Students should be able to analyse changes in the economy in terms of their impact on the circular flow; for example, a rise in the interest rate would be expected to increase saving, a withdrawal, and decrease investment, an injection, reducing the amount of money in the circular flow of income, *ceteris paribus*.

3. Equilibrium level of real output

a. The concept of equilibrium level of real national output

Equilibrium income or equilibrium real national output occurs where planned AD equals planned AS.

b. Causes of changes in equilibrium real national output, as a result of shifts in AD and/or AS curves

Students are required to draw AD/AS diagrams to show the effects of changes in AD, SRAS and LRAS (Keynesian and classical) on the equilibrium price level and the equilibrium real national output level.

Any factors which cause a shift in the AD curve or in the AS curve will cause a change in the equilibrium real national output. For example a decrease in consumption will, *ceteris paribus*, cause a leftward shift in the AD curve and to a fall in real output and to a fall in the price level.

4 The multiplier

a. The multiplier and multiplier process

The multiplier ratio is the ratio of a change in equilibrium real income to the autonomous change (the injection) that brought it about. For example, if a £1m injection into the circular flow results in a £2m increase in national income, the value of the multiplier is 2.

An injection into the circular flow of income, such as the sale of exports, means that there is an immediate increase in AD. However, the extra income raised by selling goods and services abroad will increase the incomes of those making the goods and services and at least some of this income will be spent in the economy. Whatever is not withdrawn from the circular flow will cause second round increases in AD, which lead to further rounds of income and spending. These knock-on effects are the multiplier effects of injections. When injections decrease, the process works in reverse – i.e. there will be a downward multiplier effect.

b. Marginal propensities and their effects on the multiplier

The higher the value of the marginal propensity to consume (MPC), the higher will be the value of the multiplier.

Conversely, the value of the multiplier also depends on the size of the withdrawals from the circular flow: the marginal propensity to save (MPS) i.e. the proportion of the additional income that is saved by households; the marginal propensity to import (MPM) i.e. the proportion is spent on imported goods; and the marginal propensity to tax (MPT) i.e. the proportion of additional income that is paid to the government in the form of taxation.

c. Calculations of the multiplier using the formula $1/(1-MPC)$ and $1/MPW$, where $MPW = MPS + MPT + MPM$

The multiplier is inversely proportional to the marginal propensity to withdraw (MPW) – the proportion of one unit of additional national income which is withdrawn from the circular flow, or the sum of the marginal propensities to save, tax and import (MPS + MPT + MPM). Students will be expected to know the stated formulae and to perform simple calculations involving them.

d. The significance of the multiplier for shifts in AD and the level of economic activity

If the value of the multiplier is 3 then an increase in government expenditure would cause a larger rightward shift in AD than if the value of the multiplier is 2. In turn, the impact on economic activity would be greater when the value of the multiplier is higher than when it is lower.

2.3.5 Economic growth

1. Causes of growth

a. The distinction between actual and potential growth

Actual growth is measured as an increase in real GDP and potential growth is an increase in the capacity of the economy.

b. Actual growth caused by an increase in the components of AD

Economic growth can be achieved by increases in the components of aggregate demand; for example, an increase in investment. The size of this growth depends on the size of the multiplier and also on the shape of the AS curve drawn.

c. The importance of international trade for export-led growth

Some countries (for example, China) have generated economic growth through huge increases in the value of their exports – export-led growth.

d. Causes of potential growth:

Potential growth may be caused by a variety of factors including domestic investment and foreign direct investment (see section 2.3.2 above). Innovation refers to the process of translating an idea or invention into a good or service that creates value or for which customers will pay. Three types of innovation may be distinguished:

- a **product innovation** e.g. new goods or services put on sale;
- a **process innovation**, which changes the way a given good is produced within the firm or across a supply chain; and
- a **behavioural innovation**, when an organisational routine is replaced with new ones.

An increase in size of labour force, including net migration is a further way by which the productive potential of the economy would be increased. The degree of competition in economy could act as a spur to productivity and so increase the potential growth of the economy.

e. The importance of productivity for the rate of economic growth

Growth can also be achieved by improvements in the quality of any of the factors of production; for example, productivity growth.

The effect is to shift the AS curve to the right.

2. Benefits of growth

Students should explore the benefits of economic growth, such as:

- higher standards of living, as average incomes rise and more goods and services are available for consumption
- increased employment opportunities so helping to reduce unemployment
- increased revenues and profits for firms
- increased consumer and business confidence, leading to more investment
- higher tax revenues resulting in an improvement in the government budget balance and the possibility of improved public services such as health and education

3. Costs of growth

The costs of growth include

- the opportunity cost of growth – in order to produce more capital goods today, the production of consumer goods has to be sacrificed
- negative impact on the environment because negative externalities are created. Further, non-renewable resources are used up
- a worsening of the trade balance as consumers purchase more imports with their increased average incomes and increased inflationary pressures reduce the competitiveness of exports
- an increase in relative poverty/income inequality if the owners of factors of production benefit to a greater extent than those who do not own resources
- Growth may be associated with a high rate of inflation which could result in macroeconomic instability

4. Output gaps

a. The difference between actual growth rate and long-term trends in growth

Trends in the actual growth rate are shown by changes in real GDP over time. These may be compared with changes in long-term trends in the growth rate over time.

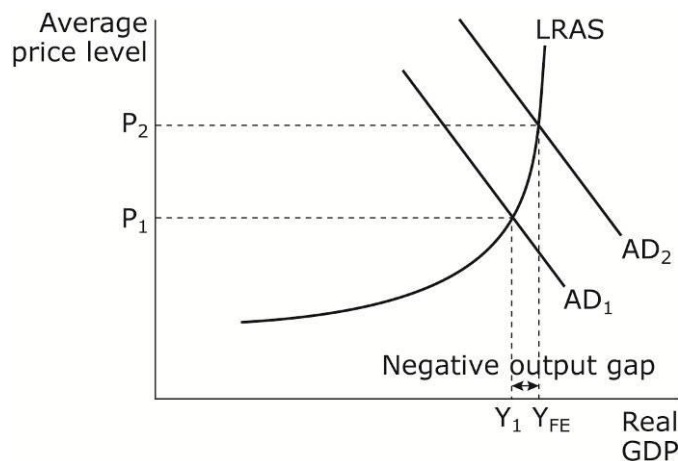
b. The distinction between positive and negative output gaps

The difference between actual real GDP and maximum potential real GDP is the output gap. If actual real GDP is less than potential real GDP, then there is a negative output gap. This signifies that the economy is operating with spare capacity and unemployment is likely to be relatively high.

In the short run, it may be possible for actual real GDP to be greater than potential real GDP: a positive output gap. In this case, the economy is operating at over-capacity and inflationary pressures are likely to be increasing.

An AD/AS diagram can be used to show the size of the negative output gap in an economy and students should be able to analyse how changes in the economy that affect AD and AS also affect the likely size of the output gap.

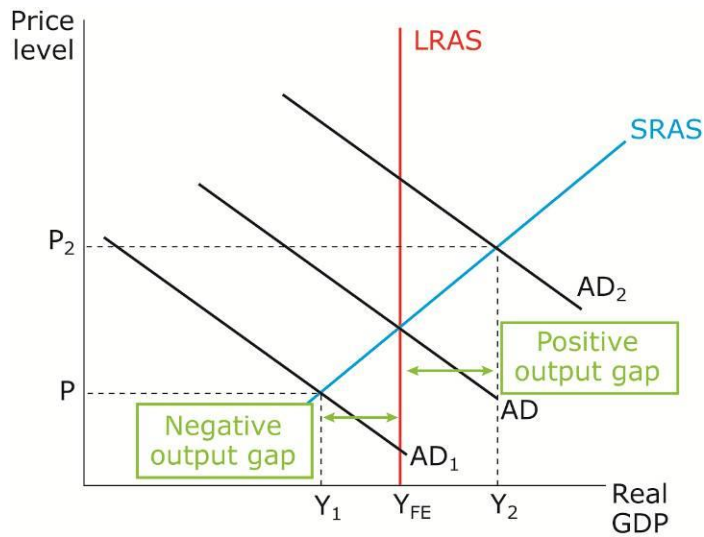
Keynesian economists believe that a negative output gap can exist in the long run as well as the short run:



Classical economists believe that negative and positive output gaps can only exist in the short run:

4. Output gaps (continued)

b. The distinction between positive and negative output gaps (continued)



c. Characteristics of positive and negative output gaps

Positive output gaps are characterised by the following features:

- A falling rate of inflation
- A relatively high unemployment rate
- Downward pressure on wage rates

Negative output gaps are characterised by the following features:

- An increasing rate of inflation
- A falling rate of unemployment
- Upward pressure on wage rate

d. Difficulties of measuring output gaps

In practice, it is very difficult to estimate the size of the output gap for economy because it involves estimating the economy’s maximum potential output level.

2.3.6 Macroeconomic objectives and policies

1. Macroeconomic objectives

An awareness of the key macroeconomic objectives of governments should be understood. These include economic growth, low and stable inflation, low unemployment, balance of payments equilibrium on current account, balanced government budget, and greater income equality.

The side effects of macroeconomic problems could be considered and the changing importance of objectives might be used as ways of weighing up which objectives are the most important to a government.

2. Possible conflicts between macroeconomic objectives

a. Inflation and unemployment, including the short-run Phillips curve

The Phillips curve, an empirical observation in 1958, comments that a shortage of labour might set off an increase in wages. The implication is that there might be a trade-off between reductions in unemployment and increases in inflation. This is set against the classical view that there is only unemployment if wages are too high – that is, if the supply of labour is greater than the demand for labour – in which case if more people are allowed to become unemployed the pressure on wages will fall. Knowledge of the short-run Phillips curve only is required.

b. Economic growth and protection of the environment

Growth may damage the environment if it involves increased manufacturing but if service based it may not. Indeed, the increased incomes from growth might enable a country to convert to cleaner or renewable fuels or tighten environmental legislation.

c. Inflation and equilibrium on the current account of the balance of payments

Another trade-off that may be considered is between inflation and the current account of the balance of payments. If there is a relatively high rate of inflation, it is likely that the economy will suck in many imports and exporters may face reduced demand for their goods and services. (Note that specific knowledge of country-specific data is not required.)

d. Economic growth and income equality

See section 2.3.5 above.

There are many more potential conflicts between objectives and in particular students should be confident in using AD/AS analysis to explain, illustrate and evaluate these.

3. Macroeconomic supply-side policies

a. **Supply-side policies designed to increase productivity, competition and incentives**

A supply-side policy is a government scheme to promote market forces, cut costs and to raise the full employment level of output.

b. **Free market policies**

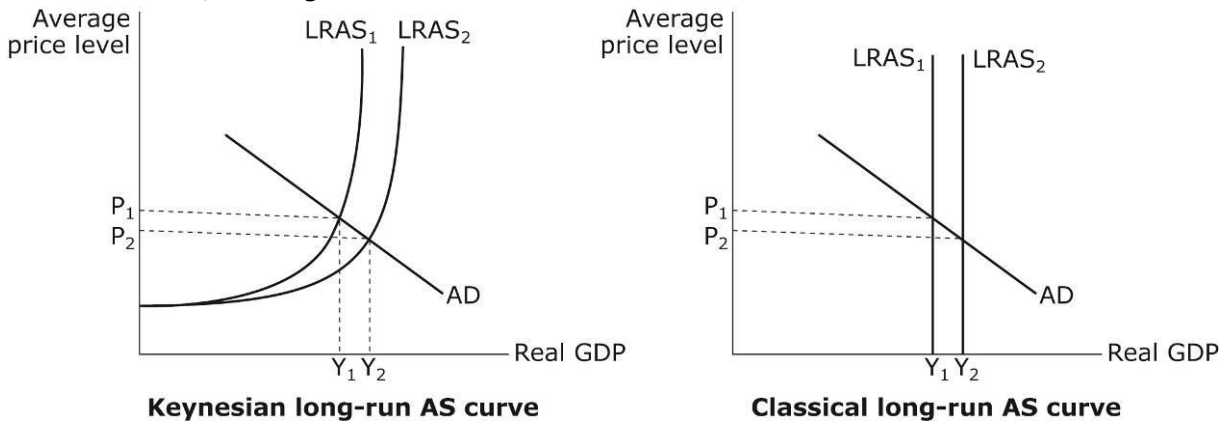
Market-based policies focus on the power of the free market, or allowing the forces of supply and demand to eliminate equilibria imbalances. The role of the government in market-based policies is limited since it tends to interfere with the market mechanism.

These free market policies include deregulation of product and labour markets; privatisation; reduction in taxation; changing the levels of welfare payments; cutting the costs of bureaucracy for firms.

c. **Interventionist policies**

Interventionist policies focus on the ways by which a government to intervenes in markets to achieve its macroeconomic goals. Interventionist policies include investment in education; training and skills; incentives to encourage investment such as tax incentive or subsidies; infrastructure investment finance for business start-ups; and regional policy.

Students should be able to show the likely impact of successful supply-side policies using either a Keynesian or a classical long-run aggregate supply curve on an AD/AS diagram:



d. **Strengths and weaknesses of different supply-side policies**

Students should be able to discuss the likely strengths and weaknesses of supply-side policies. When doing so, they should be careful to relate their analysis to the achievement of the stated aim of the policy.

4. Macroeconomic demand-side policies

a. Demand-side policies

- **The distinction between fiscal and monetary policy**

Students should understand that monetary policy involves using interest rates and the money supply to affect AD, while fiscal policy involves government spending and taxation. In the UK, monetary policy is currently conducted by the Bank of England, while fiscal policy is conducted by the Government.

- **The distinction between reflationary and deflationary policies**

Reflationary policies refer to those designed to increase the level of aggregate demand in an economy whereas deflationary policies refer to those designed to decrease the level of aggregate demand in an economy.

b. Fiscal policy instruments:

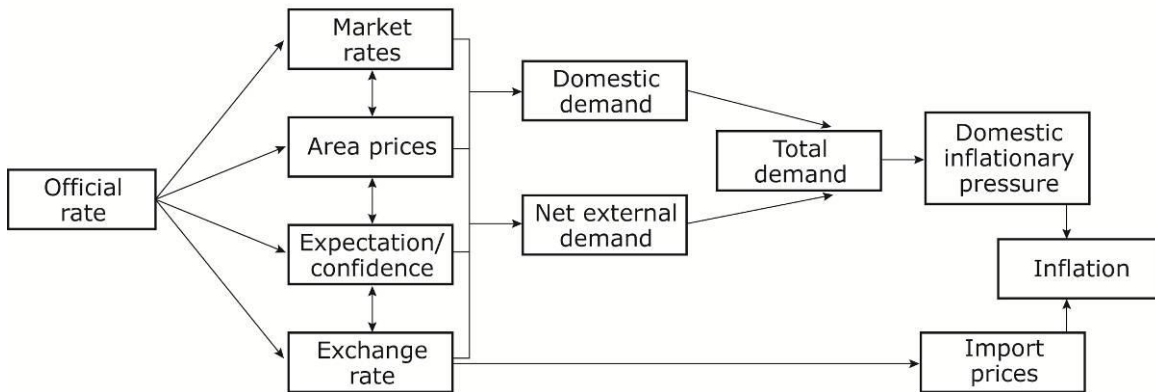
The two instruments of fiscal policy are government spending and taxation. The operation of fiscal policy involves the government changing the levels of these two variables so as to affect the economy.

c. Monetary policy instruments:

- **interest rates**

The following diagram shows the transmission mechanisms involved with changes in a central bank’s official base interest rate:

The transmission mechanisms of monetary policy



Note: for simplicity this figure does not show all interactions between variables, but these can be important.

- **asset purchases to increase money supply (quantitative easing)**

Students should have a basic knowledge of how quantitative easing has been used in various countries and how the resulting increases in the money supply would be expected to affect aggregate demand.

- **changes in lending criteria**

These might involve changes in the deposit required; the maximum amount that a bank would lend; and the maximum lending age of a customer.

- **reserve asset (liquidity) requirements.**

Most central banks oblige depository institutions to hold minimum reserves against their liabilities, predominantly in the form of balances at the central bank. The main purposes for reserve requirements include control of the money supply and ensuring banks have sufficient liquid assets.

4. Macroeconomic demand-side policies (continued)

d. The role of central banks in the conduct of monetary policy:

The key functions of central banks should be considered:

- Implementation of monetary policy with the use of monetary policy instruments (see previous section).
- Achieving an inflation target – the ways by which countries attempt to achieve their inflation targets, as indicated in the previous section, should be considered
- Banker to the government – central banks perform various banking services such as handling accounts of government departments and making short-term advances to the government.
- Banker to the banks – lender of last resort – if banks run into liquidity problems they may be able to borrow direct from the central bank.

e. Strengths and weaknesses of different demand-side policies

Students should be able to use AD/AS analysis to explain and illustrate the effects of demand-side policies and to discuss their likely strengths and weaknesses. When doing so, they should be careful to relate their analysis to the achievement of the stated aim of the policy.

Unit 3: Business behaviour

3.3.1 Types and size of businesses

1. Types of businesses

Students should understand the different types of private sector organisations including sole proprietors, partnerships and private and public joint stock companies. Private sector organisations may also include for-profit and not-for-profit organisations, co-operative societies and joint ventures (where two or more businesses, form a partnership to share markets, intellectual property, assets, knowledge, and profits.)

The distinction between private sector organisations and state-owned (public sector) organisations should be understood.

2. Size of businesses

a. The size of businesses

An understanding of the distinction between small and medium-size businesses (usually defined as those with less than 500 employees) and large corporations (those with more than 500 employees) should be understood.

b. How businesses grow

- Organic growth is where a business grows internally by reinvesting profits or borrowing from banks. Reasons for internal growth include: to increase market share; the development of new innovative products, finding new markets to sell its existing products, getting existing customers to buy more products through advertising or investing in new capital or technologies to expand production.
- Forward and backward vertical integration is where two businesses at different stages of production, but in the same industry, join together. Forward vertical is where one firm integrates with a firm in a stage of production closer to the customer.
- Backward vertical integration is where a firm integrates with another in the stage of production further away from the customer, such as a car manufacturer buying a tyre manufacturer.
- Horizontal integration is where two businesses at the same stage of production in the same industry join together, such as a merger between two banks or two chocolate manufacturers. Examples include Virgin Money and Northern Rock, and Amazon and LoveFilm.
- Conglomerate integration is where two businesses in different industries merge. For example, Tata's acquisitions in different sectors including Jaguar Land Rover, Corus, Ritz-Carlton hotels, British Salt, Citigroup and Tetley.

2. Size of businesses (continued)

c. Advantages and disadvantages of each type of merger/takeover

- Vertical integration – advantages include greater control over the supply chain resulting in reducing costs and improving quality, and better access to raw materials; disadvantages include different cultures in businesses and diseconomies of scale.
- Horizontal integration – advantages include economies of scale, spreading risk, allowing rationalisation and reducing competition; disadvantages include different cultures in businesses and diseconomies of scale.
- Conglomerate integration – advantages include reducing risk by operating in different markets and benefiting from knowledge from the other market; disadvantages include the requirement for different skills, not necessarily benefiting from economies of scale and cultural difference.

d. Constraints on business growth

Students need to consider constraints on business growth, including the size of the market, limited access to finance, owner objectives and regulation.

e. Reasons some firms tend to remain small and others grow

Some firms remain small for the reasons outlined in the last section. Other firms grow to benefit from economies of scale, to gain market Share and monopoly power.

f. Impact of growth of firms on businesses, workers and consumers

Some effects of the growth of firms are identified below:

- On businesses – allows firms to increase market share, benefit from economies of scale and gain higher profits. However, the firm might suffer from diseconomies of scale.
- On workers – increased job security as a large firm might offer greater security than a small firm, possibility of higher wages if the firm is more profitable. However, increased mechanisation might result in few new jobs and little job security.
- On consumers – lower prices if the firm benefits from economies of scale but not if the firm gains monopoly power.

g. Demergers

A demerger is when a business sells off one or more of the businesses that it owns into a separate company. Reasons for demergers include: cultural differences, creating more focused firms, protecting the value of the firm, reducing the risk of diseconomies of scale, raising money from asset sales and return to shareholders to meet requirements of competition authority regulators. Examples include the Foster's Group demerging its wine and beer divisions and Lloyds TSB Banking Group demerging to create two separate banks – TSB and Lloyds Bank.

The impact of demergers on businesses, workers and consumers should be considered:

- businesses – allowing focus on the core business, raising funds from selling part of the business, removing loss-making parts of the business
- workers – increased job security if loss-making parts of the business are demerged, reduced conflict between cultures, increased focus on the business to enable it to be more profitable
- consumers – greater competition leads to lower prices, more focused businesses are able to better meet consumer needs.

3 Business objectives

a. Different business objectives:

- profit maximisation
- revenue maximisation
- sales volume maximisation.
- behavioural theories: satisficing.

Students should consider what motivates a firm and the main participants and influencers of firms, including owners, directors and managers, workers and consumers.

The assumption of rationality means that shareholders will seek to maximise their utility by **maximising profits**. Profit maximisation occurs where Marginal Revenue is equal to Marginal Costs ($MR=MC$).

As shareholders will be motivated by maximising their dividend to maximise their profits from the company, it is assumed that the firm will want to maximise its profits. However, when pricing according to $MR=MC$ firms may find they are loss-making.

Keynesian economists believe that firms will try to maximise their long-run rather than short-run profits. This is based on firms using cost-plus pricing where firms calculate the average cost and add a mark-up. Firms will adjust price and output in response to changes in market conditions. However, rapid price changes may affect a firm's position in the market. Consumers dislike rapid price changes, and may see price reductions as signs of a firm's desperation and distress. So rather than adjusting prices rapidly they will continue to charge the current price and may make a loss in the short term but will adjust the price to the profit maximising point in the long term.

Some managers will want to maximise their utility by making as much revenue as possible. **Revenue maximisation** is where the business makes the maximum revenue and occurs where Marginal Revenue = 0 (zero).

Like shareholders, managers will also seek to maximise their utility. Managers are often paid a salary that is linked to the amount of sales they achieve. To maximise their own utility they will seek to **maximise the volume of sales** so they achieve a higher salary. Sales maximisation is where the business makes the maximum sales possible while still breaking even. This occurs where Average Revenue = Average Cost ($AR=AC$).

Managers may be motivated by high salaries, the number of people under their control and the availability of fringe benefits. They may, therefore, pursue policies other than profit maximisation. However, if they ignore profit shareholders can revolt, and may vote out the managers. So often managers will **profit satisfice** where they satisfy the demands of shareholders. Once those demands have been met, managers would be free to maximise their own rewards from the company – they will do just enough to satisfy the shareholders and avoid being dismissed. This means they are likely to give an outcome somewhere between profit maximisation and sales maximisation.

b. The significance of the divorce of ownership from control for business objectives: the principal-agent problem.

Students need to consider the significance of the divorce of ownership from control. Shareholders own the business and appoint directors and managers to run it on their behalf. Shareholders want to maximise profits to maximise their dividends, whereas managers might have different motives, such as wanting to increase sales and revenue at the expense of profits. This divorce of ownership creates the principal-agent problem. The principal is the shareholder and the agent is the manager and their divergent aims. This may lead to the business growing larger than a firm aiming to maximise profit.

3. Business objectives (continued)

c. Formulae for different business objectives:

profit maximisation - the output at which marginal cost (MC) = marginal revenue (MR)

revenue maximisation - the output at which marginal revenue (MR) = 0

sales volume maximisation - the output at which average cost (AC) = average revenue (AR)

3.3.2 Revenue, costs and profits

1. Revenue

a. **Formulae to calculate and understand the relationship between:**

$$\text{total revenue} = \text{price} \times \text{quantity}$$

$$\text{average revenue} = \text{total revenue} \div \text{quantity}$$

$$\text{marginal revenue} = \text{change in revenue} \div \text{change in quantity}$$

The relationship between these revenue concepts should be understood numerically and diagrammatically.

b. **Price elasticity of demand and its relationship to revenue concepts, including calculations**

The PED along a demand/average revenue curve and its relationship to total revenue should be understood diagrammatically and numerically. In particular:

- when demand is price elastic, a change in price will cause total revenue to move in an opposite direction.
- when demand is price inelastic, a change in price will cause total revenue to move in the same direction.
- when demand is unitary elastic, a change in price will leave total unchanged.

2. Costs

a. **Derivation of short-run cost curves from the assumption of diminishing marginal productivity**

In the short run, some factors of production are fixed. From this, they need to understand the assumption of diminishing marginal productivity. Cost curves are needed here.

b. **The law of diminishing returns**

If a firm increases output by adding another unit of the variable factor to fixed factors then eventually diminishing marginal returns will set in. In other words, at some point an extra unit of the variable factor will add less output to the total than the previous worker.

N.B. This should be understood as a short-run concept since it is assumed that there is at least one fixed factor of production.

c. **Formulae to calculate and understand the relationship between:**

Students are required to know the formulae for each of the following:

$$\text{total cost} = \text{total fixed cost} + \text{total variable cost}$$

$$\text{total variable cost} = \text{variable cost} \times \text{quantity}$$

$$\text{average (total) cost} = \text{total cost} \div \text{quantity}$$

$$\text{average fixed cost} = \text{total fixed cost} \div \text{quantity}$$

$$\text{average variable cost} = \text{total variable cost} \div \text{quantity}$$

$$\text{marginal cost} = \text{change in cost} \div \text{change in quantity}$$

Students should understand the relationship between the different costs both numerically and diagrammatically.

2. Costs (continued)

d. Relationships between:

- marginal product and marginal costs: when marginal product is increasing, marginal cost will be falling; when marginal product is decreasing, marginal cost will be rising.
- average product and average cost: when average product is increasing, average cost will be falling; when average product is decreasing, average cost will be rising.
- total product and total cost: when total product is increasing at an increasing rate, total cost will be rising but at a decreasing rate; when total product is rising at a decreasing rate, total cost will be rising at an increasing rate.
- short-run and long-run costs:

In the short run some inputs are fixed, while in the long run all inputs are flexible. In the long run, a firm will use the level of inputs that can produce a given level of output at the lowest possible average cost. Therefore, the long-run average cost (LRAC curve) is the envelope of the short run average cost (SRAC) curves.

3. Economies and diseconomies of scale

a. The relationship between long-run cost curves and economies/ diseconomies of scale

Economies of scale are associated with falling long-run average costs of production whereas diseconomies of scale are associated with rising long-run average costs of production.

b. Minimum efficient scale.

An understanding of the minimum efficient scale is also required. Students should draw long-run average cost curves to show economies and diseconomies of scale as well as being able to identify the minimum efficient scale.

c. Distinction between internal/external economies of scale

Internal economies of scale are those which benefit an individual firm as it grows in size. External economies of scale are those benefits to firms which result from the expansion of the whole industry.

d. Sources of internal economies of scale

There are several types of internal economies of scale including financial, technical, managerial, marketing, purchasing and risk bearing.

e. Sources of external economies of scale:

These include availability of skilled labour, access to transport links and sharing knowledge.

f. Sources of diseconomies of scale

Diseconomies of scale are associated with an increase in long-run average costs. They may arise from communication problems, coordination problems and from X-inefficiency.

4. Profits and losses

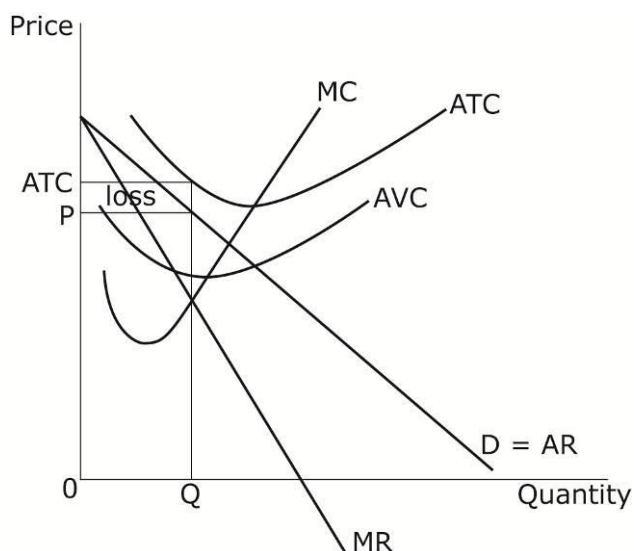
a. The distinction between normal profit, supernormal profit and losses

Students need to know what is meant by normal profits. Fundamental here is the idea of opportunity cost. It is useful to explain that this forms part of the costs. Supernormal profits refer to any profit in excess of normal profit. Being able to identify profits and losses will be useful when considering market structures in Section 3.3.3.

b. Short-run and long-run shutdown points

The short-run shut-down point occurs when average variable costs equal average revenue ($AVC=AR$). If $AR>AVC$ then each additional unit sold will reduce the size of any losses and go towards covering fixed costs. The firm will be better off continuing to operate as they will be reducing the size of their losses. Firms will shut down when $AVC>AR$ because every additional unit sold will add to losses. The long-run shut-down point occurs when average (total) costs equal average revenue ($ATC=AR$). If $AR>ATC$ then each additional unit sold will add to profits. The firm will be better off continuing to operate. Firms will shut down when $ATC>AR$ because every additional unit sold will add to losses.

In this diagram the firm will profit maximise where $MR=MC$ and the price charged is P and quantity Q . In the short run they will continue to operate as $AR>AVC$. In the long run $ATC>AR$ so this firm will shut down.



When profit maximising the price charged is P and quantity Q . In the short run $AR=AVC$, so the firm is at the shut-down point. In the long run $ATC>AR$ so this firm will shut down.

3.3.3 Market structures and contestability

1. Efficiency

An understanding of the various types of efficiency is required:

- Allocative efficiency is where price equals marginal costs.
- Productive efficiency is where average costs are at their lowest point.
- Allocative and productive efficiencies are static in the short term. Dynamic efficiency looks at how, over the long term, new technology and productive techniques can increase the productive potential of firms.
- X-inefficiency is where firms find themselves with average costs that are higher than they could be. Students should be able to identify causes of such efficiencies.
- Students should consider the efficiencies and inefficiencies in the different market structures they explore in this section.

2. Concentration ratio

a. Calculation of n-firm concentration ratios

Students should be able to calculate concentration ratios and be able to identify the likely market structure and the significance

b. The significance of concentration ratios

Concentration ratios give an indication of the market structure under which a firm is operating. A high concentration ratio might provide an incentive to work together through collusive agreements.

3. Perfect competition

a. Assumptions of perfect competition

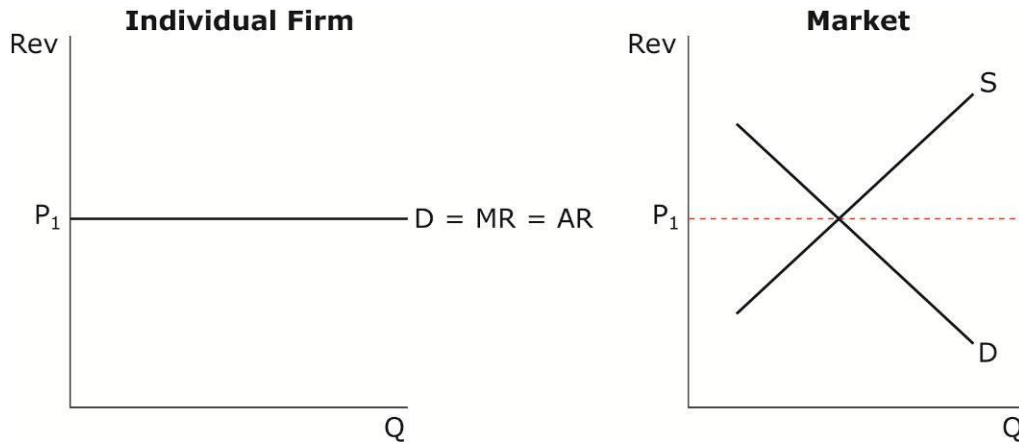
Perfect competition exists in a market where there is a high degree of competition. A perfectly competitive market must possess four characteristics: there are many buyers and sellers, none of whom is large enough to influence price; there are no barriers to entry and exit from the industry; buyers and sellers possess perfect knowledge of prices; the products are homogenous. There are few industries that meet all of these characteristics – an example is the foreign exchange market.

b. Profit maximising equilibrium in the short run and long run

Perfect competition has a large number of suppliers in the market. A firm can expand or reduce output without influencing price. The price is determined by the market because the individual firm is too small to influence price and is a price-taker. Students need to explain and show diagrammatically the relationship between the market and the firm. The horizontal demand curve is also the firm's average and marginal revenue curves. If a firm sells all its output at the market price, then this price must be the average price or revenue. In addition, each extra item sold will receive the same price for each additional unit and, therefore, marginal revenue will be the same as average revenue. The perfectly competitive firm's demand curve:

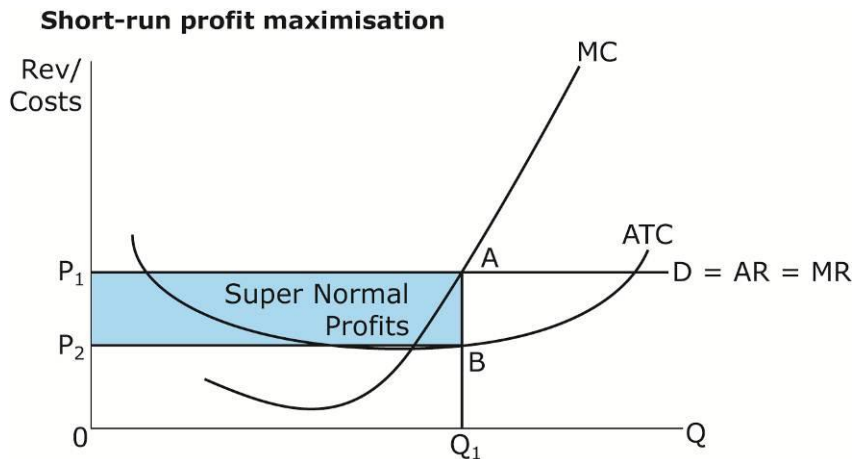
3. Perfect competition (continued)

b. Profit maximising equilibrium in the short run and long run (continued)



In a perfectly competitive market, the supply curve for a firm is the marginal cost curve above the average variable cost in the short run, and the average total cost in the long run. The marginal cost of production – the change in total cost resulting from the sale of one more unit – represents the additional cost of supplying one more unit of output.

In perfect competition, we assume firms are profit maximisers and produce where marginal cost is equal to marginal revenue ($MC=MR$). Perfectly competitive firms can make supernormal profits in the short run. In this diagram the horizontal demand/average revenue curve is shown to be above the average total cost at the point where $MC=MR$ (point A). At Q_1 the firm charges P_1 , but faces only average costs of P_2 . The firm will make supernormal profits shown by the shaded area (P_1P_2AB).

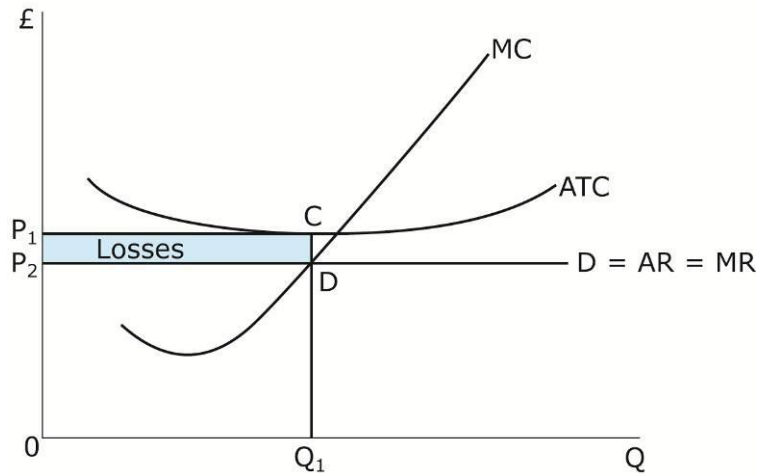


The diagram below shows short-run firm-making losses. The firm is profit maximising where $MR=MC$. The price charged is P_2 and average costs P_1 . This brings about losses equal to P_1P_2CD .

3. Perfect competition (continued)

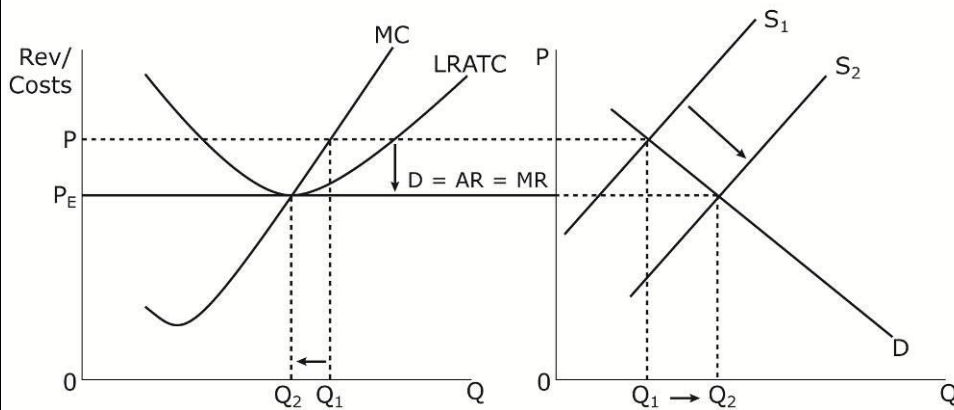
b. Profit maximising equilibrium in the short run and long run (continued)

Short-run firm making losses



If a firm makes supernormal profits in the short run, other firms would have the incentive to enter the market (and could do so owing to lack of barriers to entry in perfect competition). The entry of new firms stimulates an increase in supply from S_1 to S_2 , with the demand curve for the firm shifting down and the price shifting down to P_E . The firm is now making normal (not supernormal) profit.

Long-run equilibrium position of a firm in an industry facing short-term super normal profits

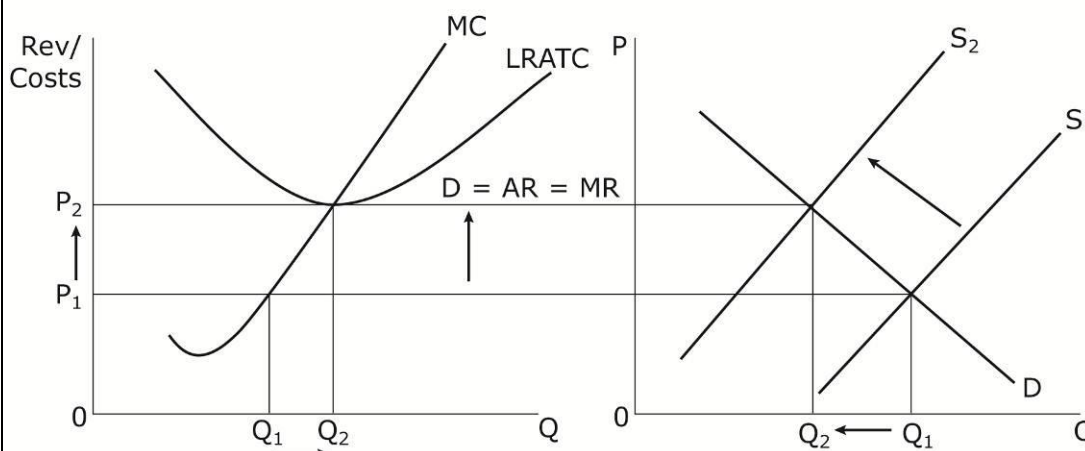


If a firm is making losses in the long run, some firms would leave the industry as there are no barriers to exit. As a result, total supply falls from S_1 to S_2 . At S_1 , the firm makes a loss. At S_2 , the demand shifts upwards as firms leave the markets leading to normal profits.

3. Perfect competition (continued)

b. Profit maximising equilibrium in the short run and long run (continued)

Long-run equilibrium position of a firm in an industry facing short-term losses



c. The short-run shutdown point

As explained above, the short-run shut-down point occurs when average variable costs equal average revenue ($AVC=AR$).

d. Productive and allocative efficiency in the short run and long run.

Perfectly competitive firms will be allocatively efficient both in the short run and in the long run because price=marginal cost.

However, perfectly competitive firms will only be productively efficient in the long run (when average costs are at their lowest point).

4. Monopolistic competition

a. Assumptions of monopolistic competition

The assumptions for monopolistic competition are that: there are a large number of small firms; there are low barriers to entry and exit; and firms produce similar but differentiated products.

b. Types of product differentiation

These include physical – product features; marketing – advertising, packaging; and distribution – shop, online, telephone.

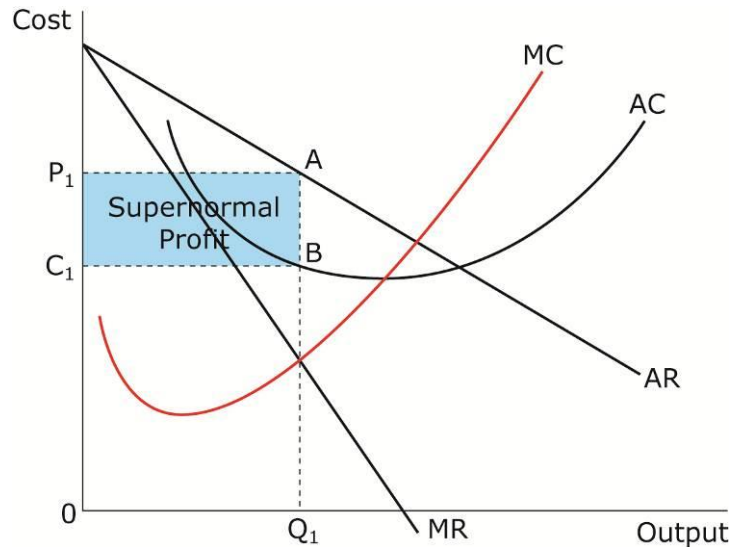
c. Profit-maximising equilibrium in the short run and long run

Product differentiation means there is a downward sloping curve because firms have some market power. They can change price and will not lose all customers. The firm will profit maximise and produce where $MC=MR$ so will produce at an output level of Q_1 and charge price P_1 .

4. Monopolistic competition (continued)

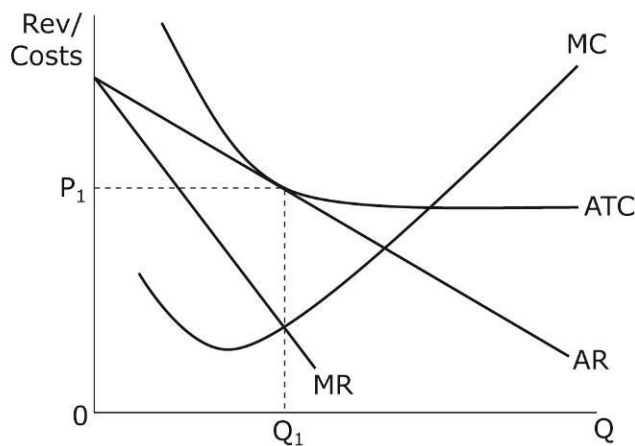
c. Profit-maximising equilibrium in the short run and long run

The monopolistically competitive firm in the short-run making supernormal profits



In the long run, supernormal profits will be eroded because new firms will enter the market owing to lack of barriers to entry. The entry of new firms will increase supply, shifting the average revenue curve downwards to the point where $AR=AC$, as in the diagram. If the firm was making a loss, it would leave the industry, reducing supply and shifting the AR curve upwards again to a point where $AR=AC$. Therefore, in the long run, a monopolistically competitive firm can make neither supernormal profits nor losses.

The monopolistically competitive firm in long-run equilibrium



d. Productive and allocative efficiency in the short run and long run

As can be seen from the above diagrams a monopolistically competitive firm will be neither allocatively efficient nor productively efficient in the short-run or in the long-run.

5. Oligopoly

a. Assumptions of oligopoly

The assumptions of oligopoly are that there is a high concentration ratio; firms in the market are interdependent i.e. the actions of one firm will impact on other firms in the industry; there are high barriers to entry and exit; and firms may produce similar or differentiated products.

b. Barriers to entry and exit:

Barriers to entry are obstacles that limit a firm’s ability to enter, set up or extend into new markets. Barriers to entry include economies of scale; limit pricing; legal barriers e.g. patents; branding. Barriers to exit are factors that prevent firms leaving a market or, when a firm is making a loss, make it more unprofitable to leave. Examples of this include sunk costs – costs that are irretrievable – such as advertising.

c. Interdependence of firms:

- **Simple game theory – two firm/two outcome model**

Game theory can be used to predict how firms might behave. It is used to explain why firms may collude and why collusive agreements may break down. The prisoner’s dilemma can be used as a basis to explain the way that game theory can be used by firms. The model assumes a zero sum game – that there will be a winner and a loser. Also assumed is that the firms do not know what decision each is making, although they do know the potential outcome of each action. In the following example, the 2 firms, X and Y, know that it is mutually beneficial for them to collude to set the price at £2. However, if there is no collusion and they don’t trust each other, they will both set a price of £1.80.

		Firm X	
		£2	£1.80
Firm Y	£2	A Each gets £10m	C Firm Y £5m Firm X £12m
	£1.80	B Firm Y £12m Firm X £5m	D Each gets £8m

- **Reasons for collusive and non-collusive behaviour**

Firms operating in oligopoly industries tend to keep prices stable. They know that the actions of one firm will impact on the other firms in the industry, in other words, they are interdependent. If one firm were to raise its prices, the others would not follow, and because the goods traded are similar, customers will move to the lower cost option. If a firm were to lower prices, then other firms would follow suit and a price war would result, with no real gain for any of the firms in the industry. Instead, there is an incentive for oligopoly firms to work together through collusive agreements. However, if there is uncertainty and no trust between the firms then there will be no collusion. Further, collusion is illegal in many countries and those firms involved and their directors could face legal action.

- **Cartels**

This is a form of collusion in which firms agree to fix prices.

- **Price leadership**

If there is a low-cost dominant firm in the industry then it may set the price in the industry with the other higher-cost firms following suit.

5. Oligopoly (continued)

c. **Interdependence of firms:** (continued)

• **Price wars**

If a firm lowers its prices, then other firms would follow suit (since they are interdependent), resulting in a price war – no firm would gain from this.

d. **Costs and benefits of collusion to producers, consumers, workers and governments**

The impact of collusion should be considered, for example, on profits; wages to employees; prices paid by consumers; the level of investment by firms; and on the quality of goods and services. Governments might also adopt policies to restrict the activities of firms involved in collusive behaviour.

e. **Price competition**

This may take several forms, for example, price wars (see above); predatory pricing where a firm might set a price below average cost in order to drive out other firms in the industry; and limit pricing where an incumbent firm sets a price low enough to deter new entrants into the industry.

f. **Non-price competition**

To avoid price-wars, firms in oligopolistic markets may compete using methods other than price competition. Non-price competition can take many forms including advertising and branding; quality; product endorsement; product placement; and after-sales service.

g. **Costs and benefits of price and non-price competition to firms, consumers, employees and suppliers**

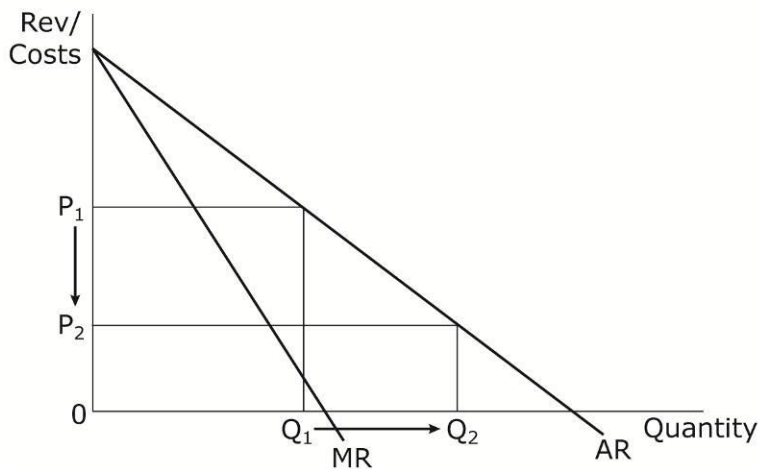
The impact of price and non-price competition should be considered, for example, on profits; wages to employees; prices paid by consumers and to suppliers; the level of investment by firms; and on the quality of goods and services.

6. Monopoly

a. Assumptions of monopoly

A monopoly is assumed to: be the only firm in the industry; have high barriers to entry, preventing new firms from entering the market; and be a short-run profit maximiser. Since a monopoly firm is the same as the industry as it is the only firm in the market, it faces a downward sloping demand curve and can set the level of price or output.

The monopolist's average revenue and marginal revenue curves



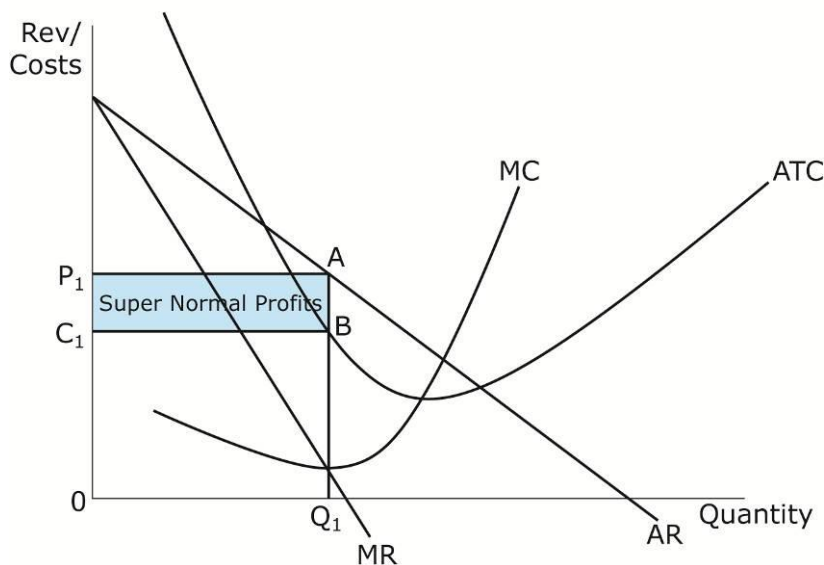
b. Barriers to entry and exit

Barriers to entry are obstacles that limit a firm's ability to enter, set up or extend into new markets. Barriers to entry include economies of scale; limit pricing; legal barriers e.g. patents; branding.

c. Profit maximising equilibrium

A monopolist profit maximises where $MC=MR$. The diagram shows the equilibrium profit maximising level of output at Q_1 , with a price of P_1 . Supernormal profits are equal to P_1C_1BA .

Profit-maximising monopolist



6. Monopoly (continued)

d. Costs and benefits of monopoly to firms and consumers

Benefits of monopoly	Costs of monopoly
Supernormal profit means: <ul style="list-style-type: none"> • finance for investment to maintain competitive edge • reserves to overcome short-term difficulties and provide funds for research and development. 	Supernormal profit means: <ul style="list-style-type: none"> • less incentive to be efficient and to develop new products • efforts are directed to protect market dominance.
Monopolists can take advantage of economies of scale, which means that average costs may still be lower than the most efficient average of a small competitive firm.	Monopolies lead to a misallocation of resources by setting prices above marginal cost.
Monopolists can take advantage of economies of scale, which means that average costs may still be lower than the most efficient average of a small competitive firm.	Monopolies lead to a misallocation of resources by setting prices above marginal cost.
Cross-subsidisation may lead to an increased range of goods or services available to the consumer.	Monopolists do not produce at the most efficient point of output (i.e. at the lowest point of the average cost curve).
Monopolists avoid undesirable duplication of services and therefore a misallocation of resources.	Also, monopoly power means higher prices and lower output for domestic consumers.

e. The concept of 'natural monopoly' and its implications

Some industries are referred to as natural monopolies because economies of scale are so large so that long run average costs are falling continuously. Consequently, new entrants would find it impossible to match the costs and prices of the established firm and so competition is unlikely.

6. Monopoly (continued)

f. Conditions necessary for third-degree price discrimination

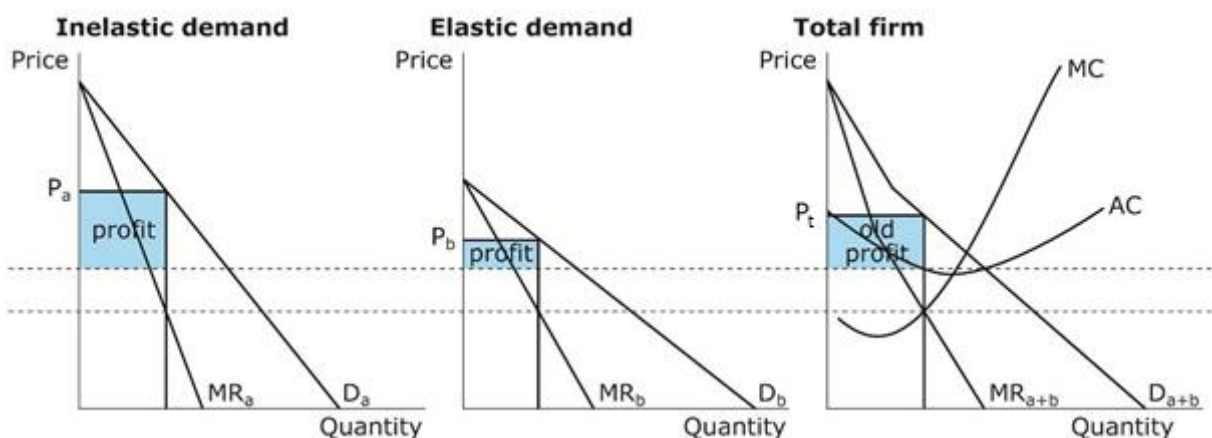
Third degree price discrimination is when a business charges different groups of customers different prices for the same product. For example, discounted rail fares for students. For price discrimination to be possible 3 conditions must be met:

- market power – price discrimination can only take place when the firm has the ability to vary the price (such as a monopoly)
- information – it must be possible to distinguish between different customers' willingness to pay
- limited ability to resell – consumers cannot resell the product

A key condition is that there are two markets – one with inelastic demand and the other with elastic demand. The 'total firm' diagram shows that a profit maximising firm will have price P_t and earn supernormal profit equal to the area old profit. Where $MR=MC$ in the inelastic demand market this is profit maximising and gives price P_a and profit marked by the blue shaded area.

The elastic demand market sees price P_b and profit marked by the blue area.

Combining these two profits should generate more profit for the firm than profit maximising without price discriminating.



g. Costs and benefits of price discrimination to firms and consumers

Monopolists may undertake price discrimination to raise producer surplus and reduce consumer surplus. Price discrimination may raise total revenue to a point that allows survival of a product or service. Higher profits made a firm practising price discrimination may be used to improve the quality of existing products and/or to develop new products.

h. Productive, allocative and dynamic efficiency

Profit-maximising monopolies are not allocatively efficient because price > marginal cost. They are also not productively efficient because output will not be at the lowest point on the average cost curve. However, given that monopolies may be making supernormal profits, they may be dynamically efficient as a result of investment in new technology which would reduce average cost in the long term.

7. Monopsony

a. Assumptions and conditions for a monopsony to operate

A monopsony exists when there is one buyer in the market. There are few pure monopsonists; for example, a government might dominate the market for hiring teachers. Monopsonists are profit maximisers – they aim to minimise costs by paying suppliers the lowest possible price. Monopsonists will pay lower prices to suppliers than if the market was competitive but suppliers will also supply less to the market.

b. Costs and benefits of a monopsony to firms, consumers and employees.

	Benefits	Costs
Monopsony firms	Lower costs – cost minimisation supports firms in making more profits.	The relationship with the supplier may worsen, the monopsonist may drive their supplier out of business.
Consumers	Lower prices – the monopsonist pays the minimum it can.	The supplier may have to cut corners or lower quality to lower its costs to remain profitable.
Employees	In minimising costs of raw materials it leaves more funds to pay its staff.	May question the ethics of the way their firm is acting.
Suppliers to monopsonists	When the supplier has market power as a monopolist it can counteract the monopsonist.	The buyer minimises costs leading to a reduced price paid to the supplier. The monopsonist may exploit its market power by paying less or later. Suppliers may be driven out of the market if they are unable to make a profit.

8. Contestability

a. Characteristics of contestable markets

Contestable markets:

- must have no barriers to entry or exit
- have no sunk costs – a firm's start-up costs that they cannot recover if they exit the market
- new firms must have no competitive disadvantage compared to the incumbent
- must have access to the same technology.

Incumbents cannot set a price above AC – if they do and earn supernormal profits other firms will enter the market and so competing the profits away.

b. Implications of contestable markets for behaviour of firms on:

If businesses make supernormal profits:

- this would make them vulnerable to a 'hit and run' entry by a new firm
- they would come into the market, take some profits and then exit again.

To avoid this, the incumbent firm may charge where $P=AC$ where there are no supernormal profits and no incentive for entry to the market. Alternatively, the incumbent firm(s) may charge a limit price, i.e. one below the profit maximising price and low enough to deter new entrants.

c. Costs and benefits of contestability for firms and consumers

A highly contestable market would make it easy for new firms to enter an industry and would, therefore, make it difficult for incumbent forms to make supernormal profits. For consumers, a highly contestable market would result in lower prices and more choice than in a market in which contestability is low.

d. The significance of sunk costs for contestability.

Sunk costs are costs that are irretrievable; for example, advertising costs. When sunk costs are high in a market it will make entry to and exit from that market less attractive and therefore make the market less contestable.

3.3.4 Labour markets

1. The demand for labour

a. Factors that influence the demand for labour to a particular occupation

In a particular labour market, the demand for labour comes from people in households and the demand for labour comes from businesses. The demand for labour is known as a **derived demand**, which means the demand for labour is dependent on demand for the final goods and services that they produce. If there is a high demand for the final goods and services they produce businesses will demand more labour; for example, in times of economic boom. When demand for a final good falls the demand for labour will fall.

Demand for labour also increases when workers become more **productive**; for example, because they have better skills. Further, the demand for labour will increase when the price of the final product increases because it will be more profitable for firms to supply the product.

Firms can choose to use capital or labour so if capital becomes more expensive then firms will demand more labour.

b. Factors that influence the elasticity of demand for labour.

Elasticity of demand for labour refers to how responsive the demand for labour will be to changes in wages. If demand for labour is elastic, businesses cut back aggressively on employment if wage rates increase and will expand rapidly when labour becomes cheaper relative to other factor inputs. When the elasticity of demand for labour is inelastic the response to changes in wages will be smaller.

The wage elasticity of demand for labour depends on a number of factors: the proportion of labour costs in the total costs of a business, the ease and cost of factor substitution, the price elasticity of demand for the final output produced by a business and the time period under consideration.

2. The supply of labour

a. Factors that influence the supply of labour to a particular occupation

The supply of labour is dependent on a number of factors, including: changes in the size of the population which may be influenced not only by natural changes but also by net migration, income tax rates (which affect incentives to work), the level of welfare benefits, government regulations (for example, employment legislation affecting a firm's ability to hire and fire workers), and the power of trade unions.

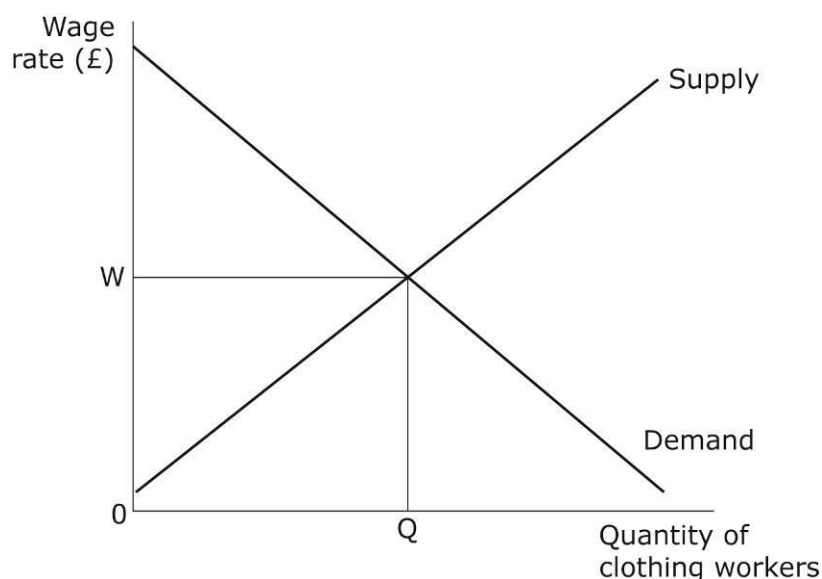
b. Factors that influence the elasticity of supply of labour.

The elasticity of labour supply to an occupation measures the responsiveness of labour supply to a change in the wage rate. In low-skilled occupations, labour supply is elastic because a pool of labour is available to take the job. Where jobs require specific skills, training or qualifications, the labour supply will be more inelastic because it is hard to expand the workforce in a short period of time when demand for workers has increased.

3. The determination of wages rates in competitive and non-competitive markets

a. Labour market equilibrium

The price of labour is the wage rate. If wages are too high, labour supply will be high but labour demand will be low – there is excess supply leading to unemployment. In a competitive market, workers will have to accept lower wages or go without a job, meaning the wage rate will tend to fall to the market clearing wage rate. If wages are too low, labour demand will be high but supply will be low – there is excess demand and therefore there will be a labour shortage. Workers will not work if they are not paid enough to do so. Firms will have to pay workers more to convince them to work, and so the wage rate will rise towards the market clearing wage. Students are required to draw, annotate and interpret labour market diagrams.



Students should also consider the importance of the participation rate in the labour force, and recognise the concepts of unemployment and under-employment.

b. Causes of changes in the equilibrium wage rate and quantity of labour as a result of shifts in demand curves and supply curves

Any change in the factors influencing the demand or supply of labour identified above will cause a shift in the demand curve or supply curve for labour and so cause a change in the equilibrium wage rate. For example, an increase in net inward migration of fruit pickers would cause the supply curve for fruit pickers to shift to the right and to a fall in the equilibrium wage rate.

c. Wage setting in the public sector/state-owned enterprises

Through public sector wage setting, a government can impact the labour market. For example, if wage rates are increased in the public sector relative to those in the private sector then private sector businesses may be forced to raise wage rates in order to retain workers.

4. Market failure in the labour market

Market failure can result from the inability of workers to easily move between jobs.

a. Causes and consequences of the geographical immobility of labour

Geographical immobility refers to workers being unable to move to different places to seek and find work. This may be due to social reasons, such as not wanting to move away from family. It may also be due to the cost of travel or cost of accommodation. Geographical immobility of labour might result in a mismatch between vacancies and unemployment in different parts of the country.

b. Causes and consequences of the occupational immobility of labour

Occupational immobility refers to workers being unable to move between jobs as they lack the appropriate skills or training. As an economy shifts from having a manufacturing base to a service-sector base, many manufacturing workers find it difficult to transfer to jobs in the service sector as they lack the required skills. This may result in structural unemployment.

3.3.5 Government intervention

1. Government intervention in product markets

a. The case for government intervention

Governments intervene in product markets to address market failures such as Monopoly or as a means of promoting competition or to prevent the exploitation of suppliers and employees.

b. Measures to control monopolies and mergers

A consideration of the actions a government could take to control mergers and monopolies, including the role of competition authorities, is required. Measures include price regulation; profit regulation; quality standards; performance targets; referral to regulatory authorities; and legislation to control mergers and takeovers.

In each case it is important to consider why the action is needed. It could be useful to look at examples of regulatory authorities such as the European Competition Commission and the Antitrust Commission in the USA.

c. Measures to promote competition and contestability

Governments may promote competition and contestability through a variety of measures including tax incentives and grants to promote small businesses and foreign direct investment; deregulation; privatisation; competitive tendering for public sector contracts; trade liberalisation. Most of these measures were considered in Unit 2; trade liberalisation will be considered in Unit 4.

d. Measures to protect suppliers and employees

There are ways by which governments may attempt to protect suppliers and employees from the exploitation of businesses which have market power. These include local sourcing of raw materials and components; employment legislation to protect workers from exploitation; barriers to the entry of foreign firms; restrictions on the monopsony power of firms; and nationalisation.

e. The impact of each measure

The effects of the measures, mentioned in parts (c) and (d) on price, profit, efficiency, quality and choice, should be examined.

f. Limits to government intervention

In practice, the effect of government intervention in product markets may be limited. For example, there may be regulatory capture i.e. when a regulatory agency advances the commercial interests of the firms who dominate the industry which it is responsible for regulating. It is, therefore, a form of government failure. Further, the effectiveness of government intervention may be limited by asymmetric information/information gaps i.e. the regulators may have insufficient information to make appropriate decisions to regulate the industry. Inadequate resources might also hinder the regulator's ability to intervene effectively. Similarly, a lack of regulatory power, as established in the law, would reduce a regulator's ability to perform its duties.

2. Government intervention in labour markets

a. The case for government intervention

There are various reasons for government intervention in the labour market including immobility of labour; inequality; discrimination.

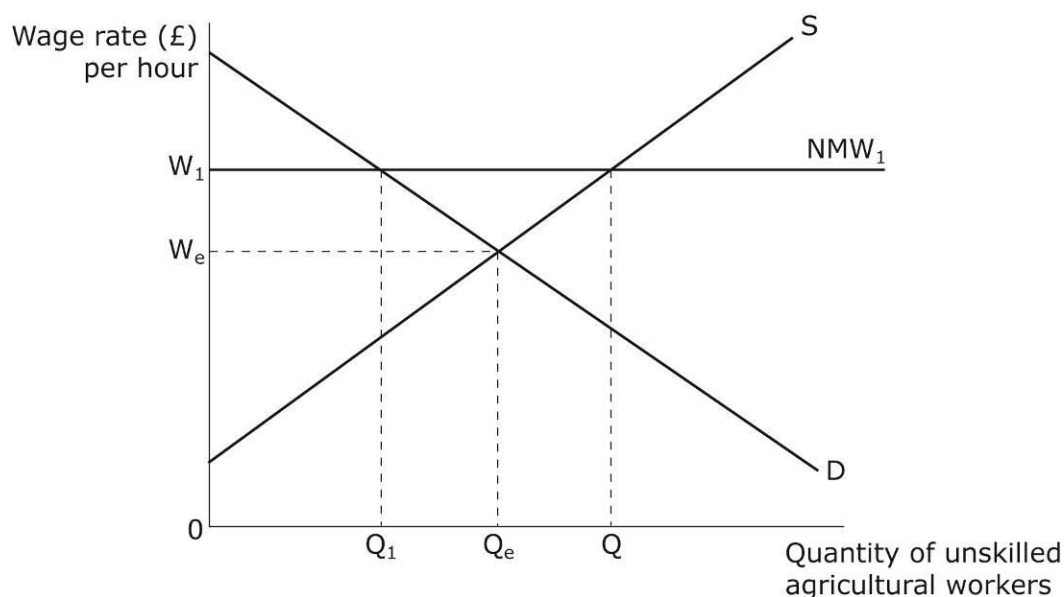
b. Types of government intervention in labour markets and their effects:

- **Maximum wage controls**

A maximum wage is the maximum that firms are legally allowed to pay their workers. If the maximum wage is set below the free market wage in a particular industry then it could mean that firms face a shortage of workers.

- **Minimum wage controls**

The minimum wage is the minimum firms are legally allowed to pay their workers. The minimum wage, set at W_1 , will result in a wage above the market equilibrium wage, W_e . The higher wage will result in an extension of the supply of labour to Q but demand for labour by employers will contract to Q_1 . This leads to excess supply and $Q - Q_1$ will be unemployed.



Students should consider the impact (benefits and drawbacks) of the introduction or increase in both a minimum and maximum wage.

- **Direct taxes e.g. national insurance contributions; corporation tax**

Employers' national insurance contributions are a tax on the wages earned by a firm's employees. Therefore, they increase a firm's costs and could lead to a fall in firms' profits and/or to reduction in employment.

- **Measures to reduce geographical and occupational immobility of labour**

Housing and removal subsidies are two measures which could be used to reduce the geographical immobility of labour. Training and education is a measure that could help to reduce the occupational immobility of labour.

- **Measures to reduce discrimination and exploitation.**

Governments will often pass laws to reduce discrimination and exploitation and enforce them with the threat of fines, imprisonment for those caught breaking them.

Unit 4: Developments in the global economy

4.3.1 Causes and effects of globalisation

1. Characteristics of globalization

Globalisation refers to the increasing international interdependence of economic agents (producers, consumers, governments, entrepreneurs). Its main features include:

- a. An increase in trade as a proportion of GDP;
- b. An increase in the importance of transnational companies (TNCs) and foreign direct investment (FDI); and
- c. An increase in migration between countries.

2. Causes of globalisation

- a. Factors contributing to increased globalisation in the last 50 years:
 - trade liberalisation i.e. reduction and/or removal of trade barriers such as tariffs and quotas
 - increased number and size of trading blocs i.e. a group of countries who agree to reduce trade barriers between the participating nations
 - political change (breakdown of the Soviet system and opening up of China)
 - reduced cost of transport and communications especially as a result of the internet
 - increased significance of TNCs.

- b. FDI by TNCs:

A TNC may decide to invest in other countries for a range of reasons including: to take advantage of lower wage costs and/or weaker environmental laws; to gain access to a trading bloc; to exploit raw materials not available in its own country; to take advantage of lower corporate taxes.

There should be a consideration of the possible effects of FDI on recipient countries. Various possible effects include the following: the multiplier impact of an increase in investment on GDP; on employment; on the balance of payments financial account and current account; public finances; the environment.

3. Effects of globalisation

a. Possible benefits of globalisation

There are a range of possible benefits of globalisation which include:

- increased economic growth (the law of comparative advantage could be used to explain this);
- increased tax revenue, resulting from increased growth and employment;
- economies of scale – if globalisation enables firms to grow in size;
- lower prices and higher consumer surplus – resulting from increased competition and if firms benefit from economies of scale
- more choice – resulting from increased access to foreign goods
- higher living standards – resulting from increased GDP.

b. Possible costs of globalisation:

Similarly, there are a range of possible costs of globalisation which include:

- displaced workers – resulting from relocation of businesses to other (low-wage) countries;
- exploitation of workers – if employment legislation is weak;
- environmental impact of increased trade;
- loss of tax revenue from transfer pricing (see section 4.3.5.4)
- increased income inequality within countries – if the owners of resources benefit more from globalisation than workers
- the influence of TNCs on domestic economic policy – if TNCs put pressure on a government to pursue policies which favour large corporations.

4.3.2 Trade and the global economy

1. Specialisation and comparative advantage

a. Benefits and costs of specialisation and trade in the international context

The benefits of specialisation and trade include:

- lower prices and more choice for consumers
- larger markets and economies of scale for firms
- higher economic growth and living standards (based on the law of comparative advantage).

The cost (disadvantages) of specialisation and trade include:

- a deficit on the trade in goods and services balance could arise if a country's goods and services are uncompetitive
- danger of dumping by foreign firms, i.e. selling at below average cost
- increased unemployment resulting from the above
- increased economic integration might result in increased exposure to external shocks
- unbalanced development – international specialisation based on free trade means that only those industries in which the country has a comparative advantage will be developed while others remain undeveloped; in other words there will be a sectoral imbalance which may restrict the overall rate of economic growth
- global monopolies as transnational companies become larger
- developing and emerging economies may face particular problems; for example, infant industries may be unable to compete and go out of business; the monopsony power of global companies may mean that low prices are paid for commodities from developing countries.

b. The theory of comparative advantage:

• The distinction between absolute and comparative advantage

Absolute advantage means that an economy can produce a greater total of goods for the same quantity of inputs. Consequently, the country could manufacture the product at a lower cost than another country.

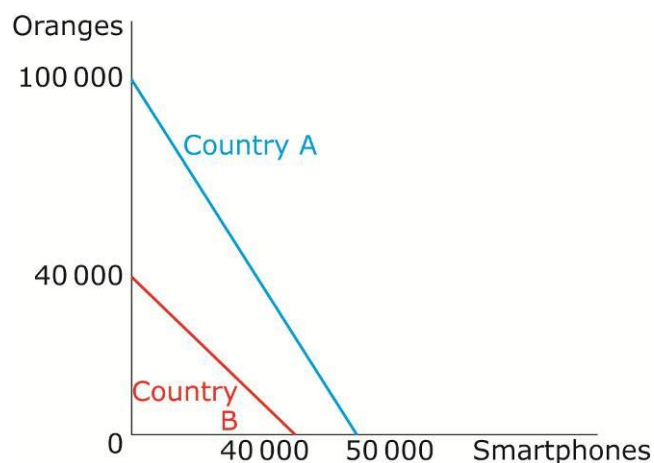
In contrast, comparative advantage refers to the ability to produce a good or service at a lower opportunity cost than another country i.e. it is relatively more efficient.

The use of numerical and diagrammatic examples to illustrate absolute and comparative advantage is required. Assume a world with two countries (A and B) and two products (oranges and smartphones). Country A has an absolute advantage because it can produce more of both goods.

To produce one smartphone, Country A must give up production of 2 oranges, whereas Country B must give up production of 1 orange. Because Country B gives up fewer oranges to make more smartphones, it has a comparative advantage in smartphones (similarly Country A for oranges).

1. Specialisation and comparative advantage (continued)

b. The theory of comparative advantage: (continued)



Country A's PPF is shown in blue. Country B's PPF is shown in red. The opportunity cost of producing a smartphone in Country A is 2 oranges; the opportunity cost of producing a smartphone in Country B is 1 orange.

The opportunity cost of producing an orange in Country A is 0.5 of a smartphone whereas the opportunity cost of producing an orange in Country B is 1 smartphone. Country A should specialise in producing oranges. Country B should specialise in producing smartphones.

- **Assumptions underlying the theory of comparative advantage**

The theory of comparative advantage assumes: constant costs of production (ignoring economies of scale); that transport costs are zero; there is perfect knowledge; there are no barriers to trade; and that factors of production can easily be switched from producing one good to producing another.

- **Limitations of the theory of comparative advantage.**

Obviously, some of the assumptions underlying the law of comparative advantage may not hold. For example, there is not completely free trade between countries. Further, external costs of production (such as environmental degradation) are ignored.

2. Patterns and volume of world trade

a. Factors influencing patterns of trade between countries and causes of changes in these patterns

The G7 share of world trade in manufacturing has fallen significantly over the past century. In global terms, trade flows with emerging economies have increased significantly.

Changes in comparative advantage have contributed to changes in trade patterns.

Trade within trading blocs, such as the EU, has significantly increased (trade creation), but at the expense of trade with more traditional trading partners, such as between the UK and the Commonwealth countries (trade diversion). Other examples include ASEAN, Mercosur and COMESA.

Other factors influencing trading patterns include changes in relative exchange rates and changes in protectionism between countries.

b. Changes in trade flows between countries, and the reasons for these changes

Changes in trade flows between countries occur as a result of changes in the state of the global economy and also for the reasons outlined in the previous section.

3. Terms of trade

a. Understanding and calculation of the terms of trade

The terms of trade relate to the prices of exports relative to the price of imports. The terms of trade are calculated as follows:

$$\text{terms of trade} = \frac{\text{index of export prices}}{\text{index of import prices}} \times 100$$

b. Factors influencing a country's terms of trade

Changes in the following factors will influence a country's terms of trade: relative inflation rates; relative productivity rates; relative labour costs; the exchange rate; and the prices of imports and exports.

c. The impact of changes in a country's terms of trade on:

Changes in a country's terms of trade impact on export revenues, living standards and on the competitiveness of a country's goods and services, with implications for the balance of trade, output and employment. For example, an improvement (increase in) a country's terms of trade implies an increase in its living standards because less has to be exported to buy a given quantity of imports. However, it could mean that the country's goods and services are less competitive and so result in a deterioration in the balance of trade, lower output and higher unemployment.

4. Trade liberalisation and trading blocs

a. The role of the World Trade Organization (WTO) in trade liberalisation

The WTO promotes free trade between member countries through a series of trade negotiations. It is also responsible for resolving trade disputes between member countries.

b. Types of trading blocs:

- Free trade areas – these are blocs in which groups of countries agree to abolish trade restrictions between themselves but maintain their own restrictions with other countries.
- Customs unions – these have free trade internally and a common set of protectionist measures. Examples include the EU, the North American Free Trade Agreement (NAFTA) and the Association of Southeast Asian Nations (ASEAN).
- Common markets – these have the same characteristics as customs unions but also allow the free movement of factors of production.
- Economic and monetary unions – these are customs unions which adopt a single currency

c. Costs and benefits of membership of a trading bloc:

The costs of trading blocs include trade diversion, tariffs on goods from outside the bloc, and restrictions on movements of factors of production from outside the bloc.

Benefits include: trade creation, price transparency, economies of scale for businesses, and increased attractiveness for foreign direct investment (FDI) elimination of transaction costs (in the case of monetary unions).

d. Possible conflicts between trading blocs and the WTO

Trade within regional trade agreements has also significantly increased (trade creation) as a result of their emphasis on free trade. However, this is at the expense of trade with non-members (trade diversion) who may be subject to trade barriers. This is in conflict with the primary aim of the WTO.

5. Restrictions on free trade

a. Reasons for restrictions on free trade

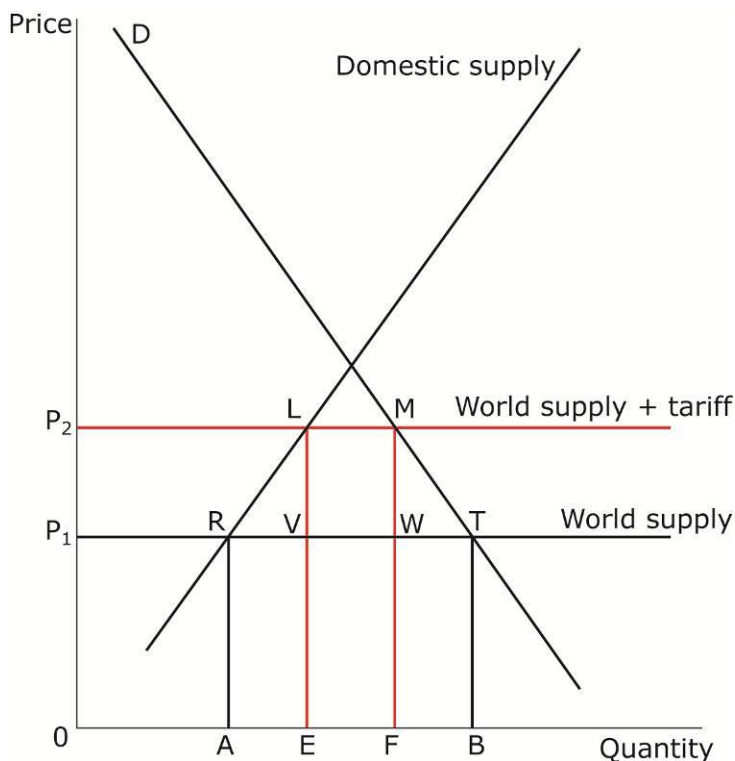
- to protect infant and geriatric industries
- to protect domestic industries and employment
- to protect national security
- to prevent dumping
- to correct a deficit on the current account of the balance of payments
- to raise revenue.

Students should be aware of current examples of protectionist measures and consequent retaliation. Able students could be introduced to the ideas of David Ricardo regarding the benefits of free trade versus protectionism, as well as criticisms of these ideas from economists such as Ha-Joon Chang.

b. Types of restrictions on free trade:

• Tariffs

Tariffs are taxes on imported goods. They are also known as import or customs duties. Taxes raise prices to consumers with the aim of restricting imports. The following diagram illustrates the impact of a tariff:



Before tariff – domestic suppliers supply 0A, total demand is 0B, so imports are AB.

After tariff – domestic suppliers supply 0E, total demand is 0F, so imports are EF.

Tariff revenue raised by government is LMWV.

Additional domestic producer surplus is P_1P_2LR .

The deadweight welfare loss areas are RLV and WMT.

5. Restrictions on free trade (continued)

- **Quotas**

Quotas are a physical limit on the quantity of imports. They have a similar effect to tariffs but no tax revenue is raised and shortages are created.

- **Non-tariff barriers**

Non-tariff barriers are protectionist measures which might include: product specifications, health and safety regulations, environmental regulations and labelling of products.

- **Subsidies to domestic producers**

Subsidies to domestic producers are grants given to domestic producers to enable them to lower production costs, therefore lowering prices, which should make the country's products more competitive internationally. Unlike tariffs and quotas, subsidies incur a cost to the public finances.

c. **Impact of protectionist policies**

The effects of the above protectionist measures on consumers, producers, governments, living standards and equality should be considered.

4.3.3 Balance of payments, exchange rates and international competitiveness

1. Balance of payments

a. Components of the balance of payments

- the current account
- the capital and financial accounts.

The balance of payments is a record of all a country's financial dealings with the rest of the world over the course of a year. It has four parts: the current account, the capital account, financial account and the international investment position.

Students should have a clear understanding of these elements and examine factors which cause current account imbalances and measures which can reduce such imbalances

The current account comprises the following:

- Balance of trade – this refers to the difference between the value of goods and services exported and the value of goods and services imported. Exports appear as a positive entry into the balance of payments because they bring money into the country. Imports appear as a negative entry into the balance of payments because money leaves the country. The balance of trade itself comprises two elements: the trade in goods balance and the trade in services balance.
- Income – this comprises income earned by domestic citizens who own assets overseas minus income earned by foreign citizens who own assets in this country. It includes profits, dividends on investments abroad and interest.
- Current transfers – these are usually money transfers between central governments (who lend and borrow money from each other) or grants, such as those that the UK receives as part of the CAP from the EU.

If a country has a current account deficit, the value of money leaving the country exceeds the value of money entering the country. If a country has a current account surplus, then the value of money entering the country exceeds the value of money leaving the country.

The capital account refers to transactions in fixed assets and is relatively small.

The financial account comprises transactions associated with changes of ownership of the UK's foreign financial assets and liabilities. It includes the following:

- Direct investment – this relates to capital provided to or received from an enterprise, by an investor in another country.
- Portfolio investment – this relates to investments in equities and debt securities.
- Financial derivatives – these include any financial instrument the price of which is based upon the value of an underlying asset (typically another financial asset). Financial derivatives include options (on currencies, interest rates, commodities, indices), traded financial futures, warrants and currency and interest swaps.
- Reserve assets – these refer to those foreign financial assets that are available to, and controlled by, the monetary authorities such as the Bank of England for financing or regulating payments imbalances. Reserve assets comprise: monetary gold, Special Drawing Rights, reserve position in the IMF and foreign exchange held by the Bank.

Students should focus especially on flows of FDI between countries.

The international investment position is in the balance sheet of the stock of external assets and liabilities.

1. Balance of payments (continued)

b. Causes of deficits and surpluses on the current account

The balance of payments must always balance. If a country has a current account deficit, it must have a surplus on the other elements of the balance of payments. This is because it has to pay for everything it consumes and funds in some way – to fund a current account deficit, a country must be selling assets to foreign investors. It is debatable whether this is sustainable in the long run since, if people invest in a country, at some point they will require a return on their investment, and this will cause a deficit on the financial account.

In addition, because the data is never completely accurate, the accounts also incorporate a 'net errors and omissions' item, which makes sure that everything will balance.

Students should understand the components within the current account, and should be aware of which components record deficits or surpluses. Students should consider the size of deficits or surpluses on the current account in a global context, and examine the implications of large imbalances between countries.

Causes of current account deficits include:

- relatively low productivity
- relatively high value of the country's currency
- relatively high rate of inflation
- rapid economic growth resulting in increased imports
- non-price factors such as poor quality and design.

Current account surpluses may arise from the reverse of these points.

c. Measures to reduce a country's imbalance on the current account

Measures to correct a deficit on the current account include expenditure reducing, expenditure switching and supply-side policies; each of these should be evaluated, and students should be encouraged to reach their own conclusions as to the most appropriate measure. Students should consider the option of doing nothing, in light of theory on floating exchange rates.

Expenditure-reducing policies relate to measures designed to reduce aggregate demand, such as deflationary fiscal policy. As a result, people spend less on imports. However, a side-effect of this is that spending on domestic goods also decreases, causing unemployment and a fall in the rate of economic growth.

Expenditure-switching policies involve the use of protectionist measures such as tariffs or quotas, or a devaluation of the currency under a fixed exchange rate regime. Such measures encourage people to buy domestic goods rather than imports. However, they may lead to retaliation, causing exports to also fall so that the current account deficit may not be corrected.

Supply-side policies, such as spending on education and training in order to improve the quality and therefore competitiveness of exports, aim to boost export demand. While they can incur an opportunity cost, they contribute positively to economic growth and can be anti-inflationary in the long run.

1. Balance of payments (continued)**d. The significance of global trade imbalances**

Some argue that, since a country's balance of payments must always balance, any global imbalances are insignificant. However, the Global Financial Crisis of 2008 suggests that persistently large current account deficits may be unsustainable in the long run. Large and persistent deficits can be a problem because there is a need to finance the increasing expenditure on imports, usually through loans from abroad. In contrast, large and persistent surpluses can be a problem because resources are focused on producing to meet export demand rather than domestic demand, so consumer choice and resulting living standards could actually be low. Further, such imbalances may lead to large currency fluctuations which can have a destabilising impact of world trade.

2. Exchange rates**a. The distinction between fixed, managed and floating exchange rates**

Students should understand the different exchange rate systems, the factors influencing exchange rates and the impact of changes in exchange rates.

Exchange rates are the price of one currency in terms of another. Under a system of floating exchange rates, demand and supply determine the rate at which one currency exchanges for another.

In a system of fixed exchange rates, the country's exchange rate is fixed in relation to, say the US dollar. It can only be changed by the central bank in agreement with other countries usually mediated through the IMF.

Managed exchange rates imply that the monetary authorities control the exchange rate through the buying and selling of the country's currency

b. Government intervention in currency markets through:

- Foreign currency transactions – if the central bank wishes to increase the value of the country's currency then it would buy its own currency.
- The use of interest rates changing interest rates – if the central bank wishes to increase the value of the country's currency, it would raise interest rates, so making it more attractive for foreigners to place cash balances in the country's banks .
- Quantitative easing – this tends to increase the supply of money and would, therefore, tend to cause the value of a currency to depreciate against other currencies.

c. Factors influencing floating exchange rates

Student should be able to explain how changes in each of the following factors might cause an appreciation or depreciation of a currency:

- relative interest rates
- relative inflation rates (purchasing power parity theory)
- current account of the balance of payments – UK exports create a demand for sterling whereas imports into the UK create a supply of sterling on the foreign exchange market; therefore, an increasing trade surplus would cause an increase in the value of sterling
- strength of the economy
- capital flight
- expectations and speculation
- global factors, e.g. falls in commodity prices.

2. Exchange rates (continued)**d. The distinction between revaluation and appreciation of a currency**

Appreciation and depreciation are the terms used under a system floating exchange rates to describe increases and decreases in the value of a country's currency in relation to other currencies. Revaluation and devaluation are the terms used under a system fixed exchange rates to describe increases and decreases in the value of a country's currency in relation to other currencies determined by the country's central bank.

Appreciation/revaluation means that the value of the pound, in terms of other currencies, has increased. For example, if the value changes from €1 = \$1.50 to €1 = \$1.70 then more dollars are required to buy €1. With an appreciation/revaluation, even though a good may still be priced at €10, it now costs Americans \$17 instead of \$15, therefore reducing demand for eurozone exports.

e. The distinction between devaluation and depreciation of a currency

Depreciation/devaluation means that the value of the pound, in terms of other currencies, has decreased. For example, if the value changes from €1 = \$1.50 to €1 = \$1.40 then fewer dollars are required to buy €1. With a depreciation/devaluation, even though a good may still be priced at €10, it now costs Americans only \$14 instead of \$15, therefore increasing demand for eurozone exports.

f. The impact of changes in exchange rates on:

- **the current account of the balance of payments**

The current account of the balance of payments: a depreciation or devaluation will increase the competitiveness of a country's goods and services by causing a fall in the foreign currency price of its exports and an increase in the domestic price of its imports. However, there will only be an improvement in the current account of the balance of payments if the sum of the PEDs for exports and imports is greater than 1. This is called the Marshall-Lerner condition.

Further, the impact on the current account may be different in the short run than in the long run. In the short run there might be a deterioration in the current account of the balance of payments because the demand for imports might be price inelastic if firms have stocks or if they are tied into contracts; and the demand for exports might be price inelastic because consumers take time to adjust to the new, lower, prices. However, in the long run demand for exports and imports is likely to become more price elastic so the significance of the above factors disappears. This difference in short-run and long-run effects is often referred to as the J curve effect.

- **the capital and financial accounts of the balance of payments**

Following a depreciation/devaluation it would be cheaper for global companies to invest in the country so FDI might increase. This would cause an improvement in the financial account of the balance of payments.

- **economic growth**

Since a depreciation/devaluation increases the competitiveness of a country's goods and services, it is likely that the net exports component of aggregate demand will increase so resulting in an increase in economic growth.

- **employment and unemployment**

An increase in the competitiveness of a country's goods and services following a depreciation/devaluation should result in a decrease in unemployment as demand for the country's goods and services increases.

2. Exchange rates (continued)

- **rate of inflation**

The price of imported raw materials and manufactured goods will increase following a depreciation/devaluation. This could have inflationary consequences because firms' costs would increase and a wage-price spiral could ensue.

- **FDI flows**

Following a depreciation/devaluation it would be cheaper for global companies to invest in the country so FDI might increase.

N.B. An appreciation/revaluation of a country's currency would have the reverse of the above effects.

g. **Competitive depreciations/devaluations and their consequences**

Some countries try to gain competitive advantage by taking measures to lower the value of their currencies. However, if several countries do this then any advantage would disappear quickly. Consequently, there might be a decline in world trade if countries pursued such a policy – as happened in the 1930s.

An appreciation/revaluation of a country's currency would have the reverse of the above effects.

3. International competitiveness

a. **Measures of international competitiveness**

Competitiveness refers to the ability of a country to sell its goods/services abroad. International competitiveness may be measured by the following ways:

- relative productivity rates
- relative unit labour costs
- relative export prices.

b. **Factors influencing international competitiveness**

There are a range of factors which might influence international competitiveness. These factors have been considered in other parts of the specification.

- productivity (unit 2)
- quality of human capital (unit 2)
- exchange rate (unit 4)
- wage and non-wage costs (unit 3)
- regulations (units 1 and 3)
- quality of infrastructure (unit 2)
- non-price factors (unit 3).

c. **Measures to increase international competitiveness**

These may be linked with policies previously considered, such as supply-side measures e.g. policies to improve education and training, investment incentives, and privatisation and deregulation or measures to reduce the exchange rate of the currency or trade liberalisation.

d. **The significance of international competitiveness**

A country which is internationally competitive is likely to be able to enjoy export-led growth with positive implications for employment and its balance of payments on the current account. The reverse would be true for a country which is internationally uncompetitive. Countries often try to improve their international competitiveness by adopting supply-side policies.

4.3.4 Poverty and inequality

1. Poverty

a. The distinction between absolute and relative poverty

Absolute poverty exists when a person's continued daily existence is threatened because they have insufficient resources to meet their basic needs.

Relative poverty exists when a person is poor compared with others in their society. Most poverty in developed countries tends to be relative poverty.

b. Measures of absolute and relative poverty

Absolute poverty – in 2008, the World Bank set the poverty line at \$1.25 a day at 2005 GDP measured at purchasing power parity. Some economists measure the poverty line at \$2 a day.

Relative poverty – this is measured in comparison with other people in the country and will vary between countries. People are considered to be in relative poverty if they are living below a certain income threshold in a particular country. For example, in the EU, people falling below 60% of median income are said to be 'at-risk-of poverty' and are said to be relatively poor.

c. Causes of changes in absolute and relative poverty

The following factors could cause changes in absolute and relative poverty economic growth; education and training; welfare benefits; changes in tax structure; structural changes in the economy; aid; and civil wars and conflict.

2. Inequality

a. The distinction between wealth inequality and income inequality

Students are required to understand the distinction between wealth and income inequality. Wealth relates to differences in people's stock of assets. Income is a flow concept; therefore, income inequality relates to differences in people's income flows such as those from wages, dividends and rents.

b. Measurements of inequality

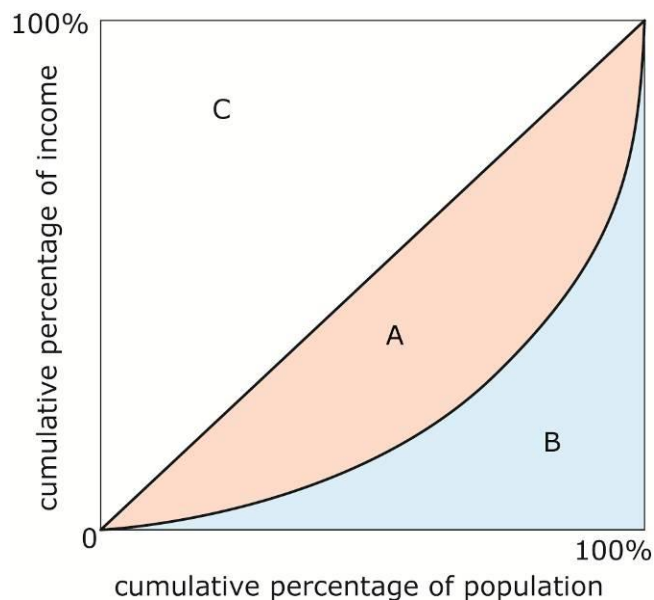
Measures of inequality include the Lorenz curve and the Gini coefficient. Lorenz curves plot cumulative share of income (or wealth) against the cumulative share of the population with that income (or wealth). To determine the degree of inequality, the Gini coefficient may be calculated:

$$G = \frac{A}{A + B}$$

A represents the area between the diagonal line and the Lorenz curve and B represents the area under the Lorenz curve. The Gini coefficient will have a value between 0 and 1, with 0 representing absolute equality (the 45° line) and 1 representing absolute inequality (i.e. the Lorenz curve would lie along the horizontal and vertical axes).

2. Inequality (continued)

b. Measurements of inequality (continued)



c. Causes of inequality in income and wealth within countries and between countries.

Inequality in wealth and income inequality may be caused by:

- education, training and skills
- wage rate including minimum wage rates
- strength of trade unions
- degree of employment protection
- social benefits
- the tax system (e.g. how progressive it is)
- pension entitlements
- ownership of assets (e.g. houses and shares) and inheritance

d. The impact of inequality

Students should consider possible effects of inequality on the following variables:

- enterprise
- incentives
- savings
- education
- migration
- life expectancy.

2. Inequality (continued)

e. The impact of economic change and development on inequality

It is often observed that, as a country develops and its GDP grows from a subsistence economy, inequality initially increases and then decreases. This observation could be analysed by reference to the Kuznet's curve (although this is not a requirement). Industrialisation results in increased inequality as workers move from the lower productivity and lower paid agricultural sector into the higher productivity manufacturing sector. However, at some point, inequality starts to decrease. This may be because governments have more resources to redistribute income through the tax and benefit system.

f. The significance of the free market economy (capitalism) for inequality

Inequality in a free market economy is inevitable, since people with higher skills and abilities will attract higher wages, whereas those with poor skill levels will earn nothing. Further, private ownership of resources means that some people will acquire considerably more assets than others which, in turn, may generate an income. Some argue that inequality is essential in a capitalist system to provide an incentive for individuals to take risks in the knowledge that they, personally, will benefit from any profits made.

4.3.5 The role of the state in the macroeconomy

1. Public expenditure

a. The distinction between capital expenditure, current expenditure and transfer payments

Capital expenditure refers to long-term investment expenditure on capital projects such as Crossrail or new hospitals by the government.

Current expenditure relates to the government's day-to-day expenditure on goods and services. Examples include wages and salaries of civil servants, and drugs used by the NHS.

Transfer payments are those made by the state to individuals without there being any exchange of goods or services – there is no production in return for these payments. Typically, transfer payments are used as a means of redistributing income. UK examples include Employment and Support Allowance for ill and disabled people and child benefit.

b. Reasons for the changing size and pattern of public expenditure in an international context

- changing incomes – the demand for many state-provided services is income elastic.
- changing age distributions – ageing populations in many developed countries result in increased demands on healthcare
- changing expectations – new technology in services such as health and education results in increased expectations

c. The significance of differing levels of public expenditure as a proportion of GDP

If public expenditure as a proportion of GDP is relatively high then there may be some undesirable outcomes. For example:

- **Low productivity and a low rate of economic growth** - this may occur because the state sector is not motivated by the profit motive and so there may be little incentive to increase efficiency.
- **Crowding out** – two types may be identified: resource or financial crowding out. Resource crowding out occurs when the economy is operating at full employment and the expansion of the public sector means that there is a shortage of resources in the private sector. Financial crowding out arises when the expansion of the state sector is financed by increased government borrowing. This causes an increased demand for loanable funds which drives up interest rates and crowds out private sector investment.
- **Levels of taxation** – in the long-run a government may have to raise taxes in order to fund public expenditure.

2. Taxation

a. The distinction between, and examples of, direct and indirect taxes

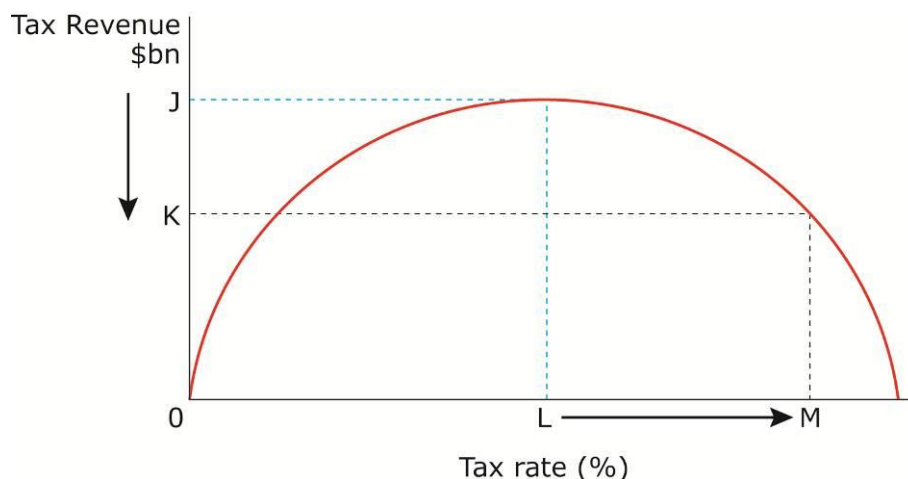
A direct tax is a tax on income, such as income tax, corporation tax or capital gains tax. An indirect tax is a tax on expenditure on goods and services, such as VAT, excise duty or stamp duty.

b. The distinction between progressive, proportional and regressive taxes

- **Progressive taxation** – as income rises, a larger percentage of income is paid in tax (e.g. income tax in Malaysia).
- **Proportional taxation** – the percentage of income paid in tax is constant, no matter what the level of income.
- **Regressive taxation** – as income rises, a smaller percentage of income is paid in tax (for example, excise duties on carbonated drinks in the UAE).

c. The economic effects of changes in direct and indirect tax rates on:

- **Incentives to work** – for example, higher rates of income tax might act as a disincentive for the unemployed to accept jobs or for those in employment to work overtime.
- **Tax revenues: Laffer curve analysis**



When the tax rate is increased to point L, tax revenues increase. However, a further increase in the tax rate from L to M causes a fall in tax revenue from J to K. This may be explained by the following factors: increased disincentives to work; an increase in tax avoidance and evasion; and a rise in the number of tax exiles.

- **Income distribution** – a progressive tax, such as income tax in Malaysia, will tend to redistribute income from those on higher incomes to those on lower incomes if the tax revenues raised are used for benefits to the poor.
- **Real output and employment** – an increase in taxes will reduce aggregate demand because taxes are a leakage from the circular flow of income. In turn, this might reduce real output and cause an increase in unemployment.
- **The price level** – an increase in indirect taxes could be inflationary if it causes a wage-price spiral; for example, increased indirect tax causes a rise in prices which, in turn, leads to increased wage demands by workers causing firms' costs to rise and a further rise in prices.
- **The trade balance** – an increase in income tax would reduce disposable income and consumption. In turn, this would reduce demand for imports and so result in an improvement in the balance of trade.
- **FDI flows** – a higher rate of corporation tax might deter FDI if rates are lower in other countries.

3. Public sector borrowing and public sector debt

a. The distinction between:

- **Fiscal deficits and fiscal surpluses**

A fiscal deficit occurs when government spending exceeds tax revenue, whereas A fiscal surplus occurs when tax revenue exceeds government spending

- **Automatic stabilisers and discretionary fiscal policy**

Automatic stabilisers: government spending/taxation vary automatically over the course of the economic cycle (e.g. G rises in a slump owing to increased benefit payments and T falls as fewer people work and spend).

- **Discretionary fiscal policy**

Deliberate alteration of government expenditure and taxation designed to achieve its economic objectives.

- **A fiscal deficit and the national debt**

A fiscal deficit occurs when government spending exceeds tax revenue, whereas the national debt is the cumulative total of past government borrowing.

- **Structural and cyclical fiscal deficits**

A cyclical fiscal deficit occurs during a downturn in the economy because tax revenues will be falling and government expenditure (for example on social benefits) will be increasing. Such a deficit should disappear when the economy returns to its trend growth rate. A structural fiscal deficit remains even when the economy is operating at its full potential. It is, therefore, regarded as a more serious problem than a cyclical deficit.

b. Factors influencing the size of fiscal deficits and national debts

Factors influencing the size of fiscal deficits include: the state of the economy, the housing market (which influences revenues from stamp duties), political priorities and unplanned events.

Factors influencing the size of national debts include the size of fiscal deficits and government policies.

c. The significance of the size of fiscal deficits and national debts

- **Impact on interest rates** – increased borrowing by a government could put an upward pressure on interest rates
- **Debt servicing** – with higher levels of borrowing interest payments on the national debt would increase
- **Intergenerational equity** – an increasing national debt is likely to mean that future generations will bear the costs of repaying the debt.

4. Macroeconomic policies

a. How governments use fiscal policy, monetary policy, exchange-rate policy, supply-side policies and direct controls

This sub-topic builds on the work on macro policies covered in Unit 2. Students should be aware of global causes of national macroeconomic problems, and therefore be aware of the limitations of national macroeconomic policies in correcting these problems. This would be a good opportunity to discuss the differences between Keynesian and Monetarist approaches, using LR and SR aggregate supply curves.

After many years in which fiscal policy was largely passive, the financial crisis of 2008 resulted in the use by many countries of fiscal policy as a Keynesian tool to stimulate the economy. There is an important distinction between automatic stabilisers and discretionary fiscal policy:

- **Automatic stabilisers** – government spending/taxation vary automatically over the course of the economic cycle (e.g. G rises in a slump owing to increased benefit payments and T falls as fewer people work and spend).
- **Discretionary fiscal policy** – deliberate alteration of government expenditure and taxation designed to achieve its economic objectives.

Similarly, the use of monetary policy in a global context and the implications of changes in interest rates, inflation targets, quantitative easing and other monetary tools should be understood.

It should be noted that the control of the money supply itself is extremely difficult, as it is nearly impossible to precisely measure the amount of money. Further, control of inflation is becoming more difficult as the influence of globalisation increases. For example, the growth of China pushed up prices of commodities, including food, causing cost-push inflation. This makes the decisions of policy makers all the more difficult, causing more uncertainty about the future.

Supply-side policies are designed to increase the productive potential of the country and, therefore, increase its long-run aggregate supply. Such policies are often advocated as part of a strategy to increase economic development because they include: improving education so that people acquire appropriate skills required in a modern economy; improving healthcare so that life expectancy increases; teaching entrepreneurship so that more people are able to start their own businesses; and reducing discrimination to encourage increased labour force participation.

Direct controls are forms of control which work outside the market system. They include: maximum price controls (for example, these might be used in developing countries to control the price of food), minimum guaranteed prices (including national minimum wages) and wage controls.

These policies may be used

- **to reduce fiscal deficits and national debts** – for example, governments might increase taxes and reduce government expenditure.
- **to control the rate of inflation** – for example some governments use direct price controls to prevent further increases in the rate of inflation. A more conventional approach is to use interest rates and quantitative easing to influence the rate of inflation.
- **to respond to external shocks in the global economy** - possible external shocks to the global economy include a significant change in oil and/or commodity prices; a major financial crisis; or a serious political crisis affecting a country or trading bloc. Governments might use a range of policies to address such problems. For example, a government might respond to a significant rise in oil prices by adopting supply-side policies to increase aggregate supply and so put downward pressure on the price level.

4. Macroeconomic policies (continued)

a. How governments use fiscal policy, monetary policy, exchange-rate policy, supply-side policies and direct controls (continued)

- **to reduce poverty and inequality** – for example, a government might provide education and healthcare free of charge as means of reducing poverty; or the tax system may be made more progressive and means-tested benefits may be increased to reduce inequality.

b. Use of demand-side policies in response to the global financial crisis of 2008

After many years in which fiscal policy was largely passive, the financial crisis of 2008 resulted in the use by many countries of fiscal policy as a Keynesian tool to stimulate the economy. There is an important distinction between automatic stabilisers and discretionary fiscal policy:

- **Automatic stabilisers** – government spending/taxation vary automatically over the course of the economic cycle (e.g. G rises in a slump owing to increased benefit payments and T falls as fewer people work and spend).
- **Discretionary fiscal policy** – deliberate alteration of government expenditure and taxation designed to achieve its economic objectives.

Similarly, students should consider the use of monetary policy in a global context and understand the implications of changes in interest rates, inflation targets, quantitative easing and other monetary tools.

c. Measures to control TNCs:

• to reduce tax avoidance

TNCs may engage in a strategy which involves moving their profit to different countries. TNCs pay tax in countries based on their income in those countries. Countries have different tax rates on profits, so TNCs can send their profits to tax havens and not pay any tax on them. Since TNCs generate profit not from machinery or resources but from ideas and software, it is relatively easy for companies to register an idea or software in a country with low tax rates. Consequently, all profit made from that idea or software is only allowed to be taxed in that country.

One idea to deal with this issue is to implement a law stating that a company has to pay tax on all of its profits it makes in a country, even if the software, brand or idea is registered in another country. This tax would not be as high as the standard corporate tax, however still significantly more than what some TNCs currently pay.

A different approach would be to tax the revenue made by a TNC in a country, rather than its profits.

Another method is to use the media to 'name and shame' TNCs involved in tax avoidance.

• the regulation of transfer pricing

A particular issue is that of transfer pricing: this refers to the pricing policies adopted by groups of companies for transactions between companies in the group, such as the sale of goods or the provision of services. With corporate tax rates varying considerably from country to country, there is the potential for global companies to reduce their global tax charge by manipulating the prices charged on intra-group transactions. The only way by which transfer pricing might be controlled is through international agreements and enforcement of agreed rules.

4. Macroeconomic policies (continued)

c. Measures to control TNCs:

- **limits to government ability to control TNCs:**

One limit to a government's ability to control global companies is that many are 'footloose', i.e. they may be able to move to another country easily and with little cost. However, international agreements such as TRIMS (Trade Related Investment Measures) introduced by the WTO have, for example, banned the use of local content requirements.

d. The impact of policy changes

The effect of the above policies should be considered on local economies, national economies and on the global economy.

e. Problems facing policymakers when applying policies. These include:

- **inaccurate information** – inaccurate or out-of-date information could include on GDP, unemployment or the balance of payments on current account when setting interest rates.
- **risks and uncertainties** – it may be difficult for the authorities to predict the impact of quantitative easing; or the impact of a country leaving the Eurozone. Further uncertainties relate to the future behaviour of consumers or businesses in their spending and investment plans.
- **inability to control external shocks** – in an increasingly globalised world in which countries are more closely integrated economically, it becomes more and more difficult for an individual country to isolate itself from external shocks.

4.3.6 Growth and development in developing, emerging and developed economies

1. Measures of economic development

a. The three components of the Human Development Index (HDI)

There are three equal weights within the Human Development Index (HDI): education (the mean years of schooling for an adult aged 25 and expected years of schooling for a pre-school child), health (life expectancy at birth) and real GNI per head at PPPs. These are ranked in an index between 0 and 1: the higher the value, the higher the level of development.

b. Advantages and limitations of the HDI in comparing living standards between countries and over time

The advantage of HDI is that it combines the effects of increased growth with other quality of life indicators and, in that respect, is a useful measure of development. However, this index does not take account of inequality, poverty or other measures of deprivation and, in that respect, is regarded by some as being of limited value.

c. Other measures of development

The following indicators may also be used to assess the level of economic development in a country:

- the percentage of adult male labour in agriculture
- access to clean water
- energy consumption per capita
- access to internet per thousand of population
- access to mobile phones per thousand of population
- access to doctors per thousand of population.

2. Constraints on growth and development

a. The impact of economic factors in different countries:

- **Volatility of commodity prices**

The price inelasticity of demand and supply for commodities will often result in price instability. In turn, this will cause the revenue of producers and foreign currency earnings of the country to fluctuate. This uncertainty may deter investment.

- **Primary product dependency (the Prebisch-Singer hypothesis)**

Primary product dependency may be undesirable for a variety of reasons including: price fluctuations, the low value added of many commodities and demand for primary products is often income inelastic. This means that, as world incomes rise, the country's terms of trade will fall because prices of manufactured goods, whose demand is often income elastic will rise, relative to the prices of primary products. This is referred to as the Prebisch-Singer hypothesis.

- **Savings gap (the Harrod-Domar model)**

The Harrod-Domar model suggests that inadequate savings lead to low investment. In turn, this means that capital accumulation will be low, resulting in slow economic growth. However, this model should be evaluated; for example, it focuses on physical investment only and ignores other sources of investment.

- **Foreign currency gap**

Some developing and emerging economies face a shortage of foreign currency. This may be because their earnings from exports are relatively low, or because world oil prices have increased or because they have large international debts on terms that they cannot afford to repay; for example, if interest rates increase.

- **Capital flight**

The owners of any extra income that could be saved and therefore used for investment often withdraw their money from the country in search of higher returns abroad.

- **Demographic factors (size and age distribution of population; migration)**

Many developing and emerging countries are characterised by high birth and death rates which can result in high dependency ratios. A further problem for some countries is that they face ageing populations, sometimes as a result of policies followed in the past; for example, China's one child policy.

- **Debt (household and overseas)**

Large household debts may be a problem if interest rates increase and the citizens are unable to repay them. This could have an impact on the banking system if bad debts increase.

A country which has large overseas debts may struggle to repay them if its currency depreciates. Further, servicing the debt might result in a shortage of foreign exchange making it difficult for the country to purchase imports.

- **Access to credit and banking**

If individuals cannot access credit and banking services then they may not be able to secure loans to start businesses, therefore limiting the scope for growth and development.

- **Infrastructure**

If infrastructure is inadequate then businesses will find it difficult and costly to trade. Further, poor infrastructure will act as a deterrent to domestic investment and to FDI.

- **Education and skills**

Countries which place an emphasis on education and provide some state funding are more likely to grow and develop. This improves human capital and shifts the PPF outwards.

2. Constraints on growth and development (continued)

b. The impact of non-economic factors in different countries

Other non-economic factors might constrain economic growth and development. These include corruption, poor governance, civil wars, migration and terrorism.

3. Measures to promote growth and development

a. The impact of market-orientated strategies

The following strategies are designed to promote growth and development through market forces:

- **Trade liberalisation** – this relates to measures designed to remove trade barriers. The benefits of free trade are covered in section 4.3.2
- **Promotion of FDI** – the impact of increased investment was considered in Unit 2 and the effect of FDI on the balance of payments was mentioned in section 4.3.3.
- **Removal of government subsidies** – the impact of subsidies was covered in Unit 1. Students should be able to undertake the reverse analysis by considering the effect of the removal of subsidies.
- **Privatisation** - this was covered in Unit 2
- **Floating exchange rate systems** – in many cases developing countries have tried to maintain an exchange rate at an artificially high rate. Consequently, floating the exchange rate should result in a depreciation of the currency. Floating exchange rates were covered in section 4.3.3.
- **Microfinance schemes** – these relate to providing extremely poor people with small loans (microcredit) to help them engage in productive activities or to grow their tiny businesses.

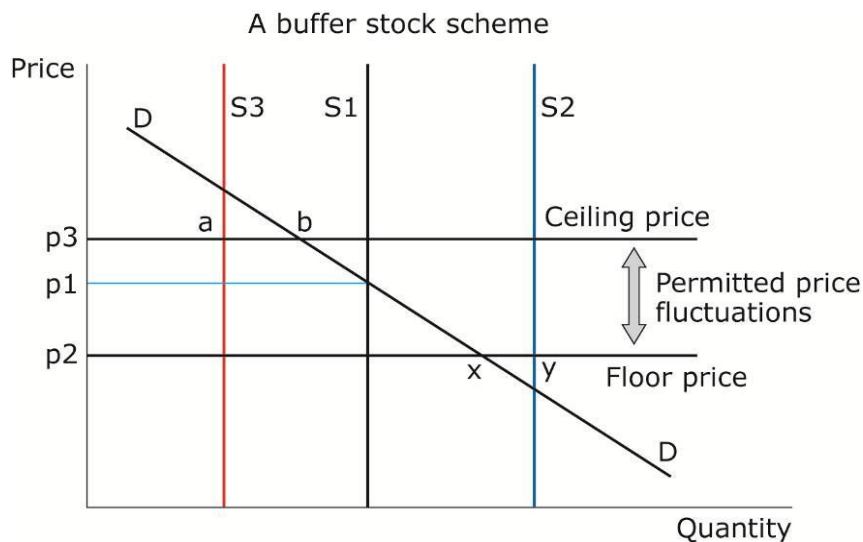
b. The impact of interventionist strategies:

The following are examples of strategies which involve government intervention in an economy.

- **Development of human capital** – this is covered in Unit 2 (section 2.3.6) on supply-side policies.
- **Protectionism** – see section 4.3.2.
- **Managed exchange rates** – see section 4.3.3
- **Infrastructure development** – see Unit 2 (section 2.3.6) on supply-side policies.
- **Promoting joint ventures with TNCs** – see Unit 3 (section 3.3.1) on the growth of companies.
- **Buffer stock schemes** – these entail a price ceiling and a price floor. If the price of the commodity drops too low (probably through high supply), then the government or buffer stock authority purchases large quantities of the good and stores it (xy in the diagram below). This will reduce supply sufficiently to ensure that the price does not fall below the floor price. If the price becomes too high, the government or buffer stock authority release the good onto the market from storage, thus increasing supply sufficiently to ensure that the price does not rise above the ceiling price (ab in the diagram below). The problems with buffer stock schemes are that storage is expensive, transport to and from storage is expensive, it is very difficult to equate supply and demand in the long run, and all producers need to be part of the scheme for it to be effective.

3. Measures to promote growth and development (continued)

b. The impact of interventionist strategies: (continued)



c. The impact of other strategies

Countries may adopt a range of alternative strategies to promote growth and development.

- **Industrialisation (the Lewis structural dual-sector model)**

Lewis argued that growth would be achieved by the migration of workers from the rural primary sector to the modern industrial urban sector – this would occur through higher wage incentives. However, this model may be inappropriate for some emerging economies, where there are often many unemployed in urban areas. This theory also assumes that secondary-sector production would be labour-intensive, whereas it is often capital-intensive.

- **Development of tourism**

Many LDCs are increasingly highly dependent on tourism from the developed world as incomes rise. They may encourage tourism because it allows foreign currency to be earned and it is labour-intensive. However, there may be significant negative externalities resulting from tourism growth; for example, use of clean water for tourists not locals, expansion of airports causing pollution and loss of farmland. The Kingdom of Bhutan, in the Himalayas, aims to tackle this problem by taxing tourists heavily for every night they spend in the country.

- **Development of primary industries**

Some countries have managed to develop on the basis of primary products in which they have a comparative advantage. For example, Chile has benefited from the production of copper (at least, when the price is high) and also on other primary products with a high income elasticity of demand, such as blueberries and papaya.

- **Debt relief**

Many developing countries hit a 'debt crisis' in the 1980s and 1990s, as they could not afford to pay the interest on their large debts to international financial institutions. This was a combination of interest rates rising and the value of the dollar rising (and most loans were agreed in terms of US dollars). Latin American countries and many African countries were among the worst hit – Mexico defaulted on its loans first, and others followed suit. This meant that these countries were then unable to borrow. The massive debts that they had to repay meant that the governments of these countries were unable to invest in human capital or other infrastructure necessary for growth and development.

3. Measures to promote growth and development (continued)

c. The impact of other strategies (continued)

- **Aid**

There are different types of aid, ranging from humanitarian aid (such as food and shelter in times of emergency), to grants (sums of money that do not need to be repaid) and soft loans (money that must be repaid but at a concessionary rate of interest). While many in the developed world see aid as a positive thing, critics argue that much of the aid is squandered on projects that will not contribute to development, or diverted into the private bank accounts of government ministers. Other criticisms suggest that aid is channelled into projects which have captured the global media interest and that, in the long run, the provision of aid can reduce the level of development in a developing country.

d. The role of international institutions

Students are not expected to study the role of international institutions and non-government organisations (NGOs) in depth but to have an awareness of their roles.

- The main functions of **the World Bank** include: granting reconstruction loans to war devastated countries; granting developmental loans to underdeveloped countries; providing loans to governments for agriculture, irrigation, power, transport, water supply, education, health, etc.; and encouraging industrial development of underdeveloped countries by promoting economic reforms.
- The main functions of **the International Monetary Fund (IMF)** include: to ensure the stability of the international monetary system – the system of exchange rates and international payments that enables countries (and their citizens) to transact with each other; to maintain stability and prevent crises in the international monetary system by reviewing country policies and national, regional and global economic and financial developments through a formal system known as surveillance; and to provide member countries with finance to correct balance of payments problems.
- **Non-government organisations (NGOs)** refer to any non-profit, voluntary citizens' groups which are organised on a local, national or international level. The work of NGOs has brought community-based development to the forefront of strategies to promote growth and development. The key characteristics of these community-based schemes are: local control of small scale projects, self-reliance, an emphasis on using the skills available and environmental sustainability.

5. Assessment guidance

5.1 IAS assessment

The focus at IAS is on building knowledge and understanding of core microeconomic and macroeconomic concepts, with a greater emphasis on breadth rather than depth.

There are two externally assessed papers at IAS. Each paper is worth 80 marks and is 1 hour 45 minutes in duration.

Each paper assesses distinct areas of the qualification content, with Paper 1 assessing Unit 1 (microeconomic) content and Paper 2 assessing Unit 2 (macroeconomic) content. In each paper, Section A and Section B assess breadth, with multiple-choice and short-answer questions, and have a greater focus on AO1 and AO2. Section C is based on stimulus material and places greater emphasis on depth (AO3 and AO4), enabling students to demonstrate higher-order skills. Section D assesses students understanding of economic concepts and their ability to make connections in a sustained manner through extended writing.

The structure of the two papers is the same to ensure a consistent approach to assessing the different content areas.

All of the stimulus material is based on real data. This supports students in developing a holistic understanding of how the core concepts and theories relate to the real world in which they live and work. This approach also supports students in genuine application to a range of economic contexts.

Choice has been limited to the extended open-response (20 mark) questions. This supports students in choosing an extended writing question on an issue they want to explore or are more engaged / familiar with. There is no choice of data response question. This allows students to focus on one, broader data response context, which supports comparability across papers and reduces time spent in the exam on processing a second data response context and question that will not contribute to the overall marks.

5.2 International A level assessment

There are four externally assessed papers at IAL. Each comprises 80 marks. Papers 1 and 2 are 1 hour 45 minutes in duration. The assessment of these is described in the previous section.

Paper 3 and Paper 4 assess distinct areas of the qualification content, with Paper 3 assessing Unit 3 (microeconomic) content and Paper 4 assessing Unit 4 (macroeconomic) content. Papers 3 and 4 are 2 hours in duration. In each of these papers, Section A assesses breadth, with multiple-choice questions, and has a greater focus on AO1 and AO2. Section B is based on stimulus material and places greater emphasis on depth (AO3 and AO4), enabling students to demonstrate higher-order skills. Section C assesses understanding of economic concepts and the ability to make connections in a sustained manner through extended writing.

The structure of the two papers is the same to ensure a consistent approach to assessing the different content areas.

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This allows students to focus on one, broader data response context, which supports comparability across papers and reduces time spent in the exam on processing a second data response context and question that will not contribute to the overall marks.

At A level synoptic assessment is achieved in Paper 3 (which may draw on material covered in Units 1 and 2) and in Paper 4 (which may draw on material covered in Units 1, 2 and 3).

6. Transferable skills

6.1 Why transferable skills?

In recent years, higher education institutions and employers have consistently flagged the need for students to develop a range of transferable skills to enable them to respond with confidence to the demands of undergraduate study and the world of work. Ensuring that IAL qualifications will help improve student outcomes through the acquisition of these transferable skills, as well as subject content and skills, is a key aim for Pearson.

Through our teaching materials and support offered we want to:

1. increase awareness of transferable skills that are already being assessed (for both students and teachers)
2. indicate where, for teachers, there are opportunities to teach additional skills that won't be formally assessed, but that would be of benefit to students
3. ensure these opportunities are embedded in the teaching and learning, so that they are not an additional burden or requirement for teachers and students.

6.2 Defining transferable skills

The Organisation for Economic Co-operation and Development (OECD) defines skills, or competencies, as 'the bundle of knowledge, attributes and capacities that can be learned and that enable individuals to successfully and consistently perform an activity or task and can be built upon and extended through learning.'^[1]

To support the design of our qualifications, the Pearson Research Team selected and evaluated seven global 21st-century skills frameworks. Following on from this process, we identified the National Research Council's (NRC) framework ^[2] as the most evidence-based and robust skills framework, and have used this as a basis for our adapted skills framework. The framework includes cognitive, intrapersonal skills and interpersonal skills.



^[1] OECD – *Better Skills, Better Jobs, Better Lives* (OECD Publishing, 2012)

^[2] Koenig J A, National Research Council – *Assessing 21st Century Skills: Summary of a Workshop* (National Academies Press, 2011)

7. Student Guide

7.1 Why study the Pearson Edexcel IAL in Economics

The International Advanced Level qualification in Economics is designed to enable you to:

- develop an interest in and enthusiasm for the study of economics
- appreciate the contribution of economics to the understanding of the wider economic and social environment
- develop an understanding of a range of concepts and an ability to use these concepts in a variety of national and international contexts
- use an enquiring, critical and thoughtful approach to the study of economics and to think as economists
- develop the skills, qualities and attitudes that will prepare you for the challenges, opportunities and responsibilities of adult and working life.

7.2 What will I learn?

Unit 1 Markets in action

This unit gives you an introduction to the nature of economics and examines how the price mechanism allocates resources in local, national and global markets.

You will learn to apply supply and demand analysis to real-world situations, and will be able to suggest reasons for consumer behaviour. This will involve looking at how consumers act in a rational way to maximise utility and how firms maximise profit but also why consumers may not behave rationally. You will analyse the nature and causes of market failure and understand the strengths and weaknesses of possible policy remedies.

You will need to be able to apply relevant quantitative skills to the content covered in this unit, including calculations, the use of data and the drawing of diagrams. A full list of quantitative skills can be found in *Appendix 7: Quantitative skills*.

Unit 2 Macroeconomic performance and policy

This unit introduces the key measures of economic performance and the main objectives and instruments of economic policy in an international context. You will learn how to use a basic AD/AS model to analyse changes in real output and the price level. You will look at when demand and/or supply side policies may be appropriate ways of improving an economy's performance; consider these policies in an historical context; predict the possible impact of such policies and recognise the assumptions involved. You should understand different approaches that may be used by policy makers to address macroeconomic problems and to identify criteria for success.

You will need to be able to apply relevant quantitative skills to the content covered introduced in this unit, including calculations, the use of data and the drawing of diagrams. A full list of quantitative skills can be found in *Appendix 7: Quantitative skills*.

Unit 3 Business behaviour

This unit develops the content of Unit 1 and examines how pricing and the nature of competition between firms is affected by the number and size of market participants. At the end of this unit, students should be able to analyse and evaluate the pricing and output decisions of firms in different contexts, and understand the role of competition in business decision making. They should also be capable of

making an appraisal of government intervention aimed at promoting competitive markets.

Students will need to be able to apply relevant quantitative skills to the content covered introduced in this unit, including calculations, the use of data and the drawing of diagrams. A full list of quantitative skills can be found in *Appendix 7: Quantitative skills*.

Unit 4 Developments in the global economy

This unit develops the knowledge and skills gained in Unit 2. The application, analysis and evaluation of economic models is required, as well as an ability to assess policies that might be used to deal with economic problems. An awareness of trends and developments in the global economy over the last 40 years, including contemporary issues, is required. Wider reading and research will enable students to use up-to-date and relevant examples in their analysis and evaluation of issues and developments in the global economy.

You will need to be able to apply relevant quantitative skills to the content covered in this unit, including calculations, the use of data and the drawing of diagrams. A full list of quantitative skills can be found in *Appendix 7: Quantitative skills*.

Is this the right subject for me?

This course is suitable if you:

- have an interest in learning how businesses and the government create benefits and economic wealth and conversely, how they may create costs which society has to pay, such as those associated with pollution or new house building projects
- enjoy assessing and presenting the merits of alternative courses of action
- are interested in playing a full part in society: understanding why government pursues certain actions and how it may use the tax system to influence peoples' actions
- want to learn how to analyse data and economic models in order to suggest solutions to real-world problems or forecast future trends.

How will I be assessed?

<p>IAS Unit 1: Markets in action</p> <p>Section A: Six multiple-choice questions (6 marks)</p> <p>Section B: Five short-answer questions (20 marks)</p> <p>Section C: Five questions based on data provided in a source booklet (34 marks)</p> <p>Section D: One 20-mark essay question from a choice of two (20 marks)</p>	<p>IAS Unit 2: Macroeconomic performance and policy</p> <p>Section A: Six multiple-choice questions (6 marks)</p> <p>Section B: Five short-answer questions (20 marks)</p> <p>Section C: Five questions based on data provided in a source booklet (34 marks)</p> <p>Section D: One 20-mark essay question from a choice of two (20 marks)</p>
<p>IA2 Unit 3: Business behaviour</p> <p>Section A: Six multiple-choice questions (6 marks)</p> <p>Section B: Five questions based on data provided in a source booklet (34 marks)</p> <p>Section C: Two 20-mark essay questions from a choice of three (40 marks)</p>	<p>IA2 Unit 4: Developments in the global economy</p> <p>Section A: Six multiple-choice questions (6 marks)</p> <p>Section B: Five questions based on data provided in a source booklet (34 marks)</p> <p>Section C: Two 20-mark essay questions from a choice of three (40 marks)</p>

What can I do after I have completed this course?

This qualification should enable you to progress on to a straight economics degree with a focus on theory, or a degree in applied economics such as environmental economics, labour economics, public sector economics or monetary economics. Alternatively, students may like to study a business economics or mathematical economics degree. Economics can also be combined with another subject as a joint degree or with other subjects, e.g. politics, philosophy or history as a combined degree.

Post university employment rates of economists are among the highest for graduates. An economics degree enables students to gain transferable skills in problem solving, quantitative analysis and communication. They are likely to find employment in finance, banking, insurance, accountancy, management and consultancy. Some become professional economists.

Next Steps!

You should:

- Find out what grade you are likely to get in your GCSE/International GCSE Mathematics.
- Ask your Careers Advisor if an A level in Economics will assist you in progressing on to the degree course or in getting the job you want to do?
- Familiarise yourself with the specification and additional support material, for each Economics unit, which can be found here
- Your subject teacher at your school or college should be able to guide you further.

8. Quantitative skills

Throughout the course of study, students will develop competency in the quantitative skills listed below. There are opportunities for students to develop these skills throughout the content and they are required to apply the skills to relevant economic contexts.

The assessment of quantitative skills will include at least Level 2 mathematical skills and the quantitative skills outlined below will constitute 20% of the overall marks for IAL and IA2.

IAS	IA2
QS1 Calculate, use and understand ratios and fractions	QS1 Calculate, use and understand ratios and fractions
QS2 Calculate, use and understand percentages, percentage changes and percentage point changes	QS2 Calculate, use and understand percentages, percentage changes and percentage point changes
QS3 Understand and use the terms mean and median	QS3 Understand and use the terms mean, median and relevant quantiles ³
QS4 Construct and interpret a range of standard graphical forms	QS4 Construct and interpret a range of standard graphical forms
QS5 Calculate and interpret index numbers	QS5 Calculate and interpret index numbers
-	QS6 Calculate cost, revenue and profit (marginal, average, totals)
-	QS7 Make calculations to convert from money to real terms
QS8 Make calculations of elasticity and interpret the result	QS8 Make calculations of elasticity and interpret the result
QS9 Interpret, apply and analyse information in written, graphical, tabular and numerical forms	QS9 Interpret, apply and analyse information in written, graphical tabular and numerical forms

In addition, there are three quantitative skills that may be assessed, but which do not contribute to the 20% target. This is identical to the approach taken in GCE 2015.

IAS	IA2
QS10 Distinguish between changes in the level of a variable, and the rate of change	QS10 Distinguish between changes in the level of a variable, and the rate of change
-	QS11 Understand composite indicators
QS12 Understand the meaning of seasonally adjusted figures	QS12 Understand the meaning of seasonally adjusted figures

³ Percentile, decile, quintile, quartile

Number of QS marks per paper

To achieve this 20% target, the number of marks attributable to QS in each paper will be as follows:

- Paper 1 – minimum 20 marks
- Paper 2 – minimum 12 marks
= 32/160 marks at IAS

- Paper 3 – minimum 20 marks
- Paper 4 – minimum 12 marks
= 32/160 marks at IA2

9. Glossary of command words

The following command words in this taxonomy will be used consistently by Pearson in its assessments to ensure students are rewarded for demonstrating the necessary skills. Careful consideration has been given to this taxonomy to ensure that Assessment Objectives are targeted consistently across questions. Please note: the list below will not necessarily be used in every paper/session and is provided for guidance only. One of the key changes is that a single command word will be used per item; dual injunctions, for example describe and evaluate, will no longer be used.

Command	Marks	Definition	AO			
			1	2	3	4
MCQ	1	Targets knowledge.	1			
MCQ	1	Targets application, inferring from a chart or piece of data (can be qualitative or quantitative)		1		
MCQ	1	A2 only Targets analysis, where a logical chain of reasoning is required.			1	
Define	2	AS Section C only Requires knowledge and understanding only. Requires students to give the meaning of a term, concept or phrase.	2			
Calculate	2	A2 Section B only Assesses quantitative skills. Requires a calculation involving several stages based on given data and may involve the use of a prescribed diagram or formula. Calculators may be used. Students are advised to show workings.		2		
Calculate	4	AS Section B only Assesses quantitative skills. Requires a calculation involving several stages based on given data and may involve the use of a prescribed diagram or formula. Calculators may be used. Students are advised to show workings.	1	3		
Draw	4	AS Section B only Assesses quantitative skills. Requires students to construct an accurately labelled diagram, using quantitative skills. Students may be required to decide on a type of diagram, or the type required may be stated.	1	3		
Explain 'what'	4	Requires knowledge, understanding and application. Used to ask questions about the 'what' (although the word 'what' may not be used), e.g. <i>explain what X means / explain the characteristics of X</i>	2	2		
Explain 'why/ how/ impact'	4	Requires a two-stage chain of reasoning, which leads to (an) impact(s), e.g. <i>explain the impact of X on Y, explain how X is...</i> , or <i>explain why X...</i> AS Section B only [2 per paper]	1	1	2	
Analyse	6	Requires knowledge, understanding, application and analysis. Requires an explanation which includes a chain of reasoning, and diagrams where appropriate. Focuses on depth rather than breadth. Any relevant data provided needs to be interpreted. Does not include evaluation.	2	2	2	

Command	Marks	Definition	AO			
			1	2	3	4
Examine	8	Requires knowledge, understanding, application, analysis and evaluation. Requires an explanation which includes a chain of reasoning, and diagrams where appropriate. Focuses on depth rather than breadth. Any relevant data provided needs to be interpreted. There should be a brief assessment of the arguments/factors/evidence.	2	2	2	2
Discuss	14	Requires knowledge, understanding, application, analysis and evaluation. Logical and coherent chains of reasoning need to be developed with reference to context where appropriate. The validity and significance of arguments/models and concepts should be considered and supported by relevant chains of reasoning. There should also be a recognition of different viewpoints and/or a critical assessment of the evidence.	2	2	4	6
Evaluate /To what Extent	20	Requires knowledge, understanding, application, analysis and evaluation. Logical and coherent multi-stage chains of reasoning need to be developed with reference to context where appropriate. The validity and significance of arguments/models and concepts should be considered and supported by relevant chains of reasoning. There should also be a recognition of different viewpoints and/or a critical assessment of the evidence so that informed judgements may be made.	3	3	6	8

10. Levels-based mark schemes

Skills based mark schemes have been developed for extended open response questions. These mark schemes provide a consistent understanding of the skills and connections between these skills for each question type and relate directly to the taxonomies (command words) used in the assessments. The bands within each mark scheme clearly show the progression of these skills from the lower bands to the higher bands. Focusing on the skills students are required to demonstrate within each command word ensures that wording is clear, reduces reliance on subjective statements such as 'some analysis' and reflects how teachers and examiners describe the qualities of student work, meaning the expectations are clear for teachers and for markers.

For example, below is the mark scheme for a 14 mark 'discuss' question in the sample assessment materials. The skills outlined in the Assessment Objectives are connected and evidenced throughout the levels.

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–3	<p>AO1: Displays isolated, superficial or imprecise knowledge and understanding of economic terms, principles, concepts, theories and models.</p> <p>AO2: Use of generic material or irrelevant information or inappropriate examples.</p> <p>AO3: Descriptive approach, which has no chains of reasoning.</p>
Level 2	4–6	<p>AO1: Displays elements of knowledge and understanding of economic terms, principles, concepts, theories and models.</p> <p>AO2: Ability to apply knowledge and understanding to some elements of the question. Some evidence and contextual references are evident in the answer.</p> <p>AO3: Chains of reasoning in terms of cause and/or consequence are evident but they may not be developed fully or some stages are omitted.</p>
Level 3	7–8	<p>AO1: Demonstrates accurate and precise knowledge and understanding of economic terms, principles, concepts, theories and models.</p> <p>AO2: Ability to link knowledge and understanding in context using relevant examples that are fully integrated to address the broad elements of the question.</p> <p>AO3: Analysis is clear, coherent, relevant and focused. The answer demonstrates logical and multi-stage chains of reasoning in terms of cause and/or consequence.</p>

AO4: Evaluation

Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–2	Identification of generic evaluative comments. No supporting evidence/reference to context. No evidence of a logical chain of reasoning.
Level 2	3–4	Evidence of evaluation of alternative approaches Some supporting evidence/reference to context. Evaluation is supported by a partially-developed chain of reasoning.
Level 3	5–6	Evaluation recognises different viewpoints and/or is critical of the evidence. Appropriate reference to evidence/context. Evaluation is supported by a logical chain of reasoning.

The mark schemes focus on the quality of student answers rather than the *quantity* of points made and, as such, do not state any number of points students should make in their responses. To guide teachers and markers, the breakdown of marks allocated to each Assessment Objective is given within the levels based mark schemes to identify the emphasis of each Assessment Objective within each question type; the required emphasis is evidenced in the level descriptors.

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**PEARSON EDUCATION LIMITED. REGISTERED IN ENGLAND AND WALES NO. 872828
REGISTERED OFFICE: 80 STRAND, LONDON WC2R 0RL
VAT REG NO GB 278 537121**

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